Rolls-Royce Engine Services – Oakland, Inc.
7200 Earhart Rd
Oakland, CA 94621
Telephone: (510) 613-1000
Fax: (510) 625-6911

RECEIVED
By Alameda County Environmental Health 3:45 pm, Nov 02, 2017

November 1, 2017

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 read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Sincerely,

Dave Goldberg

HS&E Manager

GETTLER-RYAN INC.

November 1, 2017

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

Subject: **Second Semi-Annual 2017 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 2017 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 September 27, 2017, 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 September 27, 2017, GR collected depth to groundwater measurements in eighteen wells (MW-1 through MW-15, 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. MW-17 was not accessible during the event. A second attempt on October 6, 2017 was made to access MW-17, and the well was not accessible. 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-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 September 27, 2017, the groundwater flow direction was to the south at hydraulic gradient of 0.01 to 0.02 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 138 parts per billion (ppb) in well MW-13 to 17,800 ppb in well MW-18. Concentrations of TPHmo were detected in fourteen wells at levels ranging from 125 ppb in well MW-3 to 26,100 ppb in well MW-18. TPHjf were detected in twelve wells at concentrations ranging from 63 ppb in well MW-6 to 7,200 ppb in well MW-18.

TPHg was detected in two wells at a concentration of 140 ppb in MW-13 and 454 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-13 and MW-18 at concentrations of 0.96 ppb and 0.76 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

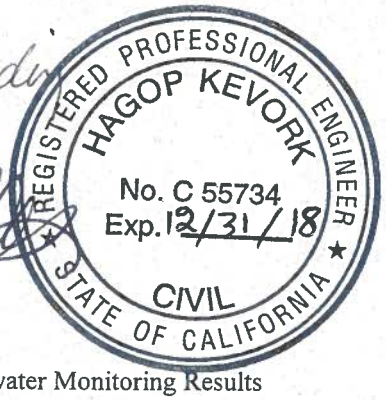
Based on the results of this groundwater monitoring and sampling event, GR concludes and recommends the following:

- 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-13 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

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 (e-mail copy only)

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
03/28/17	7.17	2.88	0.00	4.29	<50	<96.3	<96.3	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.17**	**3.02**	**0.00**	**4.15**	**<50**	**<95.7**	**<95.7**	**<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

Table 1
Groundwater Monitoring Data and Analytical Results
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-2 (cont)															
09/09/10	7.03	2.79	0.00	4.24	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.03	1.92	0.00	5.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.03	2.70	0.00	4.33	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.03	2.41	0.00	4.62	<50	62[6]	340	170[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.03	3.03	0.00	4.00	<50	<50	190	51[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.03	3.21	0.00	3.82	<50	<50	<100	60	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	7.03	2.50	0.00	4.53	<50	<96.1	816	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.03**	**2.87**	**0.00**	**4.16**	**<50**	**<97.1**	**291**	**<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

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)															
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
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
03/28/17	6.73	3.62	0.00	3.11	<50	<94.6	380	110[28]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**6.73**	**4.22**	**0.00**	**2.51**	**<50**	**<98.9**	**125[36]**	**140[28]**	**<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
03/28/17	9.79	5.13	0.00	4.66	<50	<97.3	268[23]	60[28]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**9.79**	**5.51**	**0.00**	**4.28**	**<50**	**<98.4**	**366[36]**	**100[28,33]**	**<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

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)															
09/25/08	8.35	4.52	0.00	3.83	<50	670[6]	1,200	940[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.35	4.43	0.00	3.92	<50	2,100[6]	4,100	1,900[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.35	4.25	0.00	4.10	<50	2,400[6]	5,500	2,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.35	4.38	0.00	3.97	<50	1,300[6]	2,700	990[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.35	4.47	0.00	3.88	<50	1,400[6]	3,000	1,400[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.35	3.47	0.00	4.88	<50	450[6]	1,800	870[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.35	4.34	0.00	4.01	<50	890[6]	2,200	600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.35	3.59	0.00	4.76	<50	670[6]	1,600	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.35	4.39	0.00	3.96	<50	310[6]	760	450[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.35	3.88	0.00	4.47	<50	450[6]	960	1,500[18]	<0.50	0.57	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.35	4.54	0.00	3.81	<50	190[6]	470	470[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.35	4.58	0.00	3.77	<50	510[6]	1,200	680	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.35	4.43	0.00	3.92	<50	2,000[6]	4,500	1,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	8.35	4.21	0.00	4.14	<50	180[6]	690	330[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	8.35	3.81	0.00	4.54	<50	604[30]	2,160	90[33,28,37]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**8.35**	**4.21**	**0.00**	**4.14**	**<50**	**451[30]**	**1,310**	**69[28,33,39]**	**<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	NA
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	<10 - <50[21,22]
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

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-6 (cont)															
09/18/12	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
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
03/28/17	9.51	4.86	0.00	4.65	<50	409[30]	1,620	50[33,28,37]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**9.51**	**5.22**	**0.00**	**4.29**	**<50**	**757[30]**	**2,730**	**63[28,33,39]**	**<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
03/28/17	9.23	4.70	0.00	4.53	<50	455[30]	2,310	84[33,28,37]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**9.23**	**5.09**	**0.00**	**4.14**	**<50**	**1,310[30]**	**5,850**	**150[28,33,39]**	**<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-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
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	<0.50	<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
03/28/17	8.25	3.56	0.00	4.69	<50	<97.7	116	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**8.25**	**3.98**	**0.00**	**4.27**	**<50**	**<98.5**	**246**	**<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

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)															
03/21/11	9.44	4.58	0.00	4.86	<50	280[6]	780	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.44	5.39	0.00	4.05	<50	250[6]	500	700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.44	4.85	0.00	4.59	<50	1,200[6]	2,500	2,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.44	5.57	0.00	3.87	<50	750[6]	1,700	940[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.44	5.48	0.00	3.96	<50	870[6]	2,600	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.44	5.50	0.00	3.94	<50	420[6]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	9.44	5.27	0.00	4.17	<50	610[6]	3,000	710[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	9.44	4.78	0.00	4.66	<50	484[30]	1,800	57[33,28]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**9.44**	**5.14**	**0.00**	**4.30**	**<50**	**561[30]**	**1,450**	**74[28,29,33]**	**<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

Table 1
Groundwater Monitoring Data and Analytical Results
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-10 (cont)															
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
03/28/17	7.51	2.90	0.00	4.61	<50	<97.4	<97.4	280[28,33]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.51**	**3.30**	**0.00**	**4.21**	**<50**	**<98.3**	**250[36]**	**270[25,33,40]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<0.50**	**NA**
MW-11															
10/03/07	7.60	4.01	0.00	3.59	80	250	490	610	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.60	3.71	0.00	3.89	61	410[6]	1,200	520[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.60	3.92	0.00	3.68	<50	2,700[10]	7,300	3,600[15]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.60	3.82	0.00	3.78	<50	2,800[10]	5,900	3,800[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.60	3.71	0.00	3.89	<50	1,500[6]	3,700	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.60	3.49	0.00	4.11	<50	2,300[6]	4,200	2,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.60	3.70	0.00	3.90	<50	1,100[6]	2,600	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.60	3.37	0.00	4.23	<50	1,400[10]	3,800	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.60	3.02	0.00	4.58	<50	260[6]	860	620[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	7.60	3.63	0.00	3.97	<50	510[10]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.60	2.85	0.00	4.75	<50	83[6]	280	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.60	3.70	0.00	3.90	<50	470[6]	990	720[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.60	3.13	0.00	4.47	<50	95[6]	220	1,300[18]	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	NA
09/18/12	7.60	3.83	0.00	3.77	<50	230	600	660[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.60	3.80	0.00	3.80	<50	230	450	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.60	3.87	0.00	3.73	<50	130[6]	280	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	7.60	3.11	0.00	4.49	<50	<99.9	<99.9	120[28,37]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.60**	**3.52**	**0.00**	**4.08**	**<50**	**<97.3**	**220[36]**	**270[28,29,33,39]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<0.50**	**NA**
MW-12															
10/03/07	7.32	3.61	0.00	3.71	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.32	3.35	0.00	3.97	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.32	3.60	0.00	3.72	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.32	3.50	0.00	3.82	<50	<50	<100	51[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

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-12 (cont)															
12/19/08	7.32	3.09	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.32	3.13	0.00	4.19	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.32	3.21	0.00	4.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.32	3.38	0.00	3.94	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.32	2.80	0.00	4.52	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.32	3.39	0.00	3.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.32	2.30	0.00	5.02	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.32	3.36	0.00	3.96	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.32	2.72	0.00	4.60	<50	<50	<100	99[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.32	3.56	0.00	3.76	<50	<50	<100	97[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.32	3.53	0.00	3.79	<50	<50	<100	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.32	3.44	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.32	3.08	0.00	4.24	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	7.32	2.70	0.00	4.62	<50	<96.7	<96.7	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.32**	**3.18**	**0.00**	**4.14**	**<50**	**<97.6**	**<97.6**	**<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

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-13 (cont)															
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
03/28/17	6.10	1.38	0.00	4.72	64	173	<97.1	160[28,33,34]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**6.10**	**2.45**	**0.00**	**3.65**	**140**	**138**	**284[36]**	**730[28,33,39]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**0.96**	**<0.50**	**NA**
MW-14															
10/02/07	6.42	2.40	0.00	4.02	67	300	870	1,400	<0.50	<0.50	<0.50	<0.50	1.4[4]	6.1	NA
03/14/08	6.42	2.44	0.00	3.98	50	250[6]	350	500[7]	<0.50	<0.50	<0.50	<0.50	1.7	5.0	NA
06/26/08	6.42	2.62	0.00	3.80	<50	570[10]	2,700	2,000[15]	<0.50	<0.50	<0.50	<0.50	1.4	3.1	NA
09/25/08	6.42	2.58	0.00	3.84	<50	510[10]	1,700	1,800[16]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
12/19/08	6.42	2.14	0.00	4.28	<50	480[6]	2,100	1,200[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/26/09	6.42	2.23	0.00	4.19	<50	79[6]	540	1,000[18]	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	NA
06/24/09	6.42	2.33	0.00	4.09	<50	<50	290	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.2	0.52	NA
09/24/09	6.42	2.47	0.00	3.95	<50	88[10]	350	1,200[18]	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	NA
01/15/10	6.42	1.95	0.00	4.47	<50	60[6]	490	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
09/09/10	6.42	2.52	0.00	3.90	<50	150[10]	500	890[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/21/11	6.42	1.40	0.00	5.02	<50	<50	230	730[18]	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	NA
09/02/11	6.42	2.49	0.00	3.93	<50	140[6]	550	900[18]	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	NA
04/17/12	6.42	1.83	0.00	4.59	<50	140[6]	800	2,400[18]	<0.50	0.69	<0.50	<0.50	1.2	<0.50	NA
09/18/12	6.42	2.65	0.00	3.77	51	130[6]	680	1,300[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
03/25/13	6.42	2.63	0.00	3.79	<50	160	640	2,000	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	NA
09/16/13	6.42	2.53	0.00	3.89	<50	86[6]	360	920[18]	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	NA
06/26/14	6.42	2.15	0.00	4.27	<50	100[6]	650	950[18]	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	NA
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
03/28/17	6.42	1.80	0.00	4.62	<50	226[30]	333[36]	100[33,28]	<0.50	<0.50	<0.50	<1.5	0.89	<0.50	NA
09/27/17	**6.42**	**1.28**	**0.00**	**5.14**	**<50**	**<98.3**	**698**	**91[28,33]**	**<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-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
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
03/28/17	7.51	3.48	0.00	4.03	<50	<96.4	<96.4	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**7.51**	**4.54**	**0.00**	**2.97**	**<50**	**<97.2**	**<97.2**	**<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

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-17 (cont)															
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
03/28/17	0.04	Unable to access well due to flooding				--	--	--	--	--	--	--	--	--	**NA**
09/27/17	**0.04**	**Unable to access well**													
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

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 (cont)															
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
03/28/17	7.05	2.38	0.00	4.67	773	22,800	27,600	12,000[33,29,28,38,35]	<0.50	<0.50	<0.50	<15	0.58	<0.50	NA
09/27/17	**7.05**	**2.90**	**0.00**	**4.15**	**454**	**17,800[30]**	**26,100**	**7,200[28,29,35,38]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**0.76**	**<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
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
03/28/17	8.11	3.75	0.00	4.36	<50	<97.4	<97.4	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**8.11**	**3.89**	**0.00**	**4.22**	**<50**	**<98.4**	**<98.4**	**<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

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
NPORD MW-4 (cont)															
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
03/28/17	10.06	5.54	0.00	4.52	<50	111[24]	<97.1	190[28]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**10.06**	**5.96**	**0.00**	**4.10**	**<50**	**178**	**283**	**140[28]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<0.50**	**NA**
QA															
09/14/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/02/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
6/26/08[14]	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
07/03/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
QA (cont)															
04/17/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
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
03/28/17	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	NA
09/27/17	**--**	**--**	**--**	**--**	**<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 dup result 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.

[36] Lower boiling hydrocarbons present, atypical for Motor Oil.

[37] Stoddard solvent/mineral spirit(>); and/or gasoline range compounds.

[38] Stoddard solvent/mineral spirit(?)

[39] Gasoline range compounds are significant.

[40] Pattern resembles kerosene/kerosene range/jet fuel range; and/or pattern resembles stoddard solvent/mineral spirit

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	--	--	--	--	--

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-14									
09/09/10	0.20	0.14	-264.6	-223.9	--	--	--	--	--
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

EXPLANATIONS:

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

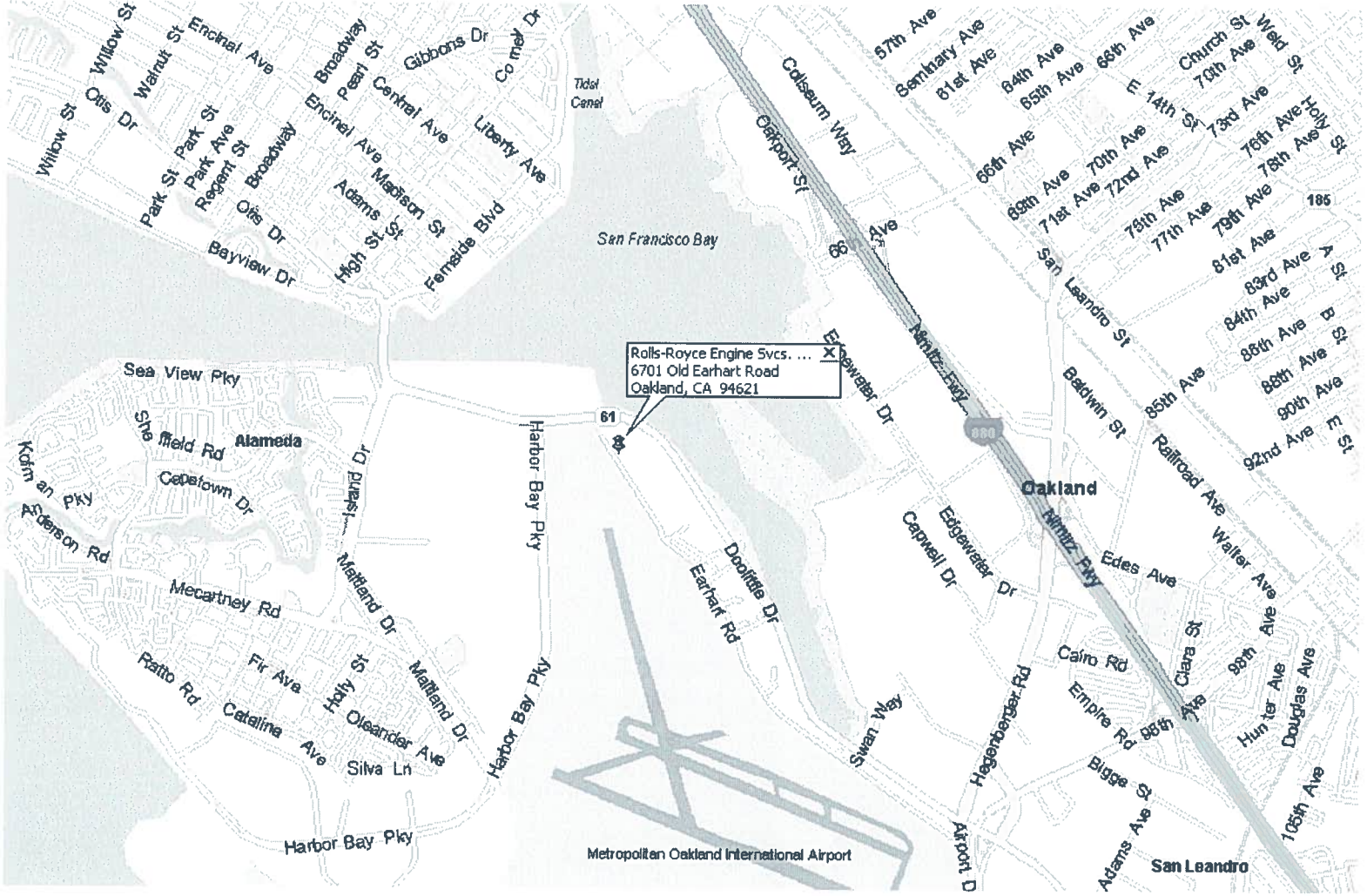
ANALYTICAL METHODS:

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
3/28/2017	**0.00**	**NA**	**4.00**	**0.00**
		Totals:	**43.66**	**4.21**

NA = Not Applicable



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

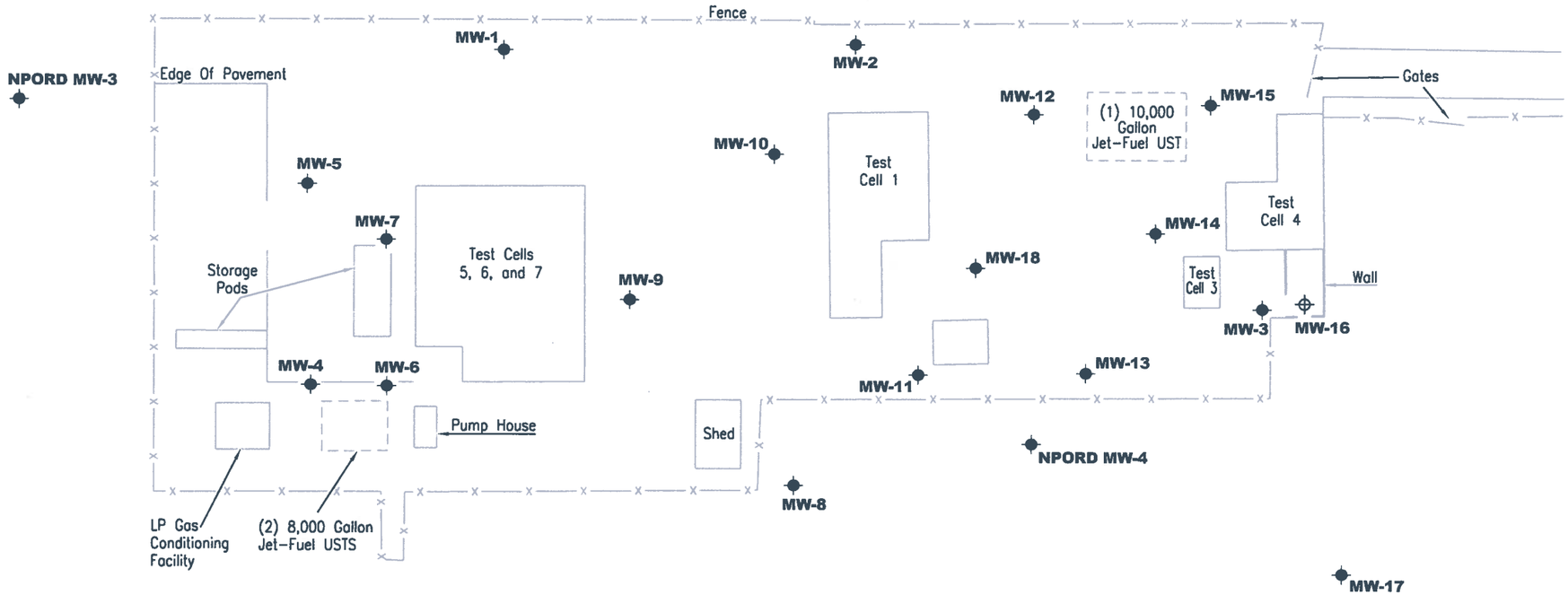
FIGURE
1

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

DATE 11/07

REVIEWED BY

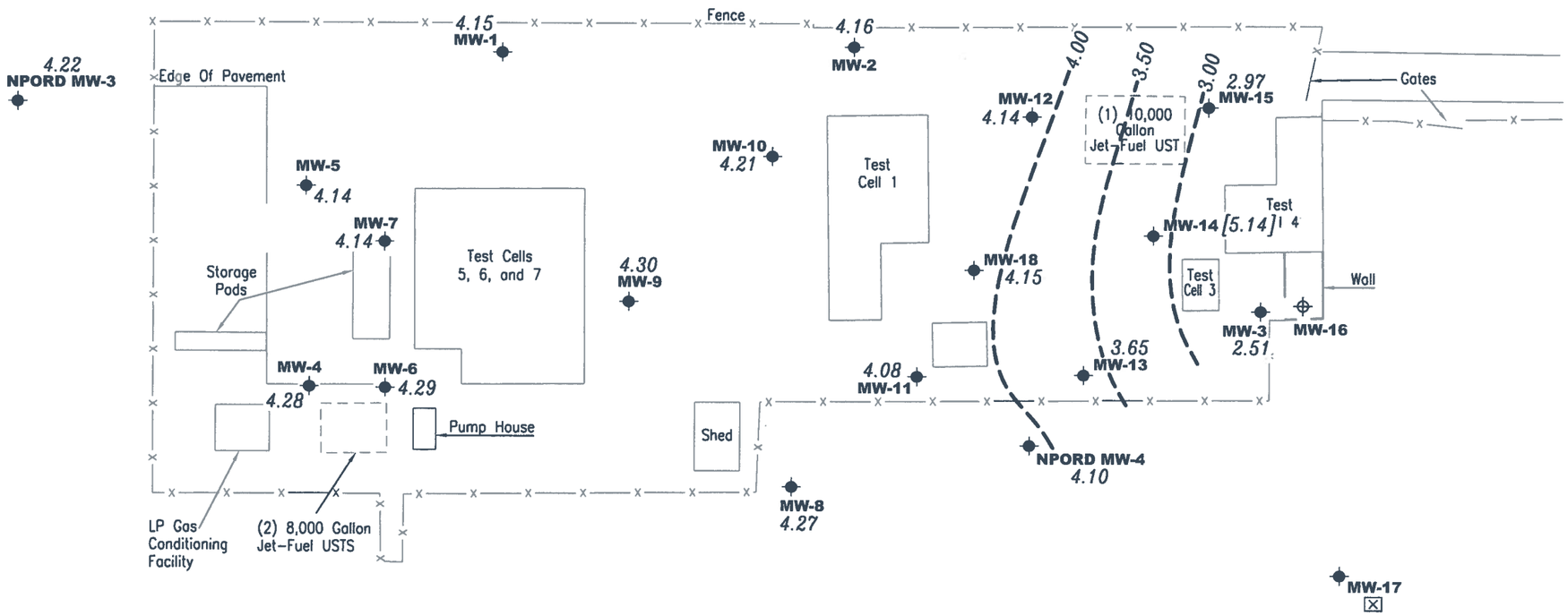
PROJECT NUMBER 948218.2

FILE NAME: P:\Enviro\Rolls Royce\017-Rolls Royce.DWG | Layout Tab: Site Plan

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

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
- ☒ Inaccessible



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

REVISED DATE

DATE September 27, 2017

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

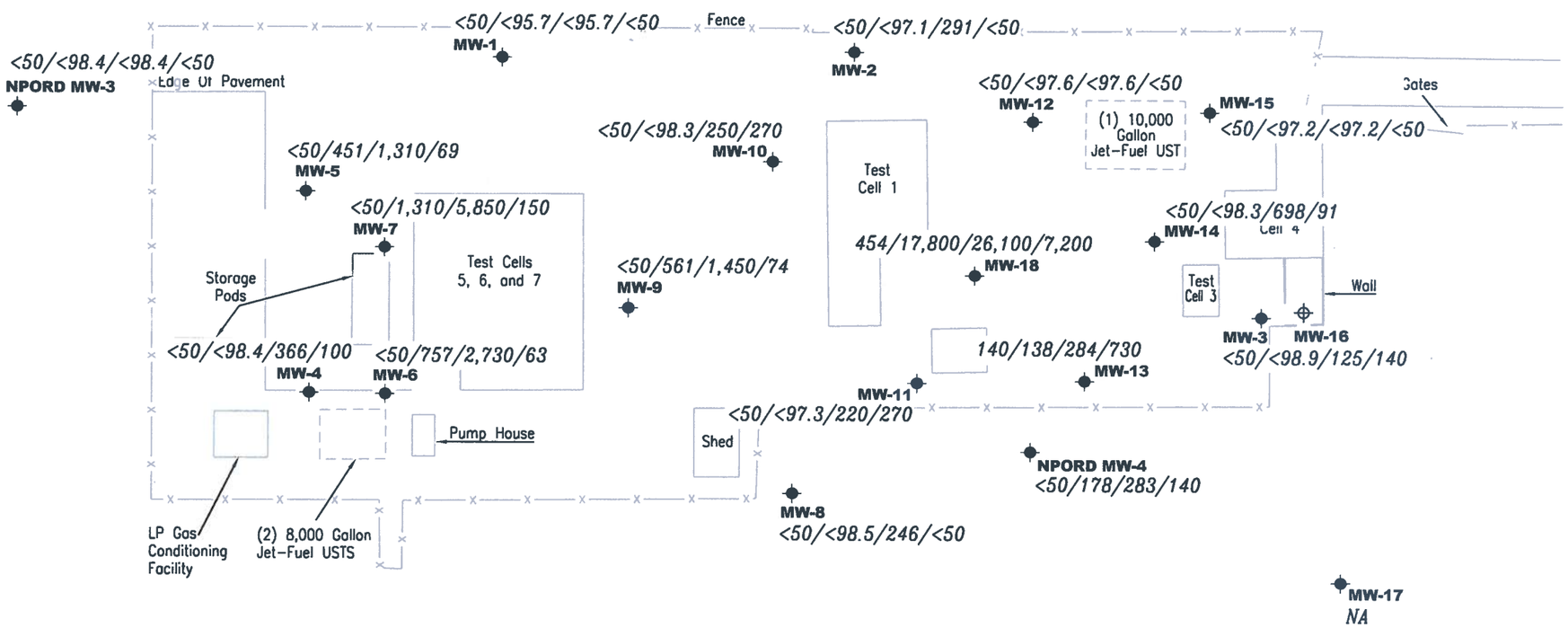
PROJECT NUMBER 948218.2

REVIEWED BY

FILE NAME: P:\Enviro\Rolls Royce\Q17-Rolls Royce.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.

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

FIGURE **4**

REVISED DATE

DATE
September 27, 2017

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\Q17-Rolls Royce.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: **17258218**

Site Address: **6701 Old Earhart Road** Event Date: 9/27/17 (inclusive)

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

Well ID MW-1 Date Monitored: 9/27/17

Well Diameter (2) 4 in.

Total Depth 8.43 ft.

Depth to Water 3.02 ft. ☐ Check if water column is less then 0.50 ft.

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

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

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.10

Purge Equipment:

Disposable Bailer	✓
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): 1135 Weather Conditions: SUNNY

Sample Time/Date: 1205 / 9/27/17 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: 3.67

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
1138	1	7.21	(720	23.8		
1141	2	7.18	(7.19	23.7		
1144	3	7.17	17.17	23.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID MW-2 Date Monitored: 9.27.17
Well Diameter ②|4 in.
Total Depth 8.91 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.

6.04 xVF .17 = 1.0 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.07

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

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

Start Time (purge): 1110 Weather Conditions: Sunny
Sample Time/Date: 1135 / 9.27.17 Water Color: Brown Odor: Y / N
Approx. Flow Rate: – gpm. Sediment Description: light
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 3.16

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1113	1	6.63	OUT RANGE	23.7		
1116	2	6.69	↓	23.5		
1120	3	6.70		23.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: FT

Well ID MW-3
Well Diameter 2 | 4 in.
Total Depth 12.09 ft.
Depth to Water 4.22 ft.
Date Monitored: 9.27.17

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.

7.87 xVF .17 = 1.33 x3 case volume = Estimated Purge Volume: 4.0 gal.

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

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

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

Start Time (purge): 1115 Weather Conditions: SUNNY
Sample Time/Date: 1134 / 9.27.17 Water Color: CLEAR Odor: Y / N STRONG
Approx. Flow Rate: ✓ gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: Volume: gal. DTW @ Sampling: 5.06

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1118	1.5	7.17	3667	22.2		
1121	3.0	7.17	3802	22.4		
1124	4.0	7.18	3957	22.5		
					✓	✓

LABORATORY INFORMATION

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

COMMENTS: Bolt L. 8" (2BB1F, 1SF)

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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9/27/17 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-4
Well Diameter (2) 4 in.
Total Depth 9.98 ft.
Depth to Water 5.51 ft.
Date Monitored: 9/27/17

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.

4.47 xVF 0.17 = 0.75 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.40

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): 0905 Weather Conditions: SUNNY
Sample Time/Date: 0940 / 9/27/17 Water Color: CLEAR Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 6.07

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
0908	.75	7.01	2.29	23.7		
0911	1.5	6.97	2.24	23.7		
0914	2.5	6.95	2.23	23.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	7 x voa vial	YES	HCL	PACE	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: 17258218
Site Address: 6701 Old Earhart Road Event Date: 9/27/17 (inclusive)
City: Oakland, CA Sampler: GM

Well ID MW-5 Date Monitored: 9/27/17
Well Diameter (2)/4 in.
Total Depth 9.06 ft.
Depth to Water 4.21 ft.

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

☐ Check if water column is less then 0.50 ft.

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

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.30

Purge Equipment:

Disposable Bailer	X
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): 0820 Weather Conditions: SUNNY
Sample Time/Date: 0855/9/27/17 Water Color: CHARCOAL Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 4.94

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature (C) / F)	D.O. (mg/L)	ORP (mV)
0823	1	7.07	6.82	24.1		
0826	2	7.04	6.79	24.3		
0829	3	7.01	6.77	24.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	7 x voa vial	YES	HCL	PACE	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: 17258218
Site Address: 6701 Old Earhart Road Event Date: 9/27/17 (inclusive)
City: Oakland, CA Sampler: GM

Well ID MW-6
Well Diameter (2) 4 in.
Total Depth 10.71 ft.
Depth to Water 5.22 ft.
Date Monitored: 9/27/17

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.

5.49 xVF 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]: 6.31

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): 0955 Weather Conditions: SUNNY
Sample Time/Date: 1030 / 9/27/17 Water Color: CHARCOAL Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.94

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS (mS) µmhos/cm)	Temperature (C F)	D.O. (mg/L)	ORP (mV)
0958	1	7.12	3.04	23.9		
1001	2	7.10	3.08	23.9		
1004	3	7.06	3.06	24.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9/27/17 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-7
Well Diameter (2) 4 in.
Total Depth 10.10 ft.
Depth to Water 5.09 ft.
5.01 xVF 0.17 = 0.86

Date Monitored: 9/27/17

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 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: 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): 1045
Sample Time/Date: 1120 / 9/27/17
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.33

Weather Conditions: SUNNY
Water Color: BLACK 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)
1048	1	6.94	3.52	21.2		
1051	2	6.92	3.51	21.3		
1054	3	6.91	3.49	21.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID MW-8
Well Diameter 2/4 in.
Total Depth 9.84 ft.
Depth to Water 3.98 ft.
Date Monitored: 9.27.17

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.

5.86 xVF .17 = 0.9 x3 case volume = Estimated Purge Volume: 2.7 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.15

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

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

Start Time (purge): 0810
Sample Time/Date: 0835 / 9.27.17
Approx. Flow Rate: – gpm.
Did well de-water? No If yes, Time: Volume: gal. DTW @ Sampling: 4.17

Weather Conditions: SUNNY
Water Color: GRAY Odor: Y / N Light
Sediment Description: Light

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0813	1	6.98	OUT RANGE	21.8		
0816	2	7.04	↓	21.6		
0819	3	7.05		21.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9/27/17 (inclusive)
City: **Oakland, CA** Sampler: GM/MC

Well ID MW-9
Well Diameter (2) 4 in.
Total Depth 9.95 ft.
Depth to Water 5.14 ft.
Date Monitored: 9/27/17

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.

4.81 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]: 6.10

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): 1140 Weather Conditions: Sunny
Sample Time/Date: 1205 / 9-27-17 Water Color: Brown Odor: (Y) / N light
Approx. Flow Rate: ~ gpm. Sediment Description: light
Did well de-water? NO If yes, Time: Volume: gal. DTW @ Sampling: 5.47

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1143	1	6.82	2542	23.2		
1147	2	6.85	2550	23.1		
1150	2.5	6.86	2552	23.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID MW-10
Well Diameter 2 | 4 in.
Total Depth 10.05 ft.
Depth to Water 3.30 ft.
Date Monitored: 9.27.17

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.

6.75 xVF .17 = 1.1 x3 case volume = Estimated Purge Volume: 3.3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.65

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): 0900
Sample Time/Date: 0930 / 9.27.17
Approx. Flow Rate: - gpm.
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 3.76

Weather Conditions: Sunny
Water Color: GRAY Odor: Y / (N)
Sediment Description: Trace

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0903	1	7.17	3680	24.1		
0906	2	7.21	3674	23.8		
0911	3.5	7.22	3671	23.8		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-10	7 x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9-27-17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID MW-11 Date Monitored: 9-27-17
Well Diameter 2 | 4 in.
Total Depth 9.69 ft.
Depth to Water 3.52 ft. ☐ Check if water column is less then 0.50 ft.

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

6.17 xVF .17 = 1.0 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.75

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): 0945 Weather Conditions: Sunny
Sample Time/Date: 1015 / 9.27.17 Water Color: Cloudy Odor: Y / (N)
Approx. Flow Rate: ~ gpm. Sediment Description: None
Did well de-water? No If yes, Time: Volume: gal. DTW @ Sampling: 3.89

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0948	1	7.16	OUT RANGE	22.1		
0951	2	7.11	↓	22.0		
0954	3	7.12		21.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-11	6 / x voa vial	YES	HCL	PACE	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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: FT

Well ID MW-12
Well Diameter (2)/4 in.
Total Depth 9.94 ft.
Depth to Water 3.18 ft.
6.76 xVF .17 = 1.14 x3 case volume = Estimated Purge Volume: 3.0 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.53

Date Monitored: 9.27.17

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

☐ Check if water column is less then 0.50 ft.

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

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

Start Time (purge): 1005 Weather Conditions: SUNNY
Sample Time/Date: 1024 / 9.27.17 Water Color: CLEAR Odor: (Y) / N STRONG
Approx. Flow Rate: ~ gpm. Sediment Description: NONE
Did well de-water? No If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 4.06

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1008	1.0	6.92	OFF-SCALE	25.5		
1011	2.0	7.02	↓	25.6		
1014	3.0	7.15	↓	25.7		

LABORATORY INFORMATION

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

COMMENTS: MONITOR 8" ISP

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: 17258218
Site Address: 6701 Old Earhart Road Event Date: 9.27.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-13
Well Diameter 2 (4) in.
Total Depth 9.51 ft.
Depth to Water 2.45 ft.
Date Monitored: 9.27.17

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.

7.06 xVF .66 = 4.65 x3 case volume = Estimated Purge Volume: 14.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.86

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

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

Start Time (purge): 1150 Weather Conditions: SUNNY
Sample Time/Date: 1245 / 9.27.17 Water Color: CLEAR Odor: Y / N STRONG
Approx. Flow Rate: / gpm. Sediment Description: NONE
Did well de-water? Yes If yes, Time: 1201 Volume: 5.0 gal. DTW @ Sampling: 3.84

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1200	4.5	7.02	3854	24.7		

LABORATORY INFORMATION

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

COMMENTS: MORRISON 12" (OK)

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: 17258218
Site Address: 6701 Old Earhart Road Event Date: 9.27.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-14
Well Diameter (2)4 in.
Total Depth 10.03 ft.
Depth to Water 1.28 ft.
Date Monitored: 9.27.17

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.

8.75 xVF .17 = 1.48 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.03

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

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

Start Time (purge): 1040 Weather Conditions: Sunny
Sample Time/Date: 1100 / 9.27.17 Water Color: CLEAR Odor: (Y) / N STRONG
Approx. Flow Rate: ~ gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 2.28

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1043	1.5	7.26	OFF-SCALE	25.3		
1046	3.0	7.35	↓	25.1		
1049	4.0	7.42	↓	25.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-14	6 x voa vial	YES	HCL	PACE	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" ISE

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: 17258218
Site Address: 6701 Old Earhart Road Event Date: 9.27.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-15 Date Monitored: 9.27.17
Well Diameter (2)/4 in.
Total Depth 10.00 ft.
Depth to Water 4.54 ft. ☐ Check if water column is less then 0.50 ft.

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

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

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.63

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

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

Start Time (purge): 0930 Weather Conditions: SUNNY
Sample Time/Date: 0949 / 9.27.17 Water Color: CLEAR Odor: (Y) / N MODERATE
Approx. Flow Rate: ____ gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 5.04

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0933	1.0	6.77	OFF-SCALE	25.4		
0936	2.0	6.80	↓			
0939	3.0	6.83	↓	26.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-15	10 x voa vial	YES	HCL	PACE	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" (2SF)

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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9.27.17 (inclusive)
City: **Oakland, CA** Sampler: FT

Well ID MW-17 Date Monitored: UTA
Well Diameter 2/4 in.
Total Depth 9.81 ft.
Depth to Water — ft. ☐ Check if water column is less then 0.50 ft.

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

— xVF — = — x3 case volume = Estimated Purge Volume: — 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: 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): Weather Conditions:
Sample Time/Date: / Water Color: Odor: Y / N
Approx. Flow Rate: gpm. Sediment Description:
Did well de-water? If yes, Time: Volume: gal. DTW @ Sampling:

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

LABORATORY INFORMATION

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

COMMENTS: UTA:
2nd Attempt made on 10/6/17 - unsuccessful - UTA

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: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9-27-17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID MW-18
Well Diameter (2) 4 in.
Total Depth 9.94 ft.
Depth to Water 2.90 ft.
Date Monitored: 9-27-17

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

☐ Check if water column is less then 0.50 ft.

7.04 xVF .17 = 1.1 x3 case volume = Estimated Purge Volume: 3.3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.36

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

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

Start Time (purge): 1030 Weather Conditions: Sunny
Sample Time/Date: 1055 / 9-27-17 Water Color: Cloudy Odor: (Y) / N Light
Approx. Flow Rate: - gpm. Sediment Description: Light
Did well de-water? no If yes, Time: Volume: gal. DTW @ Sampling: 3.16

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) / mS µmhos/cm)	Temperature (C) / F)	D.O. (mg/L)	ORP (mV)
1033	1	7.71	OUT RANGE	24.4		
1036	2	7.65	"	24.2		
1042	3.5	7.67	"	24.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-18	3 6 x voa vial	YES	HCL	PACE	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: Sock in Well

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9/27/17 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID NPORDMW-3 Date Monitored: 9/27/17
Well Diameter 2 (4) in.
Total Depth 16.47 ft.
Depth to Water 3.89 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.

12.58 xVF 0.66 = 8.30 x3 case volume = Estimated Purge Volume: 25 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.40

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): 0725 Weather Conditions: SUNNY
Sample Time/Date: 0805/9/27/17 Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: 2 gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 3.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
0729	8	7.54	10.69	24.0		
0733	16	7.52	10.55	24.1		
0738	26	7.49	10.51	23.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORDMW-3	6 x voa vial	YES	HCL	PACE	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: TUBES(2) IN WELL

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **17258218**
Site Address: **6701 Old Earhart Road** Event Date: 9-27-17 (inclusive)
City: **Oakland, CA** Sampler: ML

Well ID NPORD MW-4 Date Monitored: 9-27-17
Well Diameter (2)4 in.
Total Depth 11.45 ft.
Depth to Water 5.96 ft. ☐ Check if water column is less then 0.50 ft.
5.49 xVF .17 = 0.9 x3 case volume = Estimated Purge Volume: 2.7 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.05

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

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

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

Start Time (purge): 0730 Weather Conditions: Sunny
Sample Time/Date: 0755 / 9.27.17 Water Color: GRAY Odor: Y / N light
Approx. Flow Rate: - gpm. Sediment Description: light
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)
0733	1	7.11	OUT RANGE	21.3		
0736	2	7.17	↓	21.1		
0739	3	7.21	↓	21.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORD MW-4	6 x voa vial	YES	HCL	PACE	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

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

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION:	
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	CELL 1 TOWER ~~Notes~~ WEEKLY min OPERATION TIME
8/28/17	05:00	MW18				05	TOWER 1 3 HRS
9/5/17	05:00	MW18				10	TOWER 1 3 HRS
9/11/17	04:30	MW18				10	TOWER 1 3 HRS
9/18/17	04:30	MW18				10	TOWER 1 3 HRS
9/25/17	04:30	MW18				10	TOWER 1 3 HRS
10/9/17	04:30	MW18				200	TOWER 1 3 HRS
10/16/17	04:30	MW18				20	TOWER 1 3 HRS
10/23/17	04:30	MW18				10	TOWER 1 3 HRS

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: ROLLS-ROYCE OAKLAND
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~~ COLL / TOWER COOLING TOWER MIN OPERATION
5-30-17	04:55	MW18				210	TOWERS) 3 HRS
6-5-17	05.00	MW18				20	TOWERS) 3 HRS
6-12-17	05:00	MW18				110	TOWERS) 3 HRS
6-20-17	04:30	MW18				306	TOWERS) 3 HRS.
6-26-17	04:35	MW18				110	TOWERS 3 HRS
7-5-17	04:45	MW18				10	TOWERS) 3 HRS
7-10-17	05:00	MW18				05	TOWERS) 3 HRS
7-17-17	04:30	MW18				05	TOWERS) 3 HRS
7-24-17	04:30	MW18				87	TOWERS) 3 HRS
7-31-17	05:00	MW18				10	TOWERS) 3 HRS
8-7-17	05:00	MW18				10	TOWERS) 3 HRS
8-14-17	05:00	MW18				10	TOWERS) 3 HRS

Pace Analytical®
www.pacelabs.com

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

October 05, 2017

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

RE: Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Dear Deanna L. Harding:
Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2017. 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.

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

Sincerely,

Jaime LaFave
jaime.lafave@pacelabs.com
(530) 297-4800
Project Manager

Enclosures

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

CERTIFICATIONS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

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

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

SAMPLE SUMMARY

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1297466001	QA	Water	09/27/17 00:00	09/27/17 18:05
1297466002	MW-1	Water	09/27/17 12:05	09/27/17 18:05
1297466003	MW-2	Water	09/27/17 11:35	09/27/17 18:05
1297466004	MW-3	Water	09/27/17 11:34	09/27/17 18:05
1297466005	MW-4	Water	09/27/17 09:40	09/27/17 18:05
1297466006	MW-5	Water	09/27/17 08:55	09/27/17 18:05
1297466007	MW-6	Water	09/27/17 10:30	09/27/17 18:05
1297466008	MW-7	Water	09/27/17 11:20	09/27/17 18:05
1297466009	MW-8	Water	09/27/17 08:35	09/27/17 18:05
1297466010	MW-9	Water	09/27/17 12:05	09/27/17 18:05
1297466011	MW-10	Water	09/27/17 09:30	09/27/17 18:05
1297466012	MW-11	Water	09/27/17 10:15	09/27/17 18:05
1297466013	MW-12	Water	09/27/17 10:24	09/27/17 18:05
1297466014	MW-13	Water	09/27/17 12:45	09/27/17 18:05
1297466015	MW-14	Water	09/27/17 11:00	09/27/17 18:05
1297466016	MW-15	Water	09/27/17 09:49	09/27/17 18:05
1297466017	MW-18	Water	09/27/17 10:55	09/27/17 18:05
1297466018	NPORDMW-3	Water	09/27/17 08:05	09/27/17 18:05
1297466019	NPORDMW-4	Water	09/27/17 07:55	09/27/17 18:05

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

SAMPLE ANALYTE COUNT

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1297466001	QA	EPA 8260B	JCP	10	PASI-DAV
1297466002	MW-1	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466003	MW-2	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466004	MW-3	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466005	MW-4	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466006	MW-5	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466007	MW-6	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466008	MW-7	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466009	MW-8	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466010	MW-9	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466011	MW-10	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466012	MW-11	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1297466013	MW-12	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV

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

SAMPLE ANALYTE COUNT

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1297466014	MW-13	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV
1297466015	MW-14	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV
1297466016	MW-15	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV
1297466017	MW-18	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV
1297466018	NPORDMW-3	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV
1297466019	NPORDMW-4	EPA 8015B	DYW	2	PASI-DAV
		EPA 8015B	DYW	2	PASI-DAV
		EPA 8260B	PP1	10	PASI-DAV

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: QA **Lab ID: 1297466001** Collected: 09/27/17 00:00 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 17:55	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 17:55	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 17:55		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 17:55	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 17:55	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 17:55	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 17:55	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-125	1		09/29/17 17:55	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		09/29/17 17:55	2037-26-5	
4-Bromofluorobenzene (S)	92	%.	75-125	1		09/29/17 17:55	460-00-4	

Sample: MW-1 **Lab ID: 1297466002** Collected: 09/27/17 12:05 Received: 09/27/17 18:05 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	95.7	1	09/28/17 10:46	09/28/17 14:57	64742-65-0	
Surrogates								
n-Octacosane (S)	126	%.	75-125	1	09/28/17 10:46	09/28/17 14:57	630-02-4	S0
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.7	1	09/28/17 10:46	09/28/17 18:43		
Surrogates								
n-Octacosane (S)	122	%.	75-125	1	09/28/17 10:46	09/28/17 18:43	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 18:14	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 18:14	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 18:14		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 18:14	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 18:14	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 18:14	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 18:14	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-125	1		09/29/17 18:14	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		09/29/17 18:14	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		09/29/17 18:14	460-00-4	

Sample: MW-2 **Lab ID: 1297466003** Collected: 09/27/17 11:35 Received: 09/27/17 18:05 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	**291**	ug/L	97.1	1	09/28/17 10:46	09/28/17 15:52	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-2 **Lab ID: 1297466003** Collected: 09/27/17 11:35 Received: 09/27/17 18:05 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	%.	75-125	1	09/28/17 10:46	09/28/17 15:52	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	97.1	1	09/28/17 10:46	09/28/17 19:08		
Surrogates								
n-Octacosane (S)	129	%.	75-125	1	09/28/17 10:46	09/28/17 19:08	630-02-4	S0
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 18:33	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 18:33	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 18:33		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 18:33	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 18:33	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 18:33	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 18:33	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-125	1		09/29/17 18:33	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		09/29/17 18:33	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		09/29/17 18:33	460-00-4	

Sample: MW-3 **Lab ID: 1297466004** Collected: 09/27/17 11:34 Received: 09/27/17 18:05 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	**125**	ug/L	98.9	1	09/28/17 10:46	09/28/17 16:00	64742-65-0	DH
Surrogates								
n-Octacosane (S)	113	%.	75-125	1	09/28/17 10:46	09/28/17 16:00	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.9	1	09/28/17 10:46	09/28/17 19:16		
Surrogates								
n-Octacosane (S)	119	%.	75-125	1	09/28/17 10:46	09/28/17 19:16	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 12:28	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 12:28	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 12:28		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 12:28	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 12:28	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 12:28	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 12:28	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-125	1		09/29/17 12:28	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		09/29/17 12:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-3 **Lab ID: 1297466004** Collected: 09/27/17 11:34 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	94	%.	75-125	1		09/29/17 12:28	460-00-4	

Sample: MW-4 **Lab ID: 1297466005** Collected: 09/27/17 09:40 Received: 09/27/17 18:05 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	**366**	ug/L	98.4	1	09/28/17 10:46	09/28/17 16:09	64742-65-0	DH
Surrogates								
n-Octacosane (S)	118	%.	75-125	1	09/28/17 10:46	09/28/17 16:09	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.4	1	09/28/17 10:46	09/28/17 19:24		
Surrogates								
n-Octacosane (S)	121	%.	75-125	1	09/28/17 10:46	09/28/17 19:24	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 18:52	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 18:52	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 18:52		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 18:52	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 18:52	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 18:52	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 18:52	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-125	1		09/29/17 18:52	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		09/29/17 18:52	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		09/29/17 18:52	460-00-4	

Sample: MW-5 **Lab ID: 1297466006** Collected: 09/27/17 08:55 Received: 09/27/17 18:05 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	**1310**	ug/L	98.2	1	09/28/17 10:46	09/28/17 16:17	64742-65-0	
Surrogates								
n-Octacosane (S)	111	%.	75-125	1	09/28/17 10:46	09/28/17 16:17	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**451**	ug/L	98.2	1	09/28/17 10:46	09/28/17 19:32		DM
Surrogates								
n-Octacosane (S)	113	%.	75-125	1	09/28/17 10:46	09/28/17 19:32	630-02-4	

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-5 **Lab ID: 1297466006** Collected: 09/27/17 08:55 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 19:11	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 19:11	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 19:11		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 19:11	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 19:11	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 19:11	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 19:11	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-125	1		09/29/17 19:11	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		09/29/17 19:11	2037-26-5	
4-Bromofluorobenzene (S)	92	%.	75-125	1		09/29/17 19:11	460-00-4	

Sample: MW-6 **Lab ID: 1297466007** Collected: 09/27/17 10:30 Received: 09/27/17 18:05 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	**2730**	ug/L	98.2	1	09/28/17 10:46	09/28/17 16:25	64742-65-0	
Surrogates								
n-Octacosane (S)	98	%.	75-125	1	09/28/17 10:46	09/28/17 16:25	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**757**	ug/L	98.2	1	09/28/17 10:46	09/28/17 19:41		DM
Surrogates								
n-Octacosane (S)	100	%.	75-125	1	09/28/17 10:46	09/28/17 19:41	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		09/29/17 19:31	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		09/29/17 19:31	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		09/29/17 19:31		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		09/29/17 19:31	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		09/29/17 19:31	91-20-3	
Toluene	ND	ug/L	0.50	1		09/29/17 19:31	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		09/29/17 19:31	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-125	1		09/29/17 19:31	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		09/29/17 19:31	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		09/29/17 19:31	460-00-4	

Sample: MW-7 **Lab ID: 1297466008** Collected: 09/27/17 11:20 Received: 09/27/17 18:05 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	**5850**	ug/L	98.8	1	09/28/17 10:46	09/28/17 16:33	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-7 **Lab ID: 1297466008** Collected: 09/27/17 11:20 Received: 09/27/17 18:05 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)	99	%.	75-125	1	09/28/17 10:46	09/28/17 16:33	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**1310**	ug/L	98.8	1	09/28/17 10:46	09/28/17 19:49		DM
Surrogates								
n-Octacosane (S)	101	%.	75-125	1	09/28/17 10:46	09/28/17 19:49	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 12:58	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 12:58	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 12:58		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 12:58	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 12:58	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 12:58	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 12:58	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		10/02/17 12:58	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		10/02/17 12:58	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		10/02/17 12:58	460-00-4	

Sample: MW-8 **Lab ID: 1297466009** Collected: 09/27/17 08:35 Received: 09/27/17 18:05 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	**246**	ug/L	98.5	1	09/28/17 10:46	09/28/17 16:41	64742-65-0	
Surrogates								
n-Octacosane (S)	107	%.	75-125	1	09/28/17 10:46	09/28/17 16:41	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.5	1	09/28/17 10:46	09/28/17 19:57		
Surrogates								
n-Octacosane (S)	110	%.	75-125	1	09/28/17 10:46	09/28/17 19:57	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 15:02	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 15:02	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 15:02		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 15:02	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 15:02	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 15:02	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 15:02	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		10/02/17 15:02	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		10/02/17 15:02	2037-26-5	

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-8 **Lab ID: 1297466009** Collected: 09/27/17 08:35 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 15:02	460-00-4	

Sample: MW-9 **Lab ID: 1297466010** Collected: 09/27/17 12:05 Received: 09/27/17 18:05 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	**1450**	ug/L	98.8	1	09/28/17 10:46	09/28/17 16:49	64742-65-0	
Surrogates								
n-Octacosane (S)	110	%.	75-125	1	09/28/17 10:46	09/28/17 16:49	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**561**	ug/L	98.8	1	09/28/17 10:46	09/28/17 20:05		DM
Surrogates								
n-Octacosane (S)	112	%.	75-125	1	09/28/17 10:46	09/28/17 20:05	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 15:26	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 15:26	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 15:26		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 15:26	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 15:26	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 15:26	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 15:26	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		10/02/17 15:26	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		10/02/17 15:26	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		10/02/17 15:26	460-00-4	

Sample: MW-10 **Lab ID: 1297466011** Collected: 09/27/17 09:30 Received: 09/27/17 18:05 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	**250**	ug/L	98.3	1	09/28/17 10:46	09/28/17 16:57	64742-65-0	DH
Surrogates								
n-Octacosane (S)	115	%.	75-125	1	09/28/17 10:46	09/28/17 16:57	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.3	1	09/28/17 10:46	09/28/17 20:13		
Surrogates								
n-Octacosane (S)	117	%.	75-125	1	09/28/17 10:46	09/28/17 20:13	630-02-4	

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-10 **Lab ID: 1297466011** Collected: 09/27/17 09:30 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 15:51	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 15:51	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 15:51		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 15:51	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 15:51	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 15:51	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 15:51	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		10/02/17 15:51	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		10/02/17 15:51	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 15:51	460-00-4	

Sample: MW-11 **Lab ID: 1297466012** Collected: 09/27/17 10:15 Received: 09/27/17 18:05 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	**220**	ug/L	97.3	1	09/28/17 10:46	09/28/17 17:05	64742-65-0	DH
Surrogates								
n-Octacosane (S)	115	%.	75-125	1	09/28/17 10:46	09/28/17 17:05	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	97.3	1	09/28/17 10:46	09/28/17 20:21		
Surrogates								
n-Octacosane (S)	126	%.	75-125	1	09/28/17 10:46	09/28/17 20:21	630-02-4	S0
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 16:16	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 16:16	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 16:16		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 16:16	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 16:16	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 16:16	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 16:16	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%.	75-125	1		10/02/17 16:16	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		10/02/17 16:16	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 16:16	460-00-4	

Sample: MW-12 **Lab ID: 1297466013** Collected: 09/27/17 10:24 Received: 09/27/17 18:05 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	97.6	1	09/28/17 10:46	09/28/17 17:14	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-12 **Lab ID: 1297466013** Collected: 09/27/17 10:24 Received: 09/27/17 18:05 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)	120	%.	75-125	1	09/28/17 10:46	09/28/17 17:14	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	97.6	1	09/28/17 10:46	09/28/17 20:30		
Surrogates								
n-Octacosane (S)	121	%.	75-125	1	09/28/17 10:46	09/28/17 20:30	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 16:41	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 16:41	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 16:41		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 16:41	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 16:41	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 16:41	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 16:41	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		10/02/17 16:41	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		10/02/17 16:41	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		10/02/17 16:41	460-00-4	

Sample: MW-13 **Lab ID: 1297466014** Collected: 09/27/17 12:45 Received: 09/27/17 18:05 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	**284**	ug/L	97.3	1	09/28/17 10:46	09/28/17 17:22	64742-65-0	DH
Surrogates								
n-Octacosane (S)	110	%.	75-125	1	09/28/17 10:46	09/28/17 17:22	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**138**	ug/L	97.3	1	09/28/17 10:46	09/28/17 20:38		
Surrogates								
n-Octacosane (S)	118	%.	75-125	1	09/28/17 10:46	09/28/17 20:38	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 17:05	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 17:05	100-41-4	
Gasoline Range Organics	**140**	ug/L	50.0	1		10/02/17 17:05		
Methyl-tert-butyl ether	**0.96**	ug/L	0.50	1		10/02/17 17:05	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 17:05	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 17:05	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 17:05	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		10/02/17 17:05	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		10/02/17 17:05	2037-26-5	

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-13 **Lab ID: 1297466014** Collected: 09/27/17 12:45 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	100	%.	75-125	1		10/02/17 17:05	460-00-4	

Sample: MW-14 **Lab ID: 1297466015** Collected: 09/27/17 11:00 Received: 09/27/17 18:05 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	**698**	ug/L	98.3	1	09/28/17 10:46	09/28/17 17:30	64742-65-0	
Surrogates								
n-Octacosane (S)	110	%.	75-125	1	09/28/17 10:46	09/28/17 17:30	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.3	1	09/28/17 10:46	09/28/17 20:46		
Surrogates								
n-Octacosane (S)	119	%.	75-125	1	09/28/17 10:46	09/28/17 20:46	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 17:30	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 17:30	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 17:30		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 17:30	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 17:30	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 17:30	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 17:30	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		10/02/17 17:30	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		10/02/17 17:30	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		10/02/17 17:30	460-00-4	

Sample: MW-15 **Lab ID: 1297466016** Collected: 09/27/17 09:49 Received: 09/27/17 18:05 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	97.2	1	09/28/17 10:46	09/28/17 17:38	64742-65-0	
Surrogates								
n-Octacosane (S)	115	%.	75-125	1	09/28/17 10:46	09/28/17 17:38	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	97.2	1	09/28/17 10:46	09/28/17 20:54		
Surrogates								
n-Octacosane (S)	121	%.	75-125	1	09/28/17 10:46	09/28/17 20:54	630-02-4	

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: MW-15 **Lab ID: 1297466016** Collected: 09/27/17 09:49 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 17:55	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 17:55	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 17:55		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 17:55	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 17:55	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 17:55	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 17:55	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		10/02/17 17:55	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		10/02/17 17:55	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 17:55	460-00-4	

Sample: MW-18 **Lab ID: 1297466017** Collected: 09/27/17 10:55 Received: 09/27/17 18:05 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	**26100**	ug/L	494	5	09/28/17 10:46	10/02/17 13:25	64742-65-0	
Surrogates								
n-Octacosane (S)	88	%.	75-125	5	09/28/17 10:46	10/02/17 13:25	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**17800**	ug/L	396	4	09/28/17 10:46	10/02/17 14:20		DM
Surrogates								
n-Octacosane (S)	87	%.	75-125	4	09/28/17 10:46	10/02/17 14:20	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 18:19	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 18:19	100-41-4	
Gasoline Range Organics	**454**	ug/L	50.0	1		10/02/17 18:19		
Methyl-tert-butyl ether	**0.76**	ug/L	0.50	1		10/02/17 18:19	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 18:19	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 18:19	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 18:19	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		10/02/17 18:19	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		10/02/17 18:19	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 18:19	460-00-4	

Sample: NPORDMW-3 **Lab ID: 1297466018** Collected: 09/27/17 08:05 Received: 09/27/17 18:05 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	98.4	1	09/28/17 10:46	09/28/17 17:54	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: NPORDMW-3 **Lab ID: 1297466018** Collected: 09/27/17 08:05 Received: 09/27/17 18:05 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)	119	%.	75-125	1	09/28/17 10:46	09/28/17 17:54	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	98.4	1	09/28/17 10:46	09/28/17 21:10		
Surrogates								
n-Octacosane (S)	128	%.	75-125	1	09/28/17 10:46	09/28/17 21:10	630-02-4	S0
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 18:44	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 18:44	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 18:44		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 18:44	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 18:44	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 18:44	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 18:44	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		10/02/17 18:44	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		10/02/17 18:44	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 18:44	460-00-4	

Sample: NPORDMW-4 **Lab ID: 1297466019** Collected: 09/27/17 07:55 Received: 09/27/17 18:05 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	**283**	ug/L	99.0	1	09/28/17 10:46	09/28/17 18:02	64742-65-0	
Surrogates								
n-Octacosane (S)	113	%.	75-125	1	09/28/17 10:46	09/28/17 18:02	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**178**	ug/L	99.0	1	09/28/17 10:46	09/28/17 21:19		
Surrogates								
n-Octacosane (S)	117	%.	75-125	1	09/28/17 10:46	09/28/17 21:19	630-02-4	
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/02/17 19:09	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/02/17 19:09	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		10/02/17 19:09		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/02/17 19:09	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/02/17 19:09	91-20-3	
Toluene	ND	ug/L	0.50	1		10/02/17 19:09	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		10/02/17 19:09	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		10/02/17 19:09	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		10/02/17 19:09	2037-26-5	

Pace Analytical®
www.pacelabs.com

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

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

Sample: NPORDMW-4 **Lab ID: 1297466019** Collected: 09/27/17 07:55 Received: 09/27/17 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	99	%.	75-125	1		10/02/17 19:09	460-00-4	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

QC Batch: 126922 Analysis Method: EPA 8015B
QC Batch Method: EPA 3511 Analysis Description: 8015 GCS Water
Associated Lab Samples: 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007, 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

METHOD BLANK: 504325 Matrix: Water
Associated Lab Samples: 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007, 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH - Motor Oil	ug/L	ND	100	09/28/17 13:48	
n-Octacosane (S)	%.	147	75-125	09/28/17 13:48	S0

LABORATORY CONTROL SAMPLE: 504326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Octacosane (S)	%.			113	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 504347 504348

Parameter	Units	1297466002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
n-Octacosane (S)	%.						118	112	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

QC Batch: 126921 Analysis Method: EPA 8015B
QC Batch Method: EPA 3511 Analysis Description: 8015 GCS Water, SI Gel
Associated Lab Samples: 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007, 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

METHOD BLANK: 504320 Matrix: Water
Associated Lab Samples: 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007, 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	ug/L	ND	100	09/28/17 18:27	
n-Octacosane (S)	%.	153	75-125	09/28/17 18:27	S0

LABORATORY CONTROL SAMPLE: 504321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	ug/L	1000	992	99	63-125	
n-Octacosane (S)	%.			120	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 504322 504323

Parameter	Units	1297466002 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	977	972	945	1020	94	101	52-125	7	25	
n-Octacosane (S)	%.						114	106	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical®
www.pacelabs.com

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

QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

QC Batch: 126943 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Med Water
Associated Lab Samples: 1297466001, 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007

METHOD BLANK: 504436 Matrix: Water
Associated Lab Samples: 1297466001, 1297466002, 1297466003, 1297466004, 1297466005, 1297466006, 1297466007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	0.50	09/29/17 12:09	
Ethylbenzene	ug/L	ND	0.50	09/29/17 12:09	
Gasoline Range Organics	ug/L	ND	50.0	09/29/17 12:09	
Methyl-tert-butyl ether	ug/L	ND	0.50	09/29/17 12:09	
Naphthalene	ug/L	ND	0.50	09/29/17 12:09	
Toluene	ug/L	ND	0.50	09/29/17 12:09	
Xylene (Total)	ug/L	ND	1.5	09/29/17 12:09	
1,2-Dichloroethane-d4 (S)	%.	108	75-125	09/29/17 12:09	
4-Bromofluorobenzene (S)	%.	91	75-125	09/29/17 12:09	
Toluene-d8 (S)	%.	100	75-125	09/29/17 12:09	

LABORATORY CONTROL SAMPLE: 504437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	40	40.2	101	75-125	
Ethylbenzene	ug/L	40	39.6	99	75-125	
Methyl-tert-butyl ether	ug/L	40	42.3	106	75-125	
Naphthalene	ug/L	40	33.8	85	63-129	
Toluene	ug/L	40	42.6	107	75-125	
Xylene (Total)	ug/L	120	118	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			104	75-125	
4-Bromofluorobenzene (S)	%.			98	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 504438 504439

Parameter	Units	1297466004 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	41.1	40.5	103	101	75-125	2	30	
Ethylbenzene	ug/L	ND	40	40	40.4	39.8	101	100	75-125	1	30	
Methyl-tert-butyl ether	ug/L	ND	40	40	43.7	43.4	109	108	75-125	1	30	
Naphthalene	ug/L	ND	40	40	34.4	34.8	86	87	61-132	1	30	
Toluene	ug/L	ND	40	40	43.8	43.3	109	108	75-125	1	30	
Xylene (Total)	ug/L	ND	120	120	119	117	99	98	75-125	1	30	
1,2-Dichloroethane-d4 (S)	%.						106	104	75-125			
4-Bromofluorobenzene (S)	%.						97	96	75-125			
Toluene-d8 (S)	%.						101	102	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

QC Batch: 127259 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Med Water
Associated Lab Samples: 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

METHOD BLANK: 505862 Matrix: Water
Associated Lab Samples: 1297466008, 1297466009, 1297466010, 1297466011, 1297466012, 1297466013, 1297466014, 1297466015, 1297466016, 1297466017, 1297466018, 1297466019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	0.50	10/02/17 12:34	
Ethylbenzene	ug/L	ND	0.50	10/02/17 12:34	
Gasoline Range Organics	ug/L	ND	50.0	10/02/17 12:34	
Methyl-tert-butyl ether	ug/L	ND	0.50	10/02/17 12:34	
Naphthalene	ug/L	ND	0.50	10/02/17 12:34	
Toluene	ug/L	ND	0.50	10/02/17 12:34	
Xylene (Total)	ug/L	ND	1.5	10/02/17 12:34	
1,2-Dichloroethane-d4 (S)	%.	92	75-125	10/02/17 12:34	
4-Bromofluorobenzene (S)	%.	95	75-125	10/02/17 12:34	
Toluene-d8 (S)	%.	99	75-125	10/02/17 12:34	

LABORATORY CONTROL SAMPLE: 505863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	40	38.5	96	75-125	
Ethylbenzene	ug/L	40	40.6	101	75-125	
Methyl-tert-butyl ether	ug/L	40	39.0	98	75-125	
Naphthalene	ug/L	40	39.2	98	63-129	
Toluene	ug/L	40	40.6	101	75-125	
Xylene (Total)	ug/L	120	122	101	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			102	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 505864 505865

Parameter	Units	1297466008 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	38.3	38.2	96	95	75-125	0	30	
Ethylbenzene	ug/L	ND	40	40	39.7	39.3	99	98	75-125	1	30	
Methyl-tert-butyl ether	ug/L	ND	40	40	41.5	42.0	104	105	75-125	1	30	
Naphthalene	ug/L	ND	40	40	39.7	40.5	99	101	61-132	2	30	
Toluene	ug/L	ND	40	40	39.2	38.9	98	97	75-125	1	30	
Xylene (Total)	ug/L	ND	120	120	119	117	99	97	75-125	2	30	
1,2-Dichloroethane-d4 (S)	%.						102	100	75-125			
4-Bromofluorobenzene (S)	%.						103	100	75-125			
Toluene-d8 (S)	%.						100	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Rolls-Royce Engine Test Facili
Pace Project No.: 1297466

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.

TNTC - Too Numerous To Count

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

DH	Lower boiling hydrocarbons present, atypical for Motor Oil.
DM	Higher boiling hydrocarbons present, atypical for Diesel Fuel.
S0	Surrogate recovery outside laboratory control limits.

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 Facili
Pace Project No.: 1297466

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1297466002	MW-1	EPA 3511	126922	EPA 8015B	126964
1297466003	MW-2	EPA 3511	126922	EPA 8015B	126964
1297466004	MW-3	EPA 3511	126922	EPA 8015B	126964
1297466005	MW-4	EPA 3511	126922	EPA 8015B	126964
1297466006	MW-5	EPA 3511	126922	EPA 8015B	126964
1297466007	MW-6	EPA 3511	126922	EPA 8015B	126964
1297466008	MW-7	EPA 3511	126922	EPA 8015B	126964
1297466009	MW-8	EPA 3511	126922	EPA 8015B	126964
1297466010	MW-9	EPA 3511	126922	EPA 8015B	126964
1297466011	MW-10	EPA 3511	126922	EPA 8015B	126964
1297466012	MW-11	EPA 3511	126922	EPA 8015B	126964
1297466013	MW-12	EPA 3511	126922	EPA 8015B	126964
1297466014	MW-13	EPA 3511	126922	EPA 8015B	126964
1297466015	MW-14	EPA 3511	126922	EPA 8015B	126964
1297466016	MW-15	EPA 3511	126922	EPA 8015B	126964
1297466017	MW-18	EPA 3511	126922	EPA 8015B	126964
1297466018	NPORDMW-3	EPA 3511	126922	EPA 8015B	126964
1297466019	NPORDMW-4	EPA 3511	126922	EPA 8015B	126964
1297466002	MW-1	EPA 3511	126921	EPA 8015B	126962
1297466003	MW-2	EPA 3511	126921	EPA 8015B	126962
1297466004	MW-3	EPA 3511	126921	EPA 8015B	126962
1297466005	MW-4	EPA 3511	126921	EPA 8015B	126962
1297466006	MW-5	EPA 3511	126921	EPA 8015B	126962
1297466007	MW-6	EPA 3511	126921	EPA 8015B	126962
1297466008	MW-7	EPA 3511	126921	EPA 8015B	126962
1297466009	MW-8	EPA 3511	126921	EPA 8015B	126962
1297466010	MW-9	EPA 3511	126921	EPA 8015B	126962
1297466011	MW-10	EPA 3511	126921	EPA 8015B	126962
1297466012	MW-11	EPA 3511	126921	EPA 8015B	126962
1297466013	MW-12	EPA 3511	126921	EPA 8015B	126962
1297466014	MW-13	EPA 3511	126921	EPA 8015B	126962
1297466015	MW-14	EPA 3511	126921	EPA 8015B	126962
1297466016	MW-15	EPA 3511	126921	EPA 8015B	126962
1297466017	MW-18	EPA 3511	126921	EPA 8015B	126962
1297466018	NPORDMW-3	EPA 3511	126921	EPA 8015B	126962
1297466019	NPORDMW-4	EPA 3511	126921	EPA 8015B	126962
1297466001	QA	EPA 8260B	126943		
1297466002	MW-1	EPA 8260B	126943		
1297466003	MW-2	EPA 8260B	126943		
1297466004	MW-3	EPA 8260B	126943		
1297466005	MW-4	EPA 8260B	126943		
1297466006	MW-5	EPA 8260B	126943		
1297466007	MW-6	EPA 8260B	126943		
1297466008	MW-7	EPA 8260B	127259		
1297466009	MW-8	EPA 8260B	127259		
1297466010	MW-9	EPA 8260B	127259		
1297466011	MW-10	EPA 8260B	127259		

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 Facili
Pace Project No.: 1297466

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1297466012	MW-11	EPA 8260B	127259		
1297466013	MW-12	EPA 8260B	127259		
1297466014	MW-13	EPA 8260B	127259		
1297466015	MW-14	EPA 8260B	127259		
1297466016	MW-15	EPA 8260B	127259		
1297466017	MW-18	EPA 8260B	127259		
1297466018	NPORDMW-3	EPA 8260B	127259		
1297466019	NPORDMW-4	EPA 8260B	127259		

Global ID #: T06019775776 ☐ Yes ☐ No

1297466

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.
QA	2	W	170927 —				X					
MW-1	7		1205	X	X	X						001
2			1135									002
3			1134									003
4			0940									004
5			0855									005
6			1030									006
7			1120									007
8			0835									008
9			1205									009
10			0930									010
11			1015									011
12			1024									012
13			1245									013

EDF NEEDED

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	9.27.17			1805 092717	Y
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

Turn Around Time (Circle Choice)

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

Global ID #: T06019775776 ☐ Yes ☐ No

1297466

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 / Lab Sample No.
MW-14	6	W	170927 1100	X	X	X	X					015
15	"	"	0949	"	"	"	"					016
18	"	"	1055	"	"	"	"					017
NPORDMW3	"	"	0805	"	"	"	"					018
4	"	"	0755	"	"	"	"					019

EDF NEEDED

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	9-27-17	R. Pace		1805 092717	Y
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

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: Gettler - Ryan

Project #:

WO#: 1297466

1297466

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

Tracking Number:

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 **Type of Ice:** ☑ Wet ☐ Blue ☐ Dry Ice ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read(°C): 4.6 **Cooler Temp Corrected(°C):** 5.4

Temp should be above freezing to 6°C **Correction Factor:** +0.8

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

Date and Initials of Person Examining Contents: EJ 092817

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1. SR received!
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2. Sample 1 - 2 VOA H
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3. Sample 2-19 - 7 VOA H
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
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: WATER	☐ Yes	☑ No	☐ N/A	12. Sample -2 has one container w/no ID. (Date + Time match COC for Sample 2)
All containers needing acid/base preservation have been checked?	☐ Yes	☑ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample # Sample 2)
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	
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: Date: 9/28/2017

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: 1709D12

Report Created for: Pace Analytical Services

2795 Second Street, Ste. 300
Davis, CA 95616

Project Contact: Jaime LaFave
Project P.O.: 1297466
Project Name: Rolls-Royce Engine Test Facili

Project Received: 09/29/2017

Analytical Report reviewed & approved for release on 10/05/2017 by:

Angela Rydelius,
Laboratory Manager

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

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

Glossary of Terms & Qualifier Definitions

Client: Pace Analytical Services
Project: Rolls-Royce Engine Test Facili
WorkOrder: 1709D12

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
ERS	External reference sample. Second source calibration verification.
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)

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

Glossary of Terms & Qualifier Definitions

Client: Pace Analytical Services
Project: Rolls-Royce Engine Test Facili
WorkOrder: 1709D12

Analytical Qualifiers

e2	Diesel range compounds are significant; no recognizable pattern
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant
e8/e11	Pattern resembles kerosene/kerosene range/jet fuel range; and/or Pattern resembles stoddard solvent/mineral spirit
e8	Pattern resembles kerosene/kerosene range/jet fuel range
e11	Pattern resembles stoddard solvent/mineral spirit

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

Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1709D12
Date Received:	9/29/17 9:46	**Extraction Method:**	SW3510C
Date Prepared:	10/2/17	**Analytical Method:**	SW8015B
Project:	Rolls-Royce Engine Test Facili	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1709D12-001A	Water	09/27/2017 12:05	GC9a 10021736.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/02/2017 19:20
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/02/2017 19:20

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1709D12-002A	Water	09/27/2017 11:35	GC9a 10021744.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/02/2017 21:55
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/02/2017 21:55

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1709D12-003A	Water	09/27/2017 11:34	GC9a 10021746.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	**140**	50	1	10/02/2017 22:34
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/02/2017 22:34

Analyst(s): TK Analytical Comments: e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1709D12-004A	Water	09/27/2017 09:40	GC9a 10021750.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	**100**	50	1	10/02/2017 23:51
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/02/2017 23:51

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

(Cont.)

NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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

Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1709D12
Date Received:	9/29/17 9:46	**Extraction Method:**	SW3510C
Date Prepared:	10/2/17	**Analytical Method:**	SW8015B
Project:	Rolls-Royce Engine Test Facili	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1709D12-005A	Water	09/27/2017 08:55	GC9a 10021752.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	69	50	1	10/03/2017 00:30
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/03/2017 00:30

Analyst(s): TK Analytical Comments: e7,e2,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1709D12-006A	Water	09/27/2017 10:30	GC9a 10021754.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	63	50	1	10/03/2017 01:09
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/03/2017 01:09

Analyst(s): TK Analytical Comments: e7,e2,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1709D12-007A	Water	09/27/2017 11:20	GC9a 10021758.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	150	50	1	10/03/2017 02:27
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/03/2017 02:27

Analyst(s): TK Analytical Comments: e7,e2,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-8	1709D12-008A	Water	09/27/2017 08:35	GC9a 10031722.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/03/2017 22:44
Surrogates	**REC (%)**	**Limits**		
C9	114	61-139		10/03/2017 22:44

Analyst(s): TK Analytical Comments: e2

(Cont.)

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

Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1709D12
Date Received:	9/29/17 9:46	**Extraction Method:**	SW3510C
Date Prepared:	10/2/17	**Analytical Method:**	SW8015B
Project:	Rolls-Royce Engine Test Facili	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-9	1709D12-009A	Water	09/27/2017 12:05	GC9a 10021762.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	74	50	1	10/03/2017 03:44
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/03/2017 03:44

Analyst(s): TK — Analytical Comments: e7,e2,e8

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-10	1709D12-010A	Water	09/27/2017 09:30	GC9a 10021766.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	270	50	1	10/03/2017 05:02
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/03/2017 05:02

Analyst(s): TK — Analytical Comments: e2,e7,e8/e11

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-11	1709D12-011A	Water	09/27/2017 10:15	GC9a 10021768.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	270	50	1	10/03/2017 05:41
Surrogates	**REC (%)**	**Limits**		
C9	111	61-139		10/03/2017 05:41

Analyst(s): TK — Analytical Comments: e2,e8,e7,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-12	1709D12-012A	Water	09/27/2017 10:24	GC9a 10021770.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/03/2017 06:19
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/03/2017 06:19

Analyst(s): TK

(Cont.)

NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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

Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1709D12
Date Received:	9/29/17 9:46	**Extraction Method:**	SW3510C
Date Prepared:	10/2/17	**Analytical Method:**	SW8015B
Project:	Rolls-Royce Engine Test Facili	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-13	1709D12-013A	Water	09/27/2017 12:45	GC9a 10021786.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	730	50	1	10/03/2017 11:35

Surrogates	REC (%)	Limits	
C9	111	61-139	10/03/2017 11:35

Analyst(s): TK Analytical Comments: e2,e7,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-14	1709D12-014A	Water	09/27/2017 11:00	GC9a 10021788.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	91	50	1	10/03/2017 12:14

Surrogates	REC (%)	Limits	
C9	110	61-139	10/03/2017 12:14

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-15	1709D12-015A	Water	09/27/2017 09:49	GC9a 10021792.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/03/2017 13:35

Surrogates	REC (%)	Limits	
C9	113	61-139	10/03/2017 13:35

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-18	1709D12-016A	Water	09/27/2017 10:55	GC9a 10021794.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	7200	50	1	10/03/2017 14:14

Surrogates	REC (%)	Limits	
C9	116	61-139	10/03/2017 14:14

Analyst(s): TK Analytical Comments: e7,e8,e2,e11

(Cont.)

NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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

Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1709D12
Date Received:	9/29/17 9:46	**Extraction Method:**	SW3510C
Date Prepared:	10/2/17	**Analytical Method:**	SW8015B
Project:	Rolls-Royce Engine Test Facili	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
NPORDMW-3	1709D12-017A	Water	09/27/2017 08:05	GC9a 10031714.D	146360

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/03/2017 20:09
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/03/2017 20:09

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
NPORDMW-4	1709D12-018A	Water	09/27/2017 07:55	GC9a 10031718.D	146368

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	**140**	50	1	10/03/2017 21:27
Surrogates	**REC (%)**	**Limits**		
C9	110	61-139		10/03/2017 21:27

Analyst(s): TK Analytical Comments: e2

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:**	1709D12
Date Prepared:	10/2/17	**BatchID:**	146360
Date Analyzed:	10/2/17	**Extraction Method:**	SW3510C
Instrument:	GC6A	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	Rolls-Royce Engine Test Facili	**Sample ID:**	MB/LCS/LCSD-146360

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	656.3		625	105	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1140	1130	1000	114	113	86-142	1.40	30
Surrogate Recovery								
C9	643	635	625	103	102	68-127	1.27	30

(Cont.)

NELAP 4033ORELAP

QA/QC Officer

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:**	1709D12
Date Prepared:	10/2/17	**BatchID:**	146368
Date Analyzed:	10/2/17	**Extraction Method:**	SW3510C
Instrument:	GC6A	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	Rolls-Royce Engine Test Facili	**Sample ID:**	MB/LCS/LCSD-146368

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	665.6		625	106	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1170	1140	1000	117	114	86-142	2.73	30
Surrogate Recovery								
C9	669	653	625	107	104	68-127	2.40	30

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1709D12 **ClientCode: KIFF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

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

Email: jaime.lafave@pacelabs.com
cc/3rd Party:
PO: 1297466
ProjectNo: Rolls-Royce Engine Test Facili

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

Requested TAT: 4 days;
Date Received: 09/29/2017
Date Logged: 10/02/2017

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
1709D12-001	MW-1	Water	9/27/2017 12:05	☐	A											
1709D12-002	MW-2	Water	9/27/2017 11:35	☐	A											
1709D12-003	MW-3	Water	9/27/2017 11:34	☐	A											
1709D12-004	MW-4	Water	9/27/2017 09:40	☐	A											
1709D12-005	MW-5	Water	9/27/2017 08:55	☐	A											
1709D12-006	MW-6	Water	9/27/2017 10:30	☐	A											
1709D12-007	MW-7	Water	9/27/2017 11:20	☐	A											
1709D12-008	MW-8	Water	9/27/2017 08:35	☐	A											
1709D12-009	MW-9	Water	9/27/2017 12:05	☐	A											
1709D12-010	MW-10	Water	9/27/2017 09:30	☐	A											
1709D12-011	MW-11	Water	9/27/2017 10:15	☐	A											
1709D12-012	MW-12	Water	9/27/2017 10:24	☐	A											
1709D12-013	MW-13	Water	9/27/2017 12:45	☐	A											
1709D12-014	MW-14	Water	9/27/2017 11:00	☐	A											
1709D12-015	MW-15	Water	9/27/2017 09:49	☐	A											

Test Legend:

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

Prepared by: Jena Alfaro

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: 1709D12 **ClientCode: KIFF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

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

Email: jaime.lafave@pacelabs.com
cc/3rd Party:
PO: 1297466
ProjectNo: Rolls-Royce Engine Test Facili

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

Requested TAT: 4 days;
Date Received: 09/29/2017
Date Logged: 10/02/2017

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
1709D12-016	MW-18	Water	9/27/2017 10:55	☐	A											
1709D12-017	NPORDMW-3	Water	9/27/2017 08:05	☐	A											
1709D12-018	NPORDMW-4	Water	9/27/2017 07:55	☐	A											

Test Legend:

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

Prepared by: Jena Alfaro

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.
"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

WORK ORDER SUMMARY

Client Name: PACE ANALYTICAL SERVICES
Client Contact: Jaime LaFave
Contact's Email: jaime.lafave@pacelabs.com

Project: Rolls-Royce Engine Test Facili

Comments:

Work Order: 1709D12
QC Level: LEVEL 2
Date Logged: 10/2/2017

☐ 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
1709D12-001A	MW-1	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 12:05	4 days	Present	☐	
1709D12-002A	MW-2	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 11:35	4 days	Present	☐	
1709D12-003A	MW-3	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 11:34	4 days	Present	☐	
1709D12-004A	MW-4	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 9:40	4 days	Present	☐	
1709D12-005A	MW-5	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 8:55	4 days	Present	☐	
1709D12-006A	MW-6	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 10:30	4 days	Present	☐	
1709D12-007A	MW-7	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 11:20	4 days	Present	☐	
1709D12-008A	MW-8	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 8:35	4 days	Present	☐	
1709D12-009A	MW-9	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 12:05	4 days	Present	☐	
1709D12-010A	MW-10	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 9:30	4 days	Present	☐	
1709D12-011A	MW-11	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 10:15	4 days	Present	☐	
1709D12-012A	MW-12	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 10:24	4 days	Present	☐	

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.

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

WORK ORDER SUMMARY

Client Name: PACE ANALYTICAL SERVICES
Client Contact: Jaime LaFave
Contact's Email: jaime.lafave@pacelabs.com

Project: Rolls-Royce Engine Test Facili

Comments:

Work Order: 1709D12
QC Level: LEVEL 2
Date Logged: 10/2/2017

☐ 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
1709D12-013A	MW-13	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 12:45	4 days	Present	☐	
1709D12-014A	MW-14	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 11:00	4 days	Present	☐	
1709D12-015A	MW-15	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 9:49	4 days	Present	☐	
1709D12-016A	MW-18	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 10:55	4 days	Present	☐	
1709D12-017A	NPORDMW-3	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 8:05	4 days	Present	☐	
1709D12-018A	NPORDMW-4	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	9/27/2017 7:55	4 days	Present	☐	

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

1709D12

Pace Analytical®
www.pacelabs.com

Workorder: 1297466 **Workorder Name:** Rolls-Royce Engine Test Facili **Results Requested By:** 10/5/2017

Report / Invoice To	Subcontract To
Jaime LaFave Pace Analytical Davis 2795 Second Street Suite 300 Davis, CA 95618 Phone (530) 297-4800 Email: jaime.lafave@pacelabs.com	McCampbell P.O. 1297466

State of Sample Origin: CA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: 4C	Requested Analysis: TPH Jet A Fuel by 8015	LAB USE ONLY
1	MW-1	9/27/2017 12:05	1297466002	Water	2	X	
2	MW-2	9/27/2017 11:35	1297466003	Water	2	X	
3	MW-3	9/27/2017 11:34	1297466004	Water	2	X	
4	MW-4	9/27/2017 09:40	1297466005	Water	2	X	
5	MW-5	9/27/2017 08:55	1297466006	Water	2	X	
6	MW-6	9/27/2017 10:30	1297466007	Water	2	X	
7	MW-7	9/27/2017 11:20	1297466008	Water	2	X	
8	MW-8	9/27/2017 08:35	1297466009	Water	2	X	
9	MW-9	9/27/2017 12:05	1297466010	Water	2	X	
10	MW-10	9/27/2017 09:30	1297466011	Water	2	X	
11	MW-11	9/27/2017 10:15	1297466012	Water	2	X	
12	MW-12	9/27/2017 10:24	1297466013	Water	2	X	
13	MW-13	9/27/2017 12:45	1297466014	Water	2	X	
14	MW-14	9/27/2017 11:00	1297466015	Water	2	X	
15	MW-15	9/27/2017 09:49	1297466016	Water	2	X	
16	MW-18	9/27/2017 10:55	1297466017	Water	2	X	
17	NPORDMW-3	9/27/2017 08:05	1297466018	Water	2	X	
18	NPORDMW-4	9/27/2017 07:55	1297466019	Water	2	X	
19							
20							
21							

22					
					Comments
Transfers	Released By	Date/Time	Received By	Date/Time	
1	[illegible]	092817 16:[illegible]	FedEx		
2	FedEx		[illegible]	9/29/17 0946	
3					

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

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

Sample Receipt Checklist

Client Name:	**Pace Analytical Services**	Date and Time Received	**9/29/2017 09:46**
Project Name:	**Rolls-Royce Engine Test Facili**	Date Logged:	**10/2/2017**
		Received by:	Jena Alfaro
WorkOrder №:	**1709D12** Matrix: Water	Logged by:	Jena Alfaro
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 ☑	
COC agrees with Quote?	Yes ☐	No ☐	NA ☑

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: 11.2°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)		

UCMR 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:

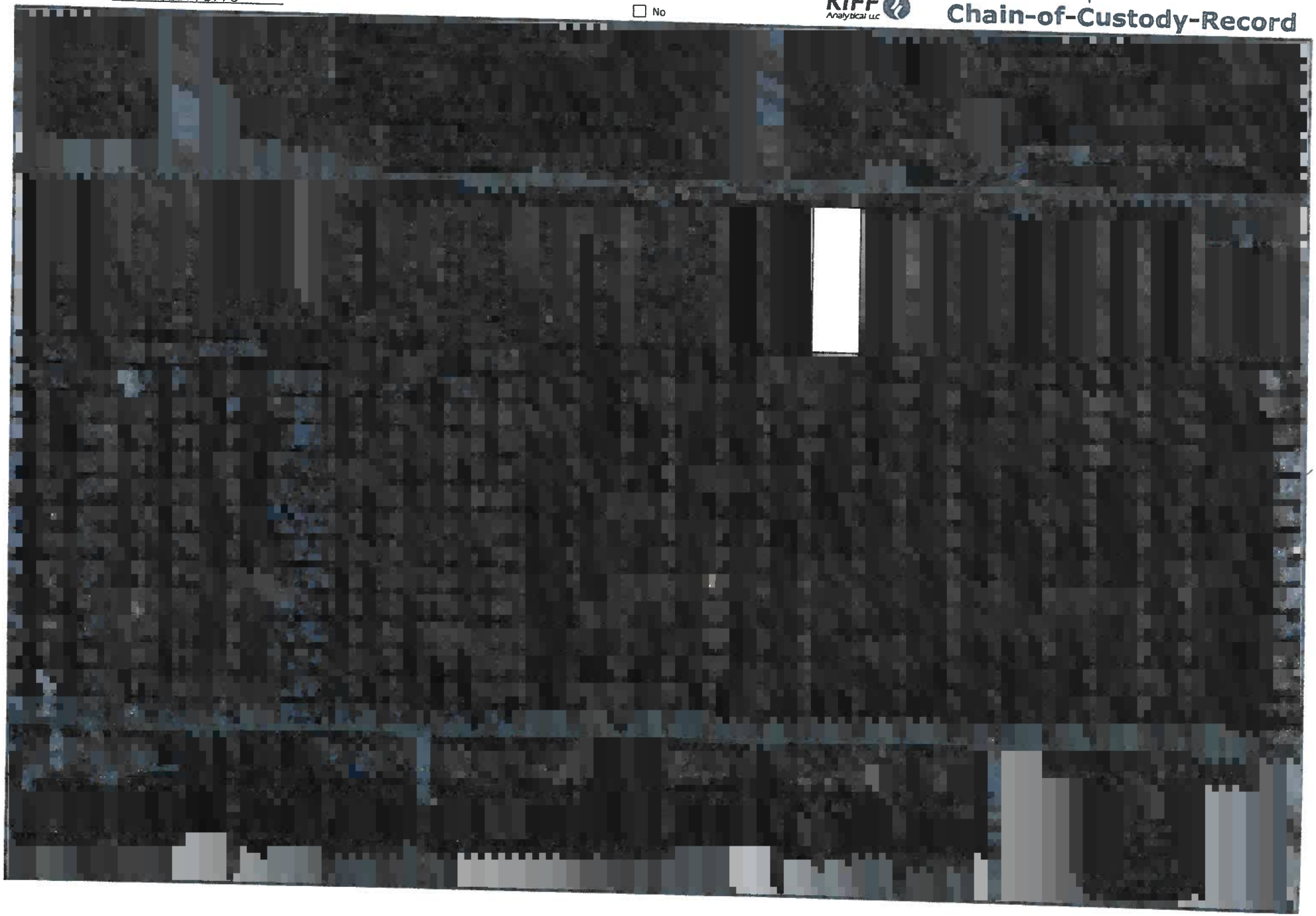
Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

1297466

Chain-of-Custody-Record



Global ID #: T06019775776 ☐ Yes ☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

1297466

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 / Lab Sample No.
MW-14	6	W	170927 1100	X	X	X	X					EDF NEEDED
15	↓	↓	0949	↓	↓	↓	↓					015
18			1055									016
NPORDMW3			0805									017
4			0755									018
												019

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	9-27-17	R. Pace		0927/17 0805	Y
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

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: Geotler - Ryan

Project #:

WO# : 1297466

1297466

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

Tracking Number: _____

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 **Type of Ice:** ☑ Wet ☐ Blue ☐ Dry Ice ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read(°C): 4.6 **Cooler Temp Corrected(°C):** 5.4

Temp should be above freezing to 6°C **Correction Factor:** +0.8

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

Date and Initials of Person Examining Contents: EJ 092817

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1. SR received!
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2. Sample 1 - 2 VOA H
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3. Sample 2-19 - 7 VOA H
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☑ No	☐ N/A	
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: WATER	☐ Yes	☑ No	☐ N/A	12. Sample -2 has one container w/no ID. (Date + time match COC for Sample 2)
All containers needing acid/base preservation have been checked?	☐ Yes	☑ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample # Sample 2)
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	
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: _____ **Date:** 9/28/2017

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)