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

Alameda County
Environmental Health

Subject: **1st Quarter 2009 Groundwater Monitoring and Sampling Report**
Rolls-Royce Engine Service Test Facility,
6701 Old Earhart Road, Oakland, California
Alameda County Site #RO0002606

On behalf of Rolls-Royce Engine Services-Oakland Inc. (RR), Gettler-Ryan Inc. (GR) has prepared this first quarter 2009 groundwater monitoring and sampling report for the above-referenced property. 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 March 26, 2009, GR personnel conducted quarterly 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, Quarterly Groundwater Sampling (attached).

On March 26, 2009, GR collected depth to groundwater measurements in nineteen wells (MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4) and checked groundwater for the presence of Separate-Phase Hydrocarbons (SPH). Approximately 0.55 ft of SPH were observed in well MW-18.

Approximately 0.079 gallon (300 milliliters) of SPH and 0.079 gallon (300 milliliters) of water were bailed from well MW-18 and were stored onsite in a 55-gallon DOT approved drum pending disposal. Water level data, groundwater elevations, and SPH thicknesses are presented in attached Table 1. Field data sheets for this event are attached.

Groundwater monitoring wells MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4 were purged and sampled on the same date they were monitored. Well MW-18 was not sampled due to presence of 0.55 feet of SPH. Groundwater samples were submitted under chain-of-custody protocol to Kiff Analytical (ELAP #2236) 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 RR.

Results

Groundwater Gradient

On March 26, 2009, the groundwater flow direction varied with hydraulic gradients ranging between 0.01 ft/ft to 0.02 ft/ft. A Potentiometric Map is presented as Figure 3.

Analytical Results

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. Groundwater chemical analytical results for this event are presented in Table 1.

Concentrations of TPHg, TPHd, TPHmo, TPHjf, BTEX, MtBE and naphthalene were reported below the laboratory method detection limits in groundwater samples collected from wells MW-1, MW-2, MW-12, and NPORD MW-3.

TPHg was detected in the water samples collected from wells MW-10 and MW-13 at concentrations of 53 parts per billion (ppb) and 310 ppb, respectively. Concentrations of TPHg were reported below the laboratory method detection limits in water samples collected from the remaining wells.

TPHd was detected in eleven wells at concentrations ranging from 79 ppb in well MW-14 to 6,900 ppb in well MW-9. Concentrations of TPHmo were detected in eleven wells at levels ranging from 120 ppb in well MW-13 to 9,700 ppb in well MW-9. TPHjf was detected in fourteen wells at concentrations ranging from 71 ppb in well MW-17 to 5,600 ppb in well MW-9.

BTEX constituents were reported as below the laboratory method detection limits in all of the wells, except for benzene detected in well MW-13 at a concentration of 0.81 ppb.

MtBE was detected in wells MW-3, MW-13, MW-14 at concentrations of 0.69 ppb, 1.7 ppb, and 0.89 ppb, respectively. Naphthalene was detected in wells MW-10 and MW-13 at concentrations of 1.8 ppb and 2.2 ppb, respectively. 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:

- Non-detectable concentrations of dissolved petroleum hydrocarbons were present in wells MW-1, MW-2, MW-12 and NPORD MW-3 located along the northeast edge of the site;
- Detectable dissolved concentrations of TPHg appear limited to the areas in the vicinity of well MW-13;
- Separate-phase hydrocarbons continue to be limited to the vicinity of MW-18;
- Detectable dissolved concentrations of TPHd, TPHmo and TPHjf were present in a majority of the site wells. The highest concentrations have been detected in the northwest portion of the site in the vicinity of Test Cells 5, 6, and 7; and
- GR recommends continuing quarterly groundwater monitoring and sampling of all wells to further evaluate groundwater flow direction, groundwater quality and plume stability over time.

If you have any questions, please feel free to contact our Rancho Cordova office at (916) 631-1300.

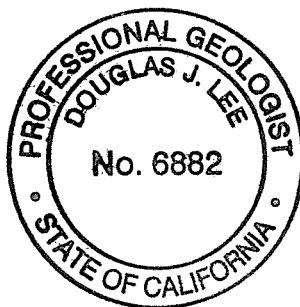
Sincerely,
Gettler-Ryan Inc.



Geoffrey D. Risse
Staff Geologist



Douglas J. Lee
Senior Geologist, P.G. No. 6882



Attachments: Table 1, Groundwater Monitoring Results
 Figure 1, Vicinity Map
 Figure 2, Site Plan
 Figure 3, Potentiometric Map
 Figure 4, Concentration Map
 GR Field Methods and Procedures
 Field Data Sheets
 Laboratory Analytical Report and Chain of Custody

CC: Dave Goldberg, Rolls-Royce Engine Services-Oakland Inc
 Dale Klettke, Port of Oakland

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Sample ID	Sample Date	SPH													
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)
MW-1	10/3/07	7.17	3.04	0.00	4.13	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/08	7.17	3.02	0.00	4.15	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/26/08	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
	9/25/08	7.17	3.03	0.00	4.14	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	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
	3/26/09	7.17	3.30	0.00	3.87	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-2	10/3/07	7.03	2.80	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/08	7.03	2.94	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/26/08	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
	9/25/08	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
	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
	3/26/09	7.03	3.15	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3	10/2/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	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

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Sample ID	Sample Date	SPH						B	T	E	X	MtBE	Naphthalene
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)				
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
	3/14/08	9.79	5.82	0.00	3.97	<50	3,300	2,400	3,400 ⁷	<0.50	<0.50	<0.50	<0.50
	6/26/08	9.79	6.08	0.00	3.71	<50	2,300	1,900	2,700 ⁷	<0.50	<0.50	<0.50	<0.50
	9/25/08	9.79	5.98	0.00	3.81	<50	1,600	1,400	2,100 ¹⁶	<0.50	<0.50	<0.50	<0.50
	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
	3/26/09	9.79	5.65	0.00	4.14	<50	720	550	1,000¹⁸	<0.50	<0.50	<0.50	<0.50
MW-5	10/2/07	8.35	4.75	0.00	3.60	<50	5,600	11,000	5,300	<0.50	<0.50	<0.50	<0.50
	3/14/08	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
	6/26/08	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
	9/25/08	8.35	4.52	0.00	3.83	<50	670 ⁶	1,200	940 ¹⁶	<0.50	<0.50	<0.50	<0.50
	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
	3/26/09	8.35	4.25	0.00	4.10	<50	2,400⁶	5,500	2,600¹⁸	<0.50	<0.50	<0.50	<0.50
MW-6	10/2/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	9.51	5.38	0.00	4.13	<50	2,400⁶	6,800	1,800¹⁸	<0.50	<0.50	<0.50	<0.50

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MW-7	10/2/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	9.23	5.11	0.00	4.12	<50	710⁶	2,300	790¹⁸	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-8	9/14/07	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
	3/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland													
	7/3/04	8.25	4.49	0.00	3.76	<50	1,200 ⁶	4,400	1,800 ⁷	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/25/08	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
	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
	3/26/09	8.25	4.05	0.00	4.20	<50	470³	1,500	570²	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-9	10/3/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	9.44	5.26	0.00	4.18	<50	6,900⁶	9,700	5,600¹⁸	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)
MW-10	10/3/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	7.51	3.36	0.00	4.15	53	1,500⁸	1,300	2,900	<0.50	<0.50	<0.50	<0.50	<0.50	1.8
MW-11	10/3/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	7.60	3.49	0.00	4.11	<50	2,300⁶	4,200	2,800¹⁸	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-12	10/3/07	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
	3/14/08	7.32	3.35	0.00	3.97	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	6/26/08	7.32	3.60	0.00	3.72	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/25/08	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
	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

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Sample ID	Sample Date	SPH													
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)
MW-12 (con't)	3/26/09	7.32	3.13	0.00	4.19	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-13	10/3/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	6.10	2.44	0.00	3.66	310	86	120¹³	1,800¹⁸	0.81	<0.50	<0.50	<0.50	1.7	2.2
MW-14	10/2/07	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
	3/14/08	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
	6/26/08	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
	9/25/08	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
	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
	3/26/09	6.42	2.23	0.00	4.19	<50	79⁶	540	1,000¹⁸	<0.50	<0.50	<0.50	<0.50	0.89	<0.50
MW-15	10/2/07	7.51	4.85	0.00	2.66	<50	99	<100	120	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/14/08	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

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Sample ID	Sample Date	SPH														
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)	
MW-15 (con't)	6/26/08	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	
	9/25/08	7.51	4.81	0.00	2.70	<50	<50	<100	53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	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	
	3/26/09	7.51	4.45	0.00	3.06	<50	<50	<100	110¹⁸	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-17	9/14/07	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	
	3/14/08				Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland											
	7/3/08	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	<0.50
	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	<0.50
	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	<0.50
	3/26/09	0.04	1.85	0.00	-1.81	<50	<50	<100	71¹⁸	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-18	10/2/07	7.05	4.15	0.55	3.34**				Not developed or sampled due to presence of SPH							
	3/14/08	7.05	3.62	0.63	3.93**				Not sampled due to presence of SPH							
	6/26/08	7.05	4.11	1.14	3.85**				Not sampled due to presence of SPH							
	9/25/08	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							
	3/26/09	7.05	3.28	0.55	4.21**				Not sampled due to presence of SPH							

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Sample ID	Sample Date	SPH														
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)	
NPORD MW-3	9/14/07	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	
	3/14/08				Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland											
	7/3/08	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	
	9/25/08	8.11	4.06	0.00	4.05	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	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	
	3/26/09	8.11	4.22	0.00	3.89	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
NPORD MW-4	9/14/07	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	
	3/14/08				Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland											
	7/3/08	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	
	9/25/08	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	
	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	
	3/26/09	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	
QA	9/14/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	10/2/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	3/14/08	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	6/26/08 ¹⁴	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	7/3/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Sample ID	Sample Date	SPH													
		TOC (feet)	DTW (feet)	Thickness (feet)	GWE (feet)	TPHg (ppb)	TPHd ¹ (ppb)	TPHmo (ppb)	TPHjf (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MtBE (ppb)	Naphthalene (ppb)
QA															
(con't)	9/25/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/19/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	3/26/09	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Explanation:

TOC = Top of Casing Elevation

DTW = Depth to Water

GWE = Groundwater Elevation

ft = feet

SPH = Separate Phase Hydrocarbons

ppb = parts per billion ($\mu\text{g/L}$)

NA = Not Analyzed

-- = Not Applicable

QA = Trip Blank

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

TPHjf = Total Petroleum Hydrocarbons as jet fuel

Analytical Laboratory:

Kiff Analytical LLC (ELAP # 2236)

Analytical Methods:

TPHg/BTEX/MtBE/Naphthalene by EPA Method 8260B

TPHd/TPHmo/TPHjf by modified EPA Method 8015

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Explanation: (con't)

B = Benzene

T = Toluene

E = Ethylbenzene

X = total xylenes

MtBE = Methyl tert-Butyl Ether

** = 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.

Notes:

TOC elevations surveyed relative to mean sea level by Morrow Surveying (PLS #5161) on October 8, 2007

¹ With Silica Gel Cleanup

² Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Jet Fuel

³ Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Diesel Fuel

⁴ Matrix spike/matrix spike duplicate results associated with these samples for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

⁵ Due to the formation of an emulsion in this sample, the sample was centrifuged 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.

Table 1
Groundwater Monitoring Results
Rolls-Royce Engine Service Test Facility
6701 Old Earhart Road
Oakland, California

Notes: (con't)

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

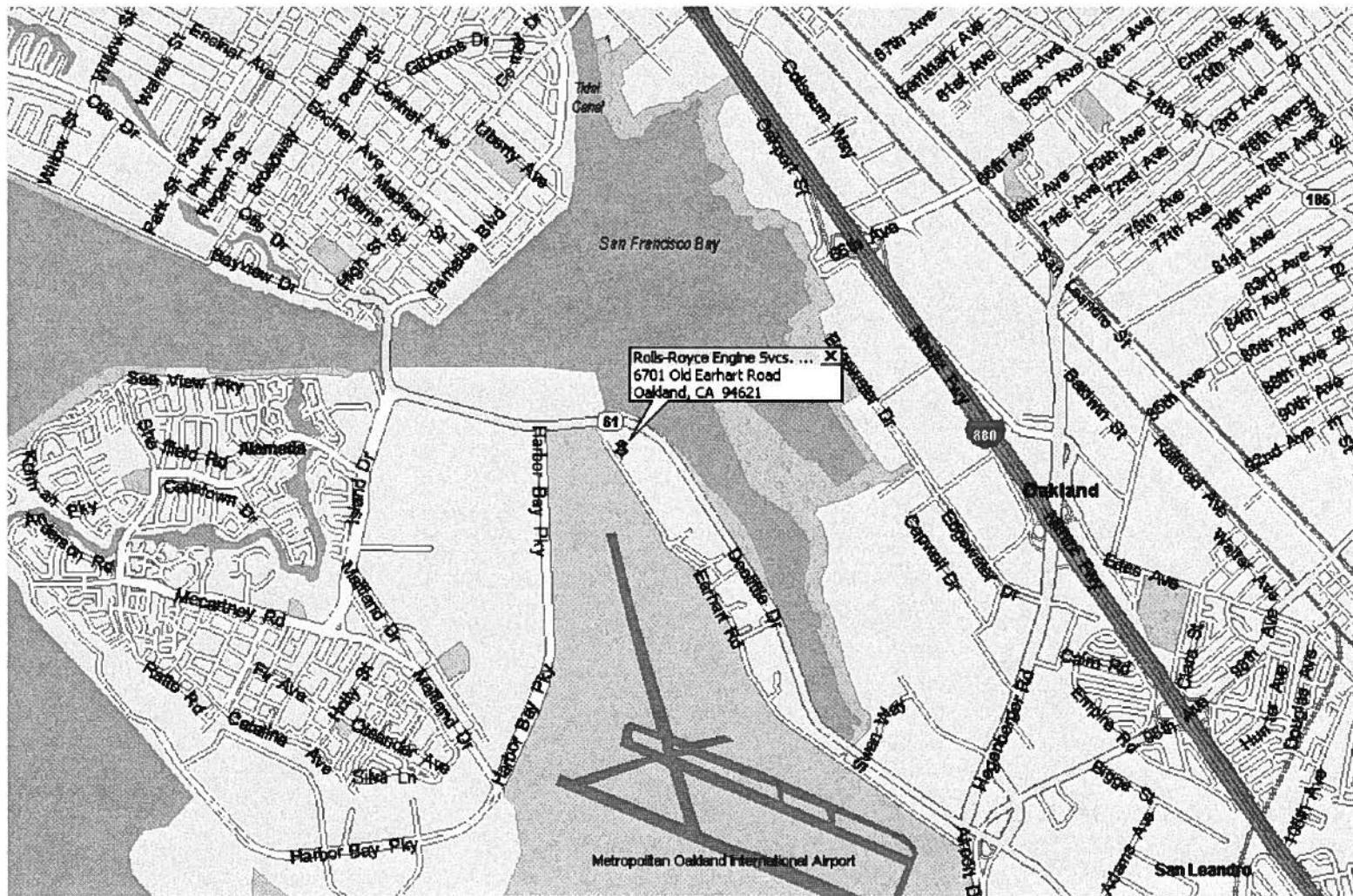
¹⁵ Lower boiling hydrocarbons are present in this sample that are atypical for Jet Fuel.

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



PROJECT NUMBER
25-948218.7

REVIEWED BY

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

DATE
11/13/07

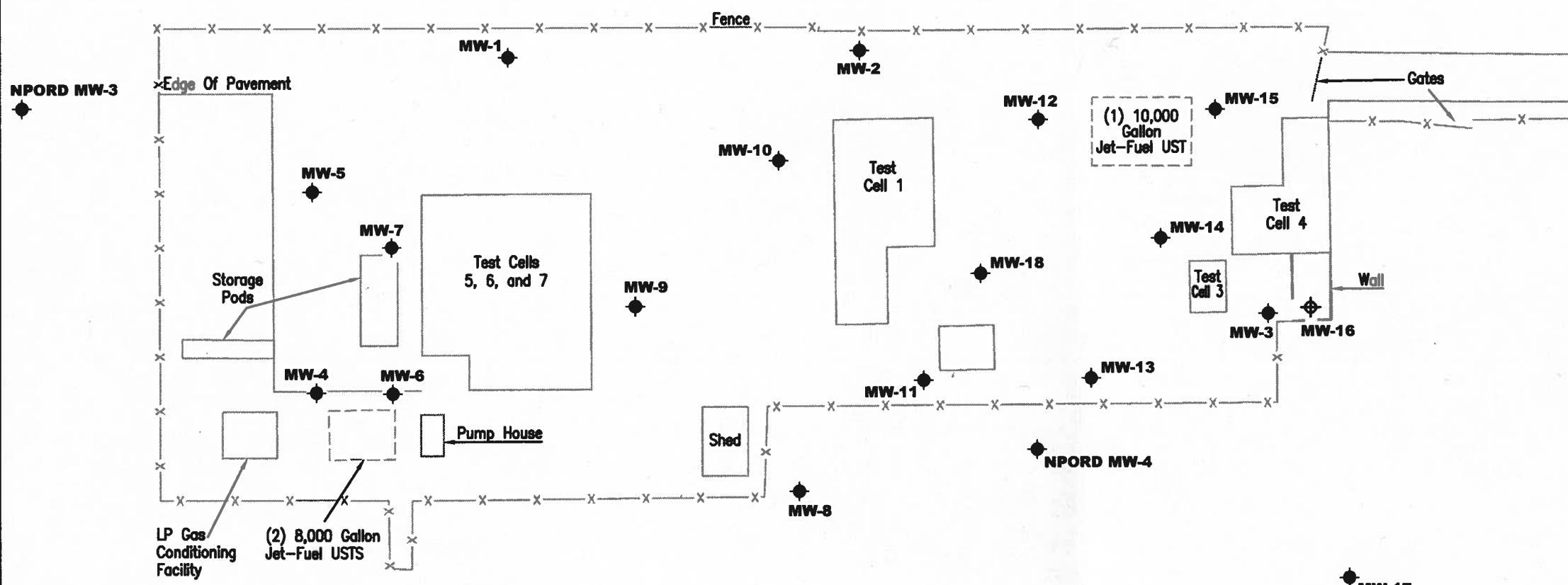
REVISED DATE

FIGURE

1

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.

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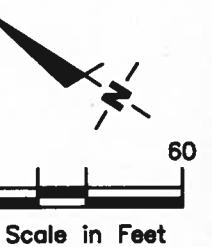
6747 Sierra Court, Suite J
Dublin, CA 94568 (925) 551-7555

PROJECT NUMBER 948218.2
FILE NAME: P:\Enviro\Rolls Royce\007-Rolls Royce.dwg | Layout Tab: Site Plan

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

DATE 11/07

REVISED DATE



POTENSIOMETRIC MAP
Rolls-Royce Engine Services Test Facility
6701 Old Earthart Road
Oakland, CA

DATE March 26, 2009

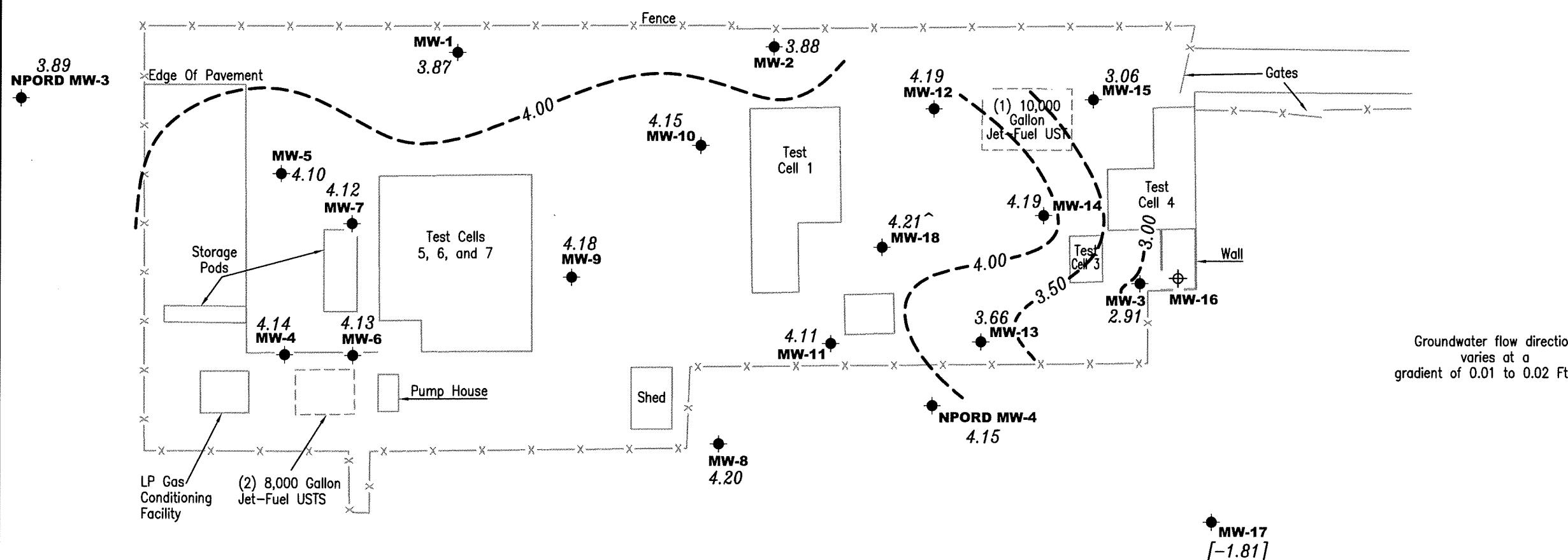
REVIEWED BY

PROJECT NUMBER 948218

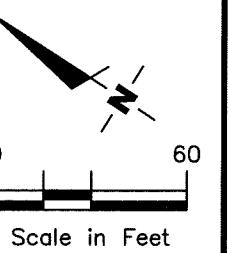
FILE NAME: P:\Enviro\Rolls Royce\Q09_Rolls Royce.dwg | Layout Tab: Pol1

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
- Groundwater elevation corrected for the presence of separate-phase hydrocarbons
- [99.99] Not used in contouring



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



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6747 Sierra Court, Suite J
Dublin, CA 94568 (925) 551-7555

DISSOLVED HYDROCARBON CONCENTRATION MAP
 Rolls-Royce Engine Services Test Facility
 6701 Old Earthart Road
 Oakland, CA

REVISED DATE

March 26, 2009

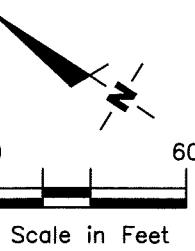
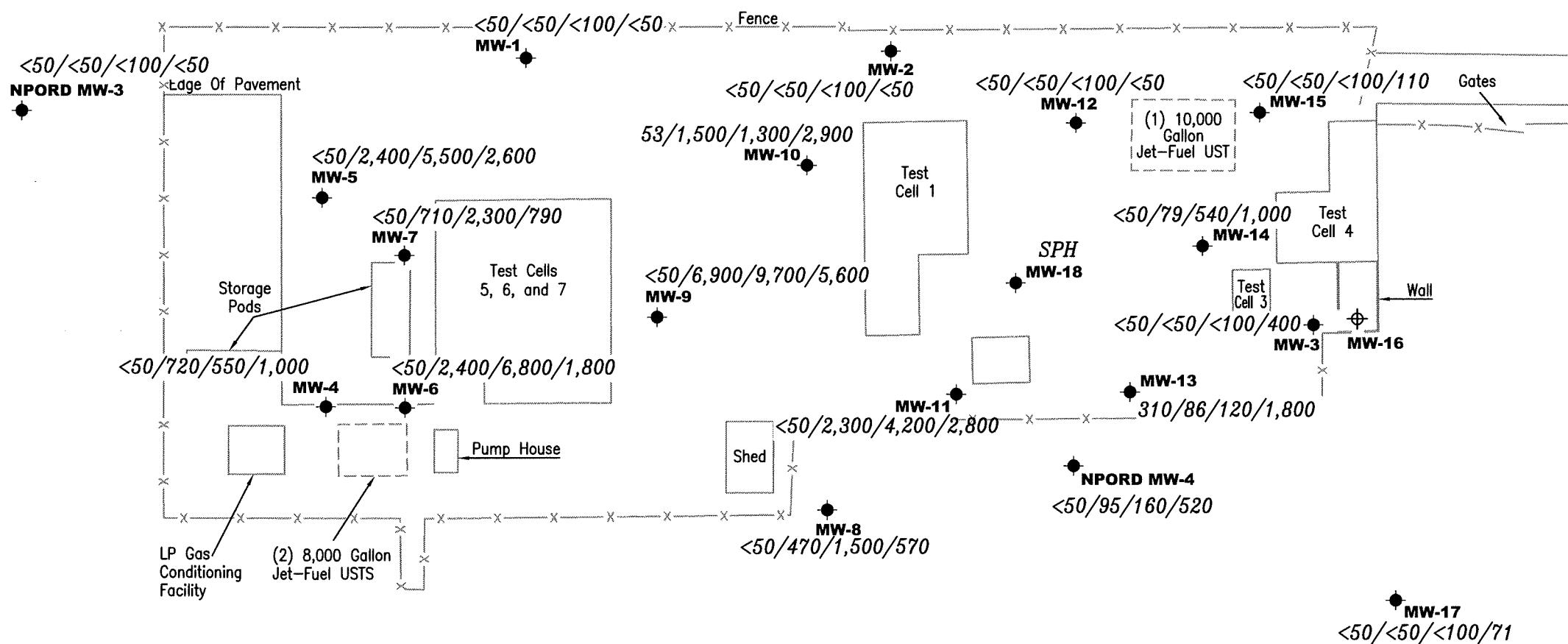
REVIEWED BY

PROJECT NUMBER

FILE NAME: P:\Enviro\Rolls Royce\009_Rolls Royce.dwg | Layout Tab: Con1

**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
- SPH Separate Phase Hydrocarbons



STANDARD OPERATING PROCEDURE - QUARTERLY GROUNDWATER SAMPLING

Gettler-Ryan field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analyses by the analytical laboratory. Prior to sample collection, the type of analyses to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analyses is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is recorded in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH, and electrical conductivity are measured a minimum of three times during purging. 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 possible. 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. The samples are labeled to include job number, sample identification, collection date and time, analyses, preservative (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 delivery to the laboratory.

The chain of custody includes the job number, type of preservation, if any, analyses 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. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

WELL CONDITION STATUS SHEET

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

Job # 25-948218.1
Event Date: 3/26/09
Sampler: JH

Comments _____

WELL CONDITION STATUS SHEET

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

Job # **25-948218.1**
Event Date: **3-26-09**
Sampler: **AW**

Comments

WELL CONDITION STATUS SHEET

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

Job # **25-948218.1**
Event Date: *3-26-09*
Sampler: *519*

Comments _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
 Event Date: 3-26-09 (inclusive)
 Sampler: SH

Well ID: MW-1
 Well Diameter: (2) 4 in.
 Total Depth: 7.46 ft.
 Depth to Water: 3.30 ft.
4.16 xVF r17 = 0.71

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

Check if water column is less than 0.50 ft.
 $xVf \times r = \text{Estimated Purge Volume: } 4 \text{ gal.}$

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.13

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

Sampling Equipment:
 Disposable Bailer X
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): 1003
 Sample Time/Date: 1035 / 3-26-09
 Approx. Flow Rate: 10 gpm.
 Did well de-water? no If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 3-72

Weather Conditions: Clear
 Water Color: Tan Odor: Y / N
 Sediment Description: light

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μmhos/cm - us)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
1007	1.5	7.53	out of range	18.3		
1010	3	7.47	11	18.1		
1019	4	7.39	11	18.0		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
 Event Date: 3-26-09 (inclusive)
 Sampler: 3H

Well ID: MW-2
 Well Diameter: 2 1/4 in.
 Total Depth: 11.78 ft.
 Depth to Water: 3.15 ft.
8.63 xVF .117 = 1.617

Date Monitored: 3-26-09

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 than 0.50 ft.
 $1.617 \times 3 \text{ case volume} = \text{Estimated Purge Volume: } 4.88 \text{ gal.}$

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.88

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

Sampling Equipment:
 Disposable Bailer X
 Pressure Bailer _____
 Discrete Bailer _____
 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:	gal
Amt Removed from Well:	gal
Water Removed:	_____
Product Transferred to:	

Start Time (purge): 1051 Weather Conditions: Clear
 Sample Time/Date: 1120 / 3-26-09 Water Color: Clear Odor: Y/N Bay/Mud odor (Slight)
 Approx. Flow Rate: 10 gpm. Sediment Description: light
 Did well de-water? No If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 4-13

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - <u>18.1</u>)	Temperature (<u>60</u> / F)	D.O. (mg/L)	ORP (mV)
<u>1055</u>	<u>1.5</u>	<u>7.39</u>	<u>out of range</u>	<u>18.1</u>		
<u>1059</u>	<u>3.0</u>	<u>7.26</u>	<u>"</u>	<u>18.7</u>		
<u>1104</u>	<u>4.5</u>	<u>7.25</u>	<u>"</u>	<u>18.2</u>		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>1 x voa vial</u>	<u>YES</u>	<u>HCL</u>	<u>KIFF</u>	<u>TPH-JET FUEL/TPH-MO/TPH-DROW/sgc(8015)/TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)</u>

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID **MW-3**Date Monitored: **3-26-09**Well Diameter **2 1/4** in.

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

Total Depth **12.06** ft.Depth to Water **3.82** ft. Check if water column is less than 0.50 ft.**8.24** xVF **.17** = **1.40** x3 case volume = Estimated Purge Volume: **4.5** gal.Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **5.47****Purge Equipment:**

Disposable Bailer **✓**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **✓**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1200**Weather Conditions: **Sunny**Sample Time/Date: **1235 / 3-26-09**Water Color: **Cloudy** Odor: **Y/N**Approx. Flow Rate: **—** gpm.Sediment Description: **Cloudy**Did well de-water? **✓** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **5.11**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μ mhos/cm, μ s)	Temperature ($^{\circ}$ C / $^{\circ}$ F)	D.O. (mg/L)	ORP (mV)
1207	1.5	6.99	out of range	17.4		
1215	3.0	6.99		17.2		
1222	4.5	7.02	✓	17.2		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **JH**

Well ID: **MW-4**
 Well Diameter: **2 1/4** in.
 Total Depth: **9.89** ft.
 Depth to Water: **5.65** ft.

Date Monitored:

3/26/09

Volume Factor (VF)	3/4"= 0.02 4"= 0.66	1"= 0.04 5"= 1.02	2"= 0.17 6"= 1.50	3"= 0.38 12"= 5.80
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Check if water column is less than 0.50 ft.

4.24 x VF **.17** = **.72** x3 case volume = Estimated Purge Volume: **2.16** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **6.49**

Purge Equipment:

Disposable Bailer **X**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **X**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **0945**Weather Conditions: **clear**Sample Time/Date: **1005 / 3/26/09**Water Color: **clay**Approx. Flow Rate: **—** gpm.Odor: **Y / N**Did well de-water? **no** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **6.40**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos}/\text{cm} \cdot \text{dS}$)	Temperature ($^{\circ}\text{C} / ^{\circ}\text{F}$)	D.O. (mg/L)	ORP (mV)
0947	.75	7.55	1734	17.7		
0950	1.5	7.31	1709	17.4		
0953	2.25	7.25	1654	17.2		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
 Event Date: 3-26-09 (inclusive)
 Sampler: 54

Well ID: MW-3
 Well Diameter: 214 in.
 Total Depth: 9.87 ft.
 Depth to Water: 4.25 ft.

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

Check if water column is less than 0.50 ft.
5.62 xVF +17 = 1 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.37

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

Sampling Equipment:
 Disposable Bailer X
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): 0911
 Sample Time/Date: 0940 / 3-26-09
 Approx. Flow Rate: 1 gpm.
 Did well de-water? no If yes, Time: _____

Weather Conditions: Cloudy
 Water Color: Grey Odor: Y/N
 Sediment Description: heavy

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - US)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
<u>0915</u>	<u>1</u>	<u>7.76</u>	<u>2969</u>	<u>19.6</u>		
<u>0919</u>	<u>2</u>	<u>7.73</u>	<u>2972</u>	<u>19.3</u>		
<u>0923</u>	<u>3</u>	<u>7.59</u>	<u>2923</u>	<u>19.1</u>		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **JH**

Well ID: **MW-6**

Date Monitored: **3/26/09**

Well Diameter: **2 1/4** in.

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

Total Depth: **10.60** ft.

Depth to Water: **5.38** ft.

Check if water column is less than 0.50 ft.

4.62 x VF **.17** = **.78** x3 case volume = Estimated Purge Volume: **2.35** gal.

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

Purge Equipment:

Disposable Bailer **X**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **X**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **0910**

Weather Conditions:

Clear

Sample Time/Date: **0935 13/26/09**

Water Color: **cloudy**

Odor: **Y/N**

Approx. Flow Rate: **—** gpm.

Sediment Description: **1,000**

Did well de-water? **No** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **6.30**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μ hos/cm μ s)	Temperature ($^{\circ}$ C / $^{\circ}$ F)	D.O. (mg/L)	ORP (mV)
0912	.75	7.32	2040	18.7		
0915	1.5	7.20	2017	18.2		
0918	2.25	7.15	2011	18.0		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **34**

Well ID: **MW-7**

Date Monitored: **3/26/09**

Well Diameter: **(2) 1/4** in.

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

Total Depth: **10.00** ft.

Depth to Water: **5.11** ft.

Check if water column is less than 0.50 ft.

4.89 x VF **.17** = **.83** x3 case volume = Estimated Purge Volume: **2.49** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **6.08**

Purge Equipment:

Disposable Bailer
 Stainless Steel Bailer
 Stack Pump
 Suction Pump
 Grundfos
 Peristaltic Pump
 QED Bladder Pump
 Other: _____

Sampling Equipment:

Disposable Bailer
 Pressure Bailer
 Discrete Bailer
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1315**

Weather Conditions: **Clean**

Sample Time/Date: **1340 / 3/26/09**

Water Color: **clear**

Approx. Flow Rate: **—** gpm.

Sediment Description: **1,441**

Did well de-water? **No** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **5.72**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos}/\text{cm}$ - 4S)	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	D.O. (mg/L)	ORP (mV)
1318	.75	7.49	887	16.1		
1321	1.5	7.38	892	16.4		
1323	2.5	7.35	905	16.7		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **JH**

Well ID: **MW-8**
 Well Diameter: **214** in.
 Total Depth: **9.98** ft.
 Depth to Water: **4.05** ft.
5.93 xVF **.17** = **1.00**

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

Check if water column is less than 0.50 ft.
3.02 gal.

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

Purge Equipment:
 Disposable Bailer **X**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer **X**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): **1030**
 Sample Time/Date: **1055 13/26/09**
 Approx. Flow Rate: _____ gpm.
 Did well de-water? **W** If yes, Time: _____

Weather Conditions: **clear**
 Water Color: **clear** Odor: **Y/N** **1.12**
 Sediment Description: **1.12**
 Volume: _____ gal. DTW @ Sampling: **5.20**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - μ S)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1032	1	7.39	out of range	17.7		
1034	2	7.22		18.4		
1036	3	7.04	↓	18.6		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **SH**

Well ID: **MW-9**
 Well Diameter: **2 1/4** in.
 Total Depth: **9.48** ft.
 Depth to Water: **5.26** ft.

Date Monitored: **3-26-09**

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 than 0.50 ft.

4.72 x VF **.17** = **0.80** x3 case volume = Estimated Purge Volume: **2.5** gal.

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

Purge Equipment:
 Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): **1323**
 Sample Time/Date: **1355 / 3-26-09**
 Approx. Flow Rate: **—** gpm.
 Did well de-water? **NO** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **5-23**

Weather Conditions: **Clear**
 Water Color: **Grey** Odor: **Y/N**
 Sediment Description: **Heavy**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos}/\text{cm} - \mu\text{s}$)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1327	1	7.62	out of range	17.3		
1330	2	7.39	out of range	16.9		
1334	2.5	7.46	out of range	17.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	6 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DROW/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
 Event Date: 3-26-09 (inclusive)
 Sampler: JH

Well ID: MW-10
 Well Diameter: 2 1/4 in.
 Total Depth: 10.11 ft.
 Depth to Water: 3.36 ft.

Volume Factor (VF)	3/4"= 0.02 4"= 0.66	1"= 0.04 5"= 1.02	2"= 0.17 6"= 1.50	3"= 0.38 12"= 5.80
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Check if water column is less than 0.50 ft.
 $xVF \cdot \sqrt{2} = 1.15$ x3 case volume = Estimated Purge Volume: 4 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.71

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

Sampling Equipment:
 Disposable Bailer _____ X
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): 1136
 Sample Time/Date: 1215 1 3-26-09
 Approx. Flow Rate: _____ gpm.
 Did well de-water? NO If yes, Time: _____ Volume: 1 gal. DTW @ Sampling: 3.76

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos}/\text{cm} - \mu\text{s}$)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
<u>1140</u>	<u>1.0</u>	<u>8.01</u>	<u>out of range</u>	<u>67.6</u>		
<u>1145</u>	<u>3</u>	<u>8.01</u>		<u>67.7</u>		
<u>1151</u>	<u>4</u>	<u>7.93</u>		<u>67.7</u>		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **JH**

Well ID: **MW-11**
 Well Diameter: **8 1/4** in.
 Total Depth: **10.00** ft.
 Depth to Water: **3.49** ft.
6.51 xVF **.17** = **1.11** x3 case volume = Estimated Purge Volume: **3.3** gal.

Volume Factor (VF)	3/4"= 0.02 4"= 0.66	1"= 0.04 5"= 1.02	2"= 0.17 6"= 1.50	3"= 0.38 12"= 5.80
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Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **4.80**

Purge Equipment:
 Disposable Bailer **X**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer **X**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): **1239**
 Sample Time/Date: **1315 / 3-26-09**
 Approx. Flow Rate: **—** gpm.
 Did well de-water? **NO** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **4.21**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm -µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1246	1.5	7.83	out of range	17.6		
1249	2.5	7.65	n	17.3		
1252	3.5	7.49	n	17.7		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID **MW-12**

Date Monitored: **3-26-09**

Well Diameter **14 in.**

Volume Factor (VF)	3/4"= 0.02 4"= 0.66	1"= 0.04 5"= 1.02	2"= 0.17 6"= 1.50	3"= 0.38 12"= 5.80
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Total Depth **9.86 ft.**

Depth to Water **3.13 ft.**

Check if water column is less than 0.50 ft.

6.73 xVF **.17** = **.14** x3 case volume = Estimated Purge Volume: **3.5** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **4.48**

Purge Equipment:

Disposable Bailer **✓**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **✓**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1035**

Weather Conditions:

Sunny

Sample Time/Date: **1000 / 3-26-09**

Water Color: **Cloudy**

Odor: **Y/N**

Approx. Flow Rate: **— gpm.**

Sediment Description:

Cloudy

Did well de-water? **N** If yes, Time: **—** Volume: **—** gal. DTW @ Sampling: **4.41**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm -)	Temperature (°F)	D.O. (mg/L)	ORP (mV)
1038	1.0	7.31	Out of range	67		
1042	2.0	7.37		68		
1046	3.5	7.40		69		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID **MW-13**
 Well Diameter **2 1/4** in.
 Total Depth **9.50** ft.
 Depth to Water **2.44** ft.

Date Monitored: **3-26-09**

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

Check if water column is less than 0.50 ft.

$$7.06 \text{ xVF } .66 = 4.66 \quad x3 \text{ case volume} = \text{Estimated Purge Volume: } 14.0 \text{ gal.}$$

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **3.85****Purge Equipment:**

Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1250**

Weather Conditions:

Sample Time/Date: **1330 / 3-26-09**Water Color: **yellow** Odor: **Y/N** **Sunny**Approx. Flow Rate: **1-2** gpm.Sediment Description: **clear**Did well de-water? **Y** If yes, Time: **1304** Volume: **~11.0** gal. DTW @ Sampling: **3.37**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
1255	5.0	6.95	out of range	17.1		
1303	10.0	7.13	out of range	16.7		
	14.0					

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID: **Mw-14**
 Well Diameter: **2 1/4** in.
 Total Depth: **10.04** ft.
 Depth to Water: **2.23** ft.
7.81

Date Monitored: **3-26-09**

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 than 0.50 ft.
 $7.81 \times VF \cdot 17 = 1.32$ x3 case volume = Estimated Purge Volume: **4.0** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **3.79**

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

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer
 Discrete Bailer
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): **1110**

Weather Conditions: **Sunny**

Sample Time/Date: **1135 / 3-26-09**

Water Color: **Cloudy** Odor: **Very Strong**

Approx. Flow Rate: **—** gpm.

Sediment Description: **Cloudy**

Did well de-water? **✓** If yes, Time: **—** Volume: **—** gal. DTW @ Sampling: **3.77**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos/cm}^{-1}$)	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	D.O. (mg/L)	ORP (mV)
1115	1.5	7.72	out of range	16.5		
1120	3.0	7.80		15.6		
1125	4.0	7.82	↓	15.6		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID: **MW-15**
 Well Diameter: **2 1/4** in.
 Total Depth: **9.95** ft.
 Depth to Water: **4.45** ft.

Date Monitored: **3-26-09**

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 than 0.50 ft.

5.50 xVF **.17** = **0.93** x3 case volume = Estimated Purge Volume: **3.0** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **5.55**

Purge Equipment:
 Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal
 Amt Removed from Well: _____ gal
 Water Removed: _____
 Product Transferred to: _____

Start Time (purge): **1000**
 Sample Time/Date: **1025 / 3-26-09**
 Approx. Flow Rate: **—** gpm.
 Did well de-water? **N** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **5.50**

Weather Conditions: **Sunny**
 Water Color: **Cloudy** Odor: **Y/N**
 Sediment Description: **Cloudy**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
1004	1.0	7.25	Out of range	16.5		
1007	2.0	7.38		16.5		
1010	3.0	7.39		16.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-15	1 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DROW/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3-26-09** (inclusive)
 Sampler: **AW**

Well ID: **mw-17**
 Well Diameter: **214** in.
 Total Depth: **9.79** ft.
 Depth to Water: **1.85** ft.
7.94 xVF **.17** = **1.35**

Volume Factor (VF)	3/4"= 0.02 4"= 0.66	1"= 0.04 5"= 1.02	2"= 0.17 6"= 1.50	3"= 0.38 12"= 5.80
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Check if water column is less than 0.50 ft.
x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **3.44**

Purge Equipment:
 Disposable Bailer
 Stainless Steel Bailer
 Stack Pump
 Suction Pump
 Grundfos
 Peristaltic Pump
 QED Bladder Pump
 Other: _____

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer
 Discrete Bailer
 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:	gal
Amt Removed from Well:	gal
Water Removed:	_____
Product Transferred to:	

Start Time (purge): **0925**
 Sample Time/Date: **0950 / 3-26-09**
 Approx. Flow Rate: **—** gpm.
 Did well de-water? **✓** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **3.40**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - US)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
0929	1.5	6.99	Out of range	14.9		
0935	3.0	7.13		15.6		
0940	4.0	7.16	↓	15.9		

LABORATORY INFORMATION

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

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
Event Date: *3-26-09*
Sampler: *aw*

Well ID	<u>MW-18</u>
Well Diameter	<u>7 1/4</u> in.
Total Depth	<u>9.92</u> ft.
Depth to Water	<u>3.28</u> ft.

Date Monitored: 3/26/09

Volume ector (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 than 0.50 ft.

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

Purge Equipment:

- Disposable Bailer
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:

- Disposable Bailer
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other: _____

Time Started: 1340 (2400 hrs)
Time Completed: 1900 (2400 hrs)
Depth to Product: 273 ft
Depth to Water: 3.28 ft
Hydrocarbon Thickness: .55 ft
Visual Confirmation/Description:
Dark oily
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: 300ml gal
Water Removed: 300ml
Product Transferred to: Drawn on site

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 ($\mu\text{mhos}/\text{cm} - \mu\text{S}$)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)

LABORATORY INFORMATION

COMMENTS: SPH - bailed product

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



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **JH**

Well ID: **NP09d MW-3**

Date Monitored: **3/26/09**

Well Diameter: **2 1/4** in.

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

Total Depth: **16.38** ft.

Depth to Water: **9.22** ft.

Check if water column is less than 0.50 ft.
 $12.16 \times VF .66 = 8.02$ x3 case volume = Estimated Purge Volume: **24.07** gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **6.65**

Purge Equipment:

Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump **X** _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **X** _____
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1215**

Weather Conditions:

clear

Sample Time/Date: **1255 / 3/26/09**

Water Color: **Cloudy**

Odor: Y **N**

Approx. Flow Rate: **1** gpm.

Sediment Description: _____

Did well de-water? **NO** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **6.02**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μ hos/cm (μ S))	Temperature ($^{\circ}$ C / $^{\circ}$ F)	D.O. (mg/L)	ORP (mV)
1223	8	7.40	3979	17.0		
1231	16	7.36	out of range	16.7		
1239	24	7.30	↓	16.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<i>NP09d MW-3</i>	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DROW/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

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



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: **25-948218.1**
 Event Date: **3/26/09** (inclusive)
 Sampler: **3H**

Well ID **NPORDMW-4**

Date Monitored: **3/26/09**

Well Diameter **2 1/4** in.

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

Total Depth **18.20** ft.

Depth to Water **5.91** ft.

12.29 xVF **.17** = **2.08** x3 case volume = Estimated Purge Volume: **6.26** gal.

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **8.36**

Purge Equipment:

Disposable Bailer **X**
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump _____
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer **X**
 Pressure Bailer _____
 Discrete Bailer _____
 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: _____ gal

Amt Removed from Well: _____ gal

Water Removed: _____

Product Transferred to: _____

Start Time (purge): **1115**

Weather Conditions:

Clear

Sample Time/Date: **1150 3/26/09**

Water Color: **clear**

Odor: **Y/N**

Approx. Flow Rate: **—** gpm.

Sediment Description: **1-2**

Did well de-water? **No** If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: **7.25**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{mhos}/\text{cm} \cdot \text{US}$)	Temperature ($^{\circ}\text{C} / ^{\circ}\text{F}$)	D.O. (mg/L)	ORP (mV)
1120	2	7.83	out of range	17.7		
1126	4	7.49		17.4		
1133	6	7.36		12.3		

LABORATORY INFORMATION

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

COMMENTS: **2-tubes in well ✓**

Add/Replaced Lock: _____

Add/Replaced Plug: _____

Add/Replaced Bolt: _____



Report Number : 67913

Date : 04/03/2009

Geoffrey Risse
Gettler-Ryan Inc.
3140 Gold Camp Dr. Suite 170
Rancho Cordova, CA 95670

Subject : 19 Water Samples
Project Name : Rolls-Royce Engine Test Facility
Project Number : 25-948218.1

Dear Mr. Risse,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff".
Joel Kiff



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : QA

Matrix : Water

Lab Number : 67913-01

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	92.0		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/01/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	109		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	86.4		% Recovery	M EPA 8015	04/01/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-1

Matrix : Water

Lab Number : 67913-02

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	90.5		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	117		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	88.6		% Recovery	M EPA 8015	04/02/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-2

Matrix : Water

Lab Number : 67913-03

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	89.4		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/01/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	121		% Recovery	M EPA 8015	04/01/2009
Octacosane (Diesel Surrogate)	89.4		% Recovery	M EPA 8015	04/02/2009



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Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-3

Matrix : Water

Lab Number : 67913-04

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	0.69	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	89.8		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	400	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	117		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	87.1		% Recovery	M EPA 8015	04/02/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-4

Matrix : Water

Lab Number : 67913-05

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	89.6		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	720	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	1000	50	ug/L	M EPA 8015	04/01/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	550	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	114		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	87.6		% Recovery	M EPA 8015	04/01/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-5

Matrix : Water

Lab Number : 67913-06

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	106		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	94.5		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	2400	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	2600	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	5500	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	81.0		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	81.8		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-6

Matrix : Water

Lab Number : 67913-07

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	04/01/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	04/01/2009
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	04/01/2009
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	04/01/2009
4-Bromofluorobenzene (Surr)	93.3		% Recovery	EPA 8260B	04/01/2009
TPH as Diesel (Silica Gel)	2400	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	1800	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	6800	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	87.6		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-7

Matrix : Water

Lab Number : 67913-08

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	91.4		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	710	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	790	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	2300	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	122		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	96.8		% Recovery	M EPA 8015	04/02/2009



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Project Number : 25-948218.1

Sample : MW-8

Matrix : Water

Lab Number : 67913-09

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	90.5		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	470	50	ug/L	M EPA 8015	04/02/2009
(Note: Discrete peaks, higher boiling hydrocarbons present, atypical for Diesel Fuel.)					
TPH as Jet Fuel	570	50	ug/L	M EPA 8015	04/01/2009
(Note: Discrete peaks, higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	1500	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	121		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	88.8		% Recovery	M EPA 8015	04/01/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-9

Matrix : Water

Lab Number : 67913-10

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	87.9		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	6900	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	5600	50	ug/L	M EPA 8015	04/01/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	9700	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	91.0		% Recovery	M EPA 8015	04/01/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-10

Matrix : Water

Lab Number : 67913-11

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	53	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	1.8	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	94.9		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	1500	50	ug/L	M EPA 8015	04/02/2009
(Note: Lower boiling hydrocarbons present, atypical for Diesel Fuel)					
TPH as Jet Fuel	2900	50	ug/L	M EPA 8015	04/02/2009
TPH as Motor Oil	1300	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	119		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	95.1		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

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Sample : MW-11

Matrix : Water

Lab Number : 67913-12

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	92.6		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	2300	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	2800	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	4200	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	77.1		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	80.4		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-12

Matrix : Water

Lab Number : 67913-13

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	120		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	88.5		% Recovery	M EPA 8015	04/02/2009



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Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-13

Matrix : Water

Lab Number : 67913-14

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	0.81	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	1.7	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	310	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	2.2	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	95.0		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	86	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	1800	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	120	100	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are lower-boiling than typical Motor Oil)					
Octacosane (Silica Gel Surr)	101		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	87.5		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-14

Matrix : Water

Lab Number : 67913-15

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	0.89	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	93.8		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	79	50	ug/L	M EPA 8015	04/02/2009
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	1000	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	540	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	91.5		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-15

Matrix : Water

Lab Number : 67913-16

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/03/2009
TPH as Jet Fuel	110	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	98.9		% Recovery	M EPA 8015	04/03/2009
Octacosane (Diesel Surrogate)	92.6		% Recovery	M EPA 8015	04/02/2009



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Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : MW-17

Matrix : Water

Lab Number : 67913-17

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	93.9		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	71	50	ug/L	M EPA 8015	04/02/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	100		% Recovery	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	88.0		% Recovery	M EPA 8015	04/02/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : NPord MW-3

Matrix : Water

Lab Number : 67913-18

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	94.1		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/03/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/03/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/03/2009
Octacosane (Silica Gel Surr)	90.7		% Recovery	M EPA 8015	04/03/2009
Octacosane (Diesel Surrogate)	90.3		% Recovery	M EPA 8015	04/03/2009



Report Number : 67913

Date : 04/03/2009

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Sample : NPord MW-4

Matrix : Water

Lab Number : 67913-19

Sample Date : 03/26/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	03/31/2009
TPH as Diesel (Silica Gel)	95	50	ug/L	M EPA 8015	04/03/2009
TPH as Jet Fuel	520	50	ug/L	M EPA 8015	04/01/2009
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel)					
TPH as Motor Oil	160	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	99.3		% Recovery	M EPA 8015	04/03/2009
Octacosane (Diesel Surrogate)	87.5		% Recovery	M EPA 8015	04/01/2009

Report Number : 67913

Date : 04/03/2009

QC Report : Method Blank Data**Project Name : Rolls-Royce Engine Test Facility**Project Number : **25-948218.1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/01/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/01/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/01/2009
Octacosane (Diesel Surrogate)	90.3		%	M EPA 8015	04/01/2009
Octacosane (Silica Gel Surr)	91.6		%	M EPA 8015	04/01/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/02/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/02/2009
Octacosane (Diesel Surrogate)	91.3		%	M EPA 8015	04/02/2009
Octacosane (Silica Gel Surr)	86.1		%	M EPA 8015	04/02/2009
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	04/03/2009
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	04/03/2009
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	04/03/2009
Octacosane (Diesel Surrogate)	96.3		%	M EPA 8015	04/03/2009
Octacosane (Silica Gel Surr)	105		%	M EPA 8015	04/03/2009
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/30/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/30/2009
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	03/30/2009
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	03/30/2009
Toluene - d8 (Surr)	94.7		%	EPA 8260B	03/30/2009

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/31/2009
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	03/31/2009
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	03/31/2009
4-Bromofluorobenzene (Surr)	90.8		%	EPA 8260B	03/31/2009
Toluene - d8 (Surr)	100		%	EPA 8260B	03/31/2009

KIFF ANALYTICAL, LLC

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

Project Name : Rolls-Royce Engine Test Facility

Project Number : 25-948218.1

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	BLANK	<50	1000	1000	871	844	ug/L	M EPA 8015	4/1/09	87.1	84.4	3.13	70-130	25
TPH as Diesel	BLANK	<50	1000	1000	981	963	ug/L	M EPA 8015	4/1/09	98.1	96.3	1.86	70-130	25
TPH-D (Si Gel)	BLANK	<50	1000	1000	924	938	ug/L	M EPA 8015	4/2/09	92.4	93.8	1.53	70-130	25
TPH as Diesel	BLANK	<50	1000	1000	964	996	ug/L	M EPA 8015	4/2/09	96.4	99.6	3.21	70-130	25
TPH-D (Si Gel)	BLANK	<50	1000	1000	897	881	ug/L	M EPA 8015	4/3/09	89.7	88.1	1.78	70-130	25
TPH as Diesel	BLANK	<50	1000	1000	951	960	ug/L	M EPA 8015	4/3/09	95.1	96.0	0.927	70-130	25
Benzene	67920-03	<0.50	39.3	39.3	37.2	36.4	ug/L	EPA 8260B	3/30/09	94.6	92.4	2.34	70-130	25
Methyl-t-butyl ether	67920-03	<0.50	40.7	40.7	39.0	39.0	ug/L	EPA 8260B	3/30/09	95.8	95.7	0.180	70-130	25
Toluene	67920-03	<0.50	40.1	40.1	37.6	36.5	ug/L	EPA 8260B	3/30/09	93.6	91.0	2.90	70-130	25
Benzene	67920-08	<0.50	39.3	39.3	37.8	36.4	ug/L	EPA 8260B	3/30/09	96.2	92.4	4.00	70-130	25
Methyl-t-butyl ether	67920-08	<0.50	40.7	40.7	39.7	39.6	ug/L	EPA 8260B	3/30/09	97.5	97.2	0.271	70-130	25
Toluene	67920-08	<0.50	40.1	40.1	39.8	38.3	ug/L	EPA 8260B	3/30/09	99.1	95.4	3.77	70-130	25
Benzene	67916-06	<0.50	39.3	39.3	36.6	35.4	ug/L	EPA 8260B	3/31/09	93.0	90.0	3.24	70-130	25
Methyl-t-butyl ether	67916-06	<0.50	40.7	40.7	37.4	36.9	ug/L	EPA 8260B	3/31/09	91.9	90.6	1.37	70-130	25
Toluene	67916-06	<0.50	40.1	40.1	38.4	37.3	ug/L	EPA 8260B	3/31/09	95.6	93.0	2.71	70-130	25

Report Number : 67913

QC Report : Laboratory Control Sample (LCS)

Date : 04/03/2009

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

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	3/30/09	92.0	70-130
Methyl-t-butyl ether	40.7	ug/L	EPA 8260B	3/30/09	93.1	70-130
Toluene	40.0	ug/L	EPA 8260B	3/30/09	90.8	70-130
Benzene	40.1	ug/L	EPA 8260B	3/30/09	92.8	70-130
Methyl-t-butyl ether	40.8	ug/L	EPA 8260B	3/30/09	95.1	70-130
Toluene	40.1	ug/L	EPA 8260B	3/30/09	95.7	70-130
Benzene	40.2	ug/L	EPA 8260B	3/31/09	88.8	70-130
Methyl-t-butyl ether	40.9	ug/L	EPA 8260B	3/31/09	89.4	70-130
Toluene	40.2	ug/L	EPA 8260B	3/31/09	89.2	70-130

KIFF ANALYTICAL, LLC

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

Yes
 No

67913

Chain-of-Custody-Record

Direct Bill To: Geoffrey Risse Gettler-Ryan Inc. 3140 Gold Camp Dr. Rancho Cordova, CA 95670		Facility <u>Rolls-Royce Engine Test Facility</u> Facility Address: <u>6701 Old Earhart Road, Oakland, CA</u> Consultant Project #: <u>25-948218.1</u> Consultant Name: <u>GETTLER-RYAN INC.</u> Address: <u>3140 Gold Camp Dr., Suite 170, Rancho Cordova, CA 95670</u> Project Contact: (Name) <u>Geoffrey Risse</u> e-mail <u>grisse@grinc.com</u> (Phone) <u>916-631-1300x12</u> (Fax) <u>916-631-1317</u>	(Name) <u>Geoffrey Risse</u> (Phone) <u>916-631-1300x12</u> Laboratory Name: <u>Kiff Analytical</u> Laboratory Service Order: Laboratory Service Code: Samples Collected by: (Name) <u>Jim Heaton</u> Signature: <u>Jim Heaton</u>
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Sample I.D.	Number of Containers	Matrix S= Soil A=Air W=Water C=Charcoal	DATE/SAMPLE COLLECTION TIME	State Method:						Series	CO	UT	ID	Remarks
				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)					
QA	2	W	3/26/09	X	X	X	X	X	X					1/62
MW-1	7		1035	X	X	X	X	X						01
MW-2	1		1120	X	X	X	X	X						02
MW-3			1235	X	X	X	X	X						03
MW-4			1005	X	X	X	X	X						04
MW-5			0940	X	X	X	X	X						05
MW-6			0935	X	X	X	X	X						06
MW-7			1340	X	X	X	X	X						07
MW-8			1055	X	X	X	X	X						08
MW-9			1355	X	X	X	X	X						09
MW-10			1215	X	X	X	X	X						10
MW-11			1315	X	X	X	X	X						11
MW-12			1100	X	X	X	X	X						12
MW-13	V	V	1330	X	X	X	X	X						13
														14

SAMPLE RECEIPT
Temp °C 2-8 Therm. ID# ZR-5
Initial ZJR Date 032709
Time 1842 Coolant present: Yes Yes No No

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)	Turn Around Time (Circle Choice)
<u>J. May/N. Riss</u>	Gettler-Ryan	3/26/09 1700	<u>R. Risse</u>	<u>C-R</u>	31/8/09 09 1030	Iced (Y/N)	
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)	
<u>J. May/N. Riss</u>							
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)	Organization	Date/Time	Iced (Y/N)	
<u>J. May/N. Riss</u>			<u>L. White Kiff Analytical</u>		032709 1530	Iced (Y/N)	

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

Yes
 No

(79)3

Chain-of-Custody-Record