Roya C. Kambin
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6270
RKLG@chevron.com

September 7, 2012

Mr. Mark Detterman
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: Third Quarter 2012 Groundwater Monitoring Report
1400 Powell Street, Emeryville, California
Fuel Leak Case No.: RO0000067

Dear Mr. Detterman,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (925) 790-6270.

Sincerely,

Roya Kambin
Union Oil of California – Project Manager

Attachment
Third Quarter 2012 Monitoring Report

ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco
California 94104
Tel 415.374.2744
Fax 415.374.2745
www.arcadis-us.com

ENVIRONMENT

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Suite 250
Alameda, California 94502-6577

Subject:
Third Quarter 2012 Groundwater Monitoring Report

Date:
September 7, 2012

Contact:
Leah M. Ackerman

Phone:
415.432.6912

Email:
Leah.Ackerman@arcadis-us.com

Our ref:
B0047937.0001

Dear Mr. Detterman:

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California (hereinafter "EMC"), ARCADIS U.S., Inc (ARCADIS) is pleased to submit the enclosed Quarterly Groundwater Monitoring Report for the following facility:

Facility No.	**Case No.**	**Location**
3737	RO0000067	1400 Powell Street Emeryville, California

If you have any questions, please contact Leah Ackerman at 415.432.6912.

Sincerely,

ARCADIS

Leah Ackerman, P.E.
Project Engineer

Copies:
Ms. Roya Kambin, EMC (electronic copy)
Mr. Najmeddin Revan, Property Owner

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
THIRD QUARTER 2012
September 7, 2012

Facility No.: 3737 Address: 1400 Powell Street, Emeryville, California

Consulting Company/Contact Person/Phone No.:	ARCADIS / Leah Ackerman/ 415.432.6912
Primary Agency/Contact Person/Regulatory ID No.:	Alameda County Environmental Health / Mr.Mark Detterman / Case No. RO 0000067

WORK PERFORMED DURING THIS REPORTING PERIOD (Third Quarter – 2012) :

1. TRC Solutions (TRC) conducted groundwater monitoring and sampling on July 29, 2012. Field data sheets and general procedures are included as **Attachment A**. Six (6) monitoring wells (MW-1A through MW-3A in the shallow zone and MW-1B through MW-3B in the deep zone) were gauged, purged, and sampled during this monitoring event.

   All collected groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) by Environmental Protection Agency (EPA) Method 8260B; benzene, toluene, ethylbenzene, and total xylenes (BTEX, collectively), full scan of volatile organic compounds (VOCs) including oxygenates (methyl tertiary butyl ether [MTBE] and tertiary butyl alcohol [TBA]); 1,2-dibromoethane (EDB) and 1,2-dichloroethane (EDC), diisopropyl ether (DIPE), tert-butyl ethyl ether (ETBE), tert-amyl methyl ether (TAME), and ethanol by EPA Method 8260B; total petroleum hydrocarbons as diesel (TPH-d) and total petroleum hydrocarbons as motor oil (TPH-mo) by EPA Method 8015B with silica gel clean-up.

   The site location map, the site plan, and the groundwater contour and hydrocarbon concentration maps are presented on **Figures 1** through **4**. Current Groundwater Gauging and Analytical Results are summarized in **Table 1**, Historical Groundwater Gauging and Analytical Results are summarized in **Table 2,** and Historical Groundwater Results from Antea are included as **Attachment B**. A copy of the laboratory analytical report and chain-of-custody documentation is included as **Attachment C.**
2. Four temporary monitoring wells (MWT-1 through MWT-4) were installed between July 25 and 26, 2012 as part of site assessment activities. These temporary monitoring wells were also gauged and sampled during the third quarter 2012 sampling event. The groundwater elevations of the temporary wells were included in assessing the groundwater contour and flow direction in the shallow zone (**Figure 3**). Although the analytical data for MWT-1 through MWT-4 are also presented in **Table 1**, the evaluation of the analytical data will be included in the forthcoming Site Assessment and Preferential Pathway Survey Report.

WORK PROPOSED FOR THE NEXT REPORTING PERIOD (Fourth Quarter – 2012):

1. Perform groundwater monitoring and related reporting during fourth quarter 2012.

Current Phase of Project:	Groundwater Monitoring
Site Use:	Active Service Station
Frequency of Sampling:	Groundwater – Quarterly (MW-1A through MW-3A), Semiannually (All monitoring wells)
Frequency of Monitoring:	Groundwater – Quarterly (MW-1A through MW-3A), Semiannually (All monitoring wells)
Measurable Separate-Phase Hydrocarbons (SPH) this quarter:	None
Cumulative SPH Recovered to Date:	None
SPH Recovered This Quarter:	None
Bulk Soil Removed to Date:	Six cubic yards
Bulk Soil Removed this Quarter:	None

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
THIRD QUARTER 2012
September 7, 2012

Facility No.: 3737 Address: 1400 Powell Street, Emeryville, California

Water Wells or Surface Waters within a 2000' Radius and Their Respective Directions:		None		
Groundwater Use Designation:		Municipal and Domestic		
Current Remediation Techniques:		None		
Permits for Discharge (No.):		None		
Approximate Depth to Groundwater:		Shallow Zone: 3.44 (MWT-3) – 7.33 (MW-2A) feet below top of casing Deep Zone: 4.36 (MW-3B) – 6.90 (MW-1B) feet below top of casing		
Approximate Groundwater Elevation:		Shallow Zone: 11.60 (MW-2A) – 14.12 (MW-3A) feet above mean sea level Deep Zone: 11.98 (MW-1B) – 14.21 (MW-3B) feet above mean sea level Measured X Estimated		
Groundwater Gradient (Shallow Zone):	0.055 ft/ft	(Magnitude)	West- southwest	(Direction)
Groundwater Gradient (Deep Zone):	0.04 ft/ft	(Magnitude)	South	(Direction)

DISCUSSION:

Groundwater conditions at the six (6) monitoring wells sampled during the third quarter 2012 remained generally consistent with previous quarters. The maximum concentration of TPH-d (310 micrograms per liter [µg/L]), TPH-g (1,900 µg/L), benzene (120 µg/L), MTBE (280 µg/L), and TBA (2,300 µg/L) were detected in the samples collected from MW-2A. The maximum concentrations of TPH-g (1,900 µg/L), toluene (2.1 µg/L), ethylbenzene (14 µg/L), and total xylenes (2.2 µg/L) were detected in the samples collected from MW-3A. The maximum concentration of EDC (24 µg/L) was detected in the sample collected from MW-1B and the maximum concentration of TAME (1.2 µg/L) was detected in the sample collected from MW-1A. EDB, DIPE, ETBE, and ethanol were not detected in any of the monitoring wells.

Groundwater elevations across the site in the shallow water-bearing zone vary by approximately two and one half feet and create a hydraulic gradient of 0.055 foot per foot in the west-southwest direction. Groundwater elevations across the site in the deeper water-bearing zone vary by approximately two feet and create a hydraulic gradient of 0.04 foot per foot in the southern direction.

CONCLUSIONS AND RECOMMENDATIONS:

Dissolved hydrocarbon constituent concentrations have remained relatively consistent with previous quarters. ARCADIS recommends continued groundwater monitoring and reporting.

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
THIRD QUARTER 2012
September 7, 2012

Facility No.: 3737 Address: 1400 Powell Street, Emeryville, California

ATTACHMENTS:

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Groundwater Elevation Contour and Hydrocarbon Concentration Map (Shallow Zone)
Figure 4: Groundwater Elevation Contour and Hydrocarbon Concentration Map (Deep Zone)

Table 1: Current Groundwater Gauging and Analytical Results
Table 2: Historical Groundwater Gauging and Analytical Results

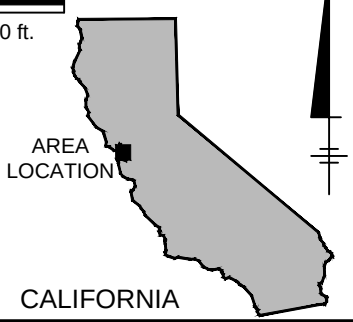
Attachment A: Field Data Sheets and General Procedures
Attachment B: Historical Groundwater Results from Antea
Attachment C: Laboratory Report and Chain-of-Custody Documentation

Figures

REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND WEST, CALIFORNIA, 1993.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



UNION OIL
FORMER 76 SERVICE STATION 3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

SITE LOCATION MAP

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FIGURE
1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS
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LEGEND

- PROPERTY BOUNDARY
- LOT LINE
- MW-1A — MONITORING WELL LOCATION (SHALLOW ZONE)
- MW-1B — MONITORING WELL LOCATION (DEEP ZONE)
- TCW-1 — TANK CAVITY WELL
- OW-11 — DEWATERING WELL (OFFSITE)
- TR-12/TRCPT-8 — APPROXIMATE BORING LOCATION BY TREADWELL AND ROLLO (OFFSITE), 2000-2010
- D-1 — HISTORICAL BORING LOCATION (ONSITE)
- CPT-1 — CPT BORING LOCATION, 2009
- MWT-1 — TEMPORARY MONITORING WELL LOCATION, 2012
- APPROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP

NOTE:

1. TEMPORARY MONITORING WELL LOCATIONS, BUILDING, CURB, PLANTER, AND PARKING AREAS SURVEYED BY MUIR CONSULTING, INC. 8/1/12. HORIZONTAL DATUM NAD83, VERTICAL DATUM NAVD88. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE AND WERE PROVIDED BY CRA, DATED 1/27/2011, AT A SCALE OF 1"=20'.

0 25' 50'

GRAPHIC SCALE

UNION OIL
FORMER 76 SERVICE STATION 3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE 2

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS
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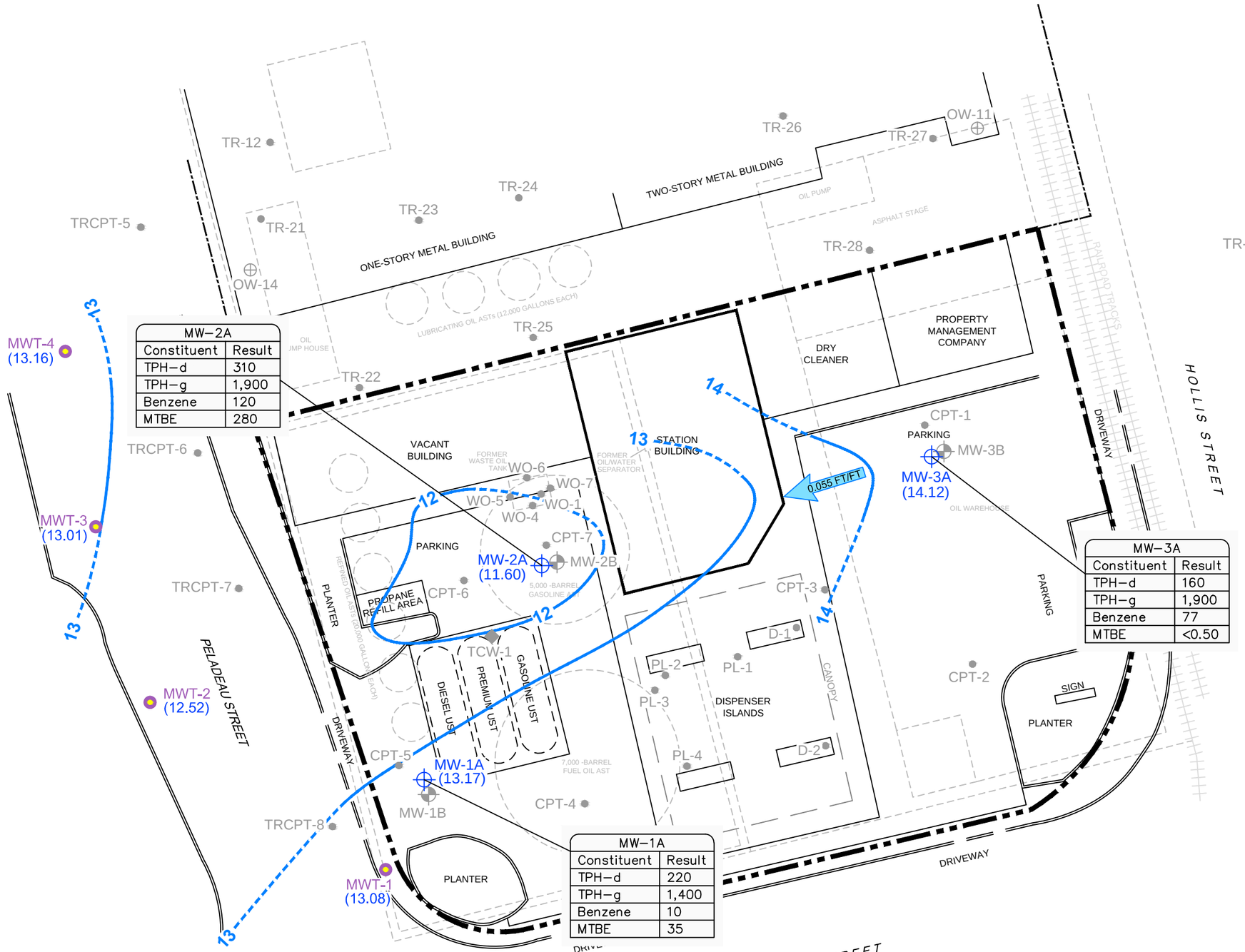

LEGEND

- PROPERTY BOUNDARY
- LOT LINE
- MW-1A — MONITORING WELL LOCATION (SHALLOW ZONE)
- MW-1B — MONITORING WELL LOCATION (DEEP ZONE)
- TCW-1 — TANK CAVITY WELL
- OW-11 — DEWATERING WELL (OFFSITE)
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- D-1 — HISTORICAL BORING LOCATION (ONSITE)
- CPT-1 — CPT BORING LOCATION, 2009
- MWT-1 — TEMPORARY MONITORING WELL LOCATION
- APPROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP
- GROUNDWATER ELEVATION CONTOUR (FT MSL; DASHED WHERE INFERRED)
- (13.17) — GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (MSL)
- 0.055 FT/FT — APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT MEASURED IN FOOT PER FOOT (FT/FT)

NOTE:

1. TEMPORARY MONITORING WELL LOCATIONS, BUILDING, CURB, PLANTER, AND PARKING AREAS SURVEYED PROVIDED BY MUIR CONSULTING, INC. 8/1/12. HORIZONTAL DATUM NAD83, VERTICAL DATUM NAVD88. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE AND WERE PROVIDED BY CRA, DATED 1/27/2011, AT A SCALE OF 1"=20'.

0 25' 50'
GRAPHIC SCALE

UNION OIL
FORMER 76 SERVICE STATION 35-1780
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR AND HYDROCARBON CONCENTRATION MAP (SHALLOW ZONE) JULY 29, 2012

ARCADIS

FIGURE 3

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS
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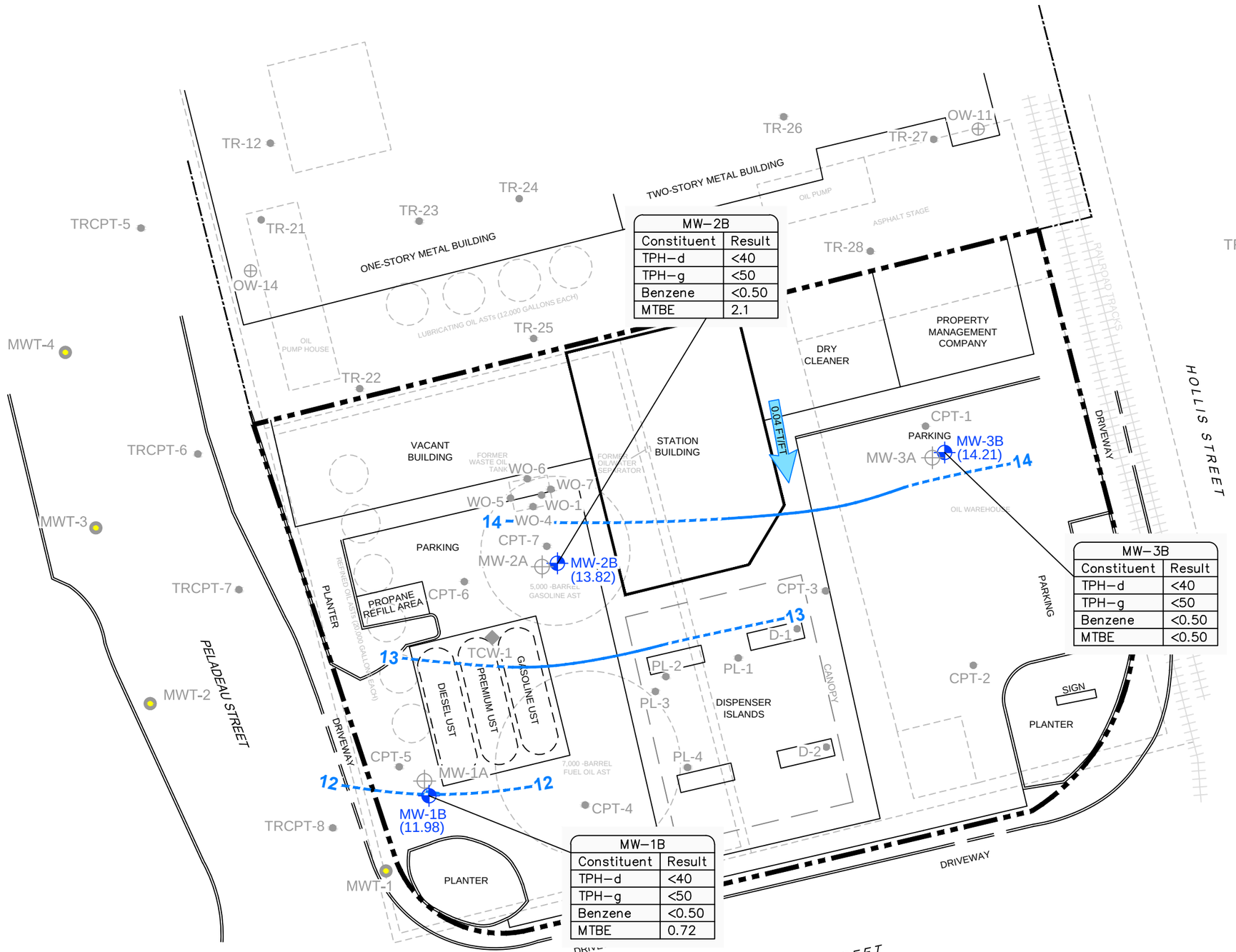

LEGEND

- PROPERTY BOUNDARY
- LOT LINE
- MW-1A — MONITORING WELL LOCATION (SHALLOW ZONE)
- MW-1B — MONITORING WELL LOCATION (DEEP ZONE)
- TCW-1 — TANK CAVITY WELL
- OW-11 — DEWATERING WELL (OFFSITE)
- TR-12/TRCPT-8 — APPROXIMATE BORING LOCATION BY TREADWELL AND ROLLO (OFFSITE), 2000-2010
- D-1 — HISTORICAL BORING LOCATION (ONSITE)
- CPT-1 — CPT BORING LOCATION, 2009
- MWT-1 — TEMPORARY MONITORING WELL LOCATION
- APPROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP
- GROUNDWATER ELEVATION CONTOUR (FT MSL; DASHED WHERE INFERRED)
- (13.82) — GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (MSL)
- 0.04 FT/FT — APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT MEASURED IN FOOT PER FOOT (FT/FT)

NOTE:

1. TEMPORARY MONITORING WELL LOCATIONS, BUILDING, CURB, PLANTER, AND PARKING AREAS SURVEYED PROVIDED BY MUIR CONSULTING, INC. 8/1/12. HORIZONTAL DATUM NAD83, VERTICAL DATUM NAVD88. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE AND WERE PROVIDED BY CRA, DATED 1/27/2011, AT A SCALE OF 1"=20'.

0 25' 50'
GRAPHIC SCALE

UNION OIL
FORMER 76 SERVICE STATION 35-1780
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR AND HYDROCARBON CONCENTRATION MAP (DEEP ZONE) JULY 29, 2012

ARCADIS

FIGURE 4

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS
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ARCADIS

Tables

Table 1
Current Groundwater Gauging and Analytical Results
76 Station 3737
1400 Powell Street, Emeryville, California

Well ID	Date Sampled	TOC (feet AMSL)	DTW (feet bgs)	LPH Thickness (feet)	GW Elevation (feet AMSL)	Previous Quarter GWE (feet AMSL)	Change in Elevation (feet)	TPH-Motor Oil (8015B/FFP)	TPH-d (8015B/FFP)	TPH-g (Luft-GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
MW-1A	7/29/2012	18.74	5.57	0.00	13.17	13.24	0.07	<100	220	1,400	10	<0.50	0.8	1.9	35	80	<0.50	<0.50	<0.50	<0.50	1.2	<250	
MW-1B	7/29/2012	18.88	6.90	0.00	11.98	11.55	-0.43	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	0.72	<10	<0.50	27	<0.50	<0.50	<0.50	<250	
MW-2A	7/29/2012	18.93	7.33	0.00	11.60	11.16	-0.44	<100	310	1,900	120	1.9	12	1.4	280	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-2B	7/29/2012	19.10	5.28	0.00	13.82	13.92	0.10	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	2.1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-3A	7/29/2012	18.62	4.50	0.00	14.12	14.22	0.10	<100	160	1,900	77	2.1	14	2.2	<0.50	<10	<0.50	0.94	<0.50	<0.50	<0.50	<250	
MW-3B	7/29/2012	18.57	4.36	0.00	14.21	14.05	-0.16	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MWT-1	7/29/2012	19.11	6.03	0.00	13.08	--	--	--	450	2,500	7.7	2.3	3.5	6.3	31	71	--	--	--	--	--	--	
MWT-2	7/29/2012	17.47	4.95	0.00	12.52	--	--	--	<40	3,000	70	1.6	62	8.8	11	89	--	--	--	--	--	--	
MWT-3	7/29/2012	16.45	3.44	0.00	13.01	--	--	--	640	2,100	1.3	0.65	0.63	2.4	1.9	17	--	--	--	--	--	--	
MWT-4	7/29/2012	17.09	3.93	0.00	13.16	--	--	--	690	2,800	530	5.8	100	61	0.78	560	--	--	--	--	--	--	

Note

Analytical results given in micrograms per liter (µg/l)

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
bgs	below ground surface
AMSL	above mean sealevel
DTW	depth to water
GW	groundwater
LPH	liquid-phase hydrocarbons
TOC	top of casing (surveyed reference elevation)

Analytes

MTBE	methyl tertiary butyl ether
TBA	tertiary butyl alcohol
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane (same as ethylene dichloride)
ETBE	ethyl tertiary butyl ether
TAME	tertiary amyl methyl ether
DIPE	di-isopropyl ether
TPH-g	total purgable petroleum hydrocarbons
TPH-d	total petroleum hydrcarbons as diesel
TPH-Motor Oil	total petroleum hydrocarbons as motor oil
8260B	EPA Method 8260B for TPH-g and Volatile Organic Compounds
8015B/FFP	EPA Method 8015B with silica gel clean-up for TPH-d and TPH-motor oil
A01	PQL's and MDL's are raised due to sample dilution.
A52	Chromatogram not typical of diesel

Table 2
Historical Groundwater Gauging and Analytical Results
76 Station 3737
1400 Powell Street, Emeryville, California

Well ID	Date Sampled	TOC (feet AMSL)	DTW (feet bgs)	LPH Thickness (feet)	GW Elevation (feet AMSL)	Previous Quarter GWE (feet AMSL)	Change in Elevation (feet)	TPH-Motor Oil (8015B/FFP)	TPH-d (FFP) (8015B/FFP)	TPH-g (Luft-GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
MW-1A	05/01/2011	18.74	5.68	0.00	13.06	--	--	<200	450	1,100	36	0.86	5.9	1.9	31	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/28/2011		5.72	0.00	13.02	13.06	0.04	170	540	840	21	0.68	3.8	1.8	55	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/20/2011		5.58	0.00	13.16	13.02	-0.14	<100	460	1,300	20	0.74	6.4	<1.0	40	79	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	02/19/2012		5.67	0.00	13.07	13.16	0.09	<100	610	1,300	20	0.91	6.8	2.5	59	80	<0.50	<0.50	<0.50	<0.50	2.0	<250	
	05/20/2012		5.50	0.00	13.24	13.07	-0.17	<100	380	1,600	18	0.81	5.1	2.7	26	39	<0.50	<0.50	<0.50	<0.50	0.76	<250	A52
	7/29/2012		5.57	0.00	13.17	13.24	0.07	<100	220	1,400	10	<0.50	0.8	1.9	35	80	<0.50	<0.50	<0.50	<0.50	1.2	<250	
MW-1B	05/01/2011	18.88	8.51	0.00	10.37	--	--	<200	82	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	19	<0.50	<0.50	<0.50	<250	
	08/28/2011		8.27	0.00	10.61	10.37	-0.24	<100	59	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	18	<0.50	<0.50	<0.50	<250	
	11/20/2011		7.88	0.00	11.00	10.61	-0.39	<100	69	<50	<0.50	<0.50	<0.50	<1.0	0.55	<10	<0.50	16	<0.50	<0.50	<0.50	<250	
	02/19/2012		7.59	0.00	11.29	11.00	-0.29	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	0.87	<10	<0.50	26	<0.50	<0.50	<0.50	<250	
	05/20/2012		7.33	0.00	11.55	11.29	-0.26	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	0.75	<10	<0.50	24	<0.50	<0.50	<0.50	<250	
	7/29/2012		6.90	0.00	11.98	11.55	-0.43	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	0.72	<10	<0.50	27	<0.50	<0.50	<0.50	<250	
MW-2A	05/01/2011	18.93	6.40	0.00	12.53	--	--	<1000	1,500	2,800	860	4.6	<0.50	12	220	2,500	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01
	08/28/2011		5.93	0.00	13.00	12.53	-0.47	<1000	1,600	2,300	690	<5.0	<5.0	<10	320	2,100	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	A01
	11/20/2011		5.73	0.00	13.20	13.00	-0.20	<500	1,200	1,800	440	<5.0	<5.0	<10	160	2,200	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	A01
	02/19/2012		7.25	0.00	11.68	13.20	1.52	<100	450	2,000	460	5.1	<0.50	5.8	280	3,200	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	05/20/2012		7.77	0.00	11.16	11.68	0.52	<100	470	2,100	250	3.2	<0.50	3.1	290	2,400	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01, A52
	7/29/2012		7.33	0.00	11.60	11.16	-0.44	<100	310	1,900	120	1.9	12	1.4	280	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-2B	05/01/2011	19.10	7.57	0.00	11.53	--	--	<200	<50	<50	1.2	<0.50	<0.50	<1.0	3.4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/28/2011		5.82	0.00	13.28	11.53	-1.75	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	2.3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/20/2011		5.73	0.00	13.37	13.28	-0.09	<100	56	<50	<0.50	<0.50	<0.50	<1.0	2.0	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	02/19/2012		5.46	0.00	13.64	13.37	-0.27	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	3.1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	05/20/2012		5.18	0.00	13.92	13.64	-0.28	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	3.0	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/29/2012		5.28	0.00	13.82	13.92	0.10	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	2.1	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-3A	05/01/2011	18.62	4.68	0.00	13.94	--	--	<200	460	2,700	130	2.7	98	3.6	<0.50	<10	<0.50	1.2	<0.50	<0.50	<0.50	<250	A01
	08/28/2011		4.92	0.00	13.70	13.94	0.24	130	440	1,700	39	0.51	28	1.6	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/20/2011		4.97	0.00	13.65	13.70	0.05	<100	330	1,200	25	0.83	17	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	02/19/2012		4.72	0.00	13.90	13.65	-0.25	<1000	1400	1,900	60	2.1	41	2.1	0.71	30	<0.50	0.80	<0.50	<0.50	<0.50	<250	A01
	05/20/2012		4.40	0.00	14.22	13.90	-0.32	<100	340	2,200	45	2.2	30	2.5	0.54	25	<0.50	0.85	<0.50	<0.50	<0.50	<250	A52
	7/29/2012		4.50	0.00	14.12	14.22	0.10	<100	160	1,900	77	2.1	14	2.2	<0.50	<10	<0.50	0.94	<0.50	<0.50	<0.50	<250	
MW-3B	05/01/2011	18.57	6.68	0.00	11.89	--	--	<200	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/28/2011		7.29	0.00	11.28	11.89	0.61	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/20/2011		6.33	0.00	12.24	11.28	-0.96	<100	45	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	02/19/2012		4.62	0.00	13.95	12.24	-1.71	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	05/20/2012		4.52	0.00	14.05	13.95	-0.10	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/29/2012		4.36	0.00	14.21	14.05	-0.16	<100	<40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	

Note

Analytical results given in micrograms per liter (µg/l)

Table 2
Historical Groundwater Gauging and Analytical Results
76 Station 3737
1400 Powell Street, Emeryville, California

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
bgs	below ground surface
AMSL	above mean sealevel
DTW	depth to water
GW	groundwater
LPH	liquid-phase hydrocarbons
TOC	top of casing (surveyed reference elevation)

Analytes

MTBE	methyl tertiary butyl ether
TBA	tertiary butyl alcohol
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane (same as ethylene dichloride)
ETBE	ethyl tertiary butyl ether
TAME	tertiary amyl methyl ether
DIPE	di-isopropyl ether
TPH-g	total purgable petroleum hydrocarbons
TPH-d	total petroleum hydrcarbons as diesel
TPH-Motor Oil	total petroleum hydrocarbons as motor oil
8260B	EPA Method 8260B for TPH-g and Volatile Organic Compounds
8015B/FFP	EPA Method 8015B with silica gel clean-up for TPH-d and TPH-motor oil
A01	PQL's and MDL's are raised due to sample dilution.
A52	Chromatogram not typical of diesel

ARCADIS

Attachment A

Field Data Sheets and General Procedures

123 Technology Drive West
Irvine, CA 92618

949.727.9336 PHONE
949.727.7399 FAX

www.TRCsolutions.com

DATE: August 6, 2012

TO: Leah Ackerman, ARCADIS
CC: Angeline Tan, ARCADIS
Andrea Valdivia, Arcadis

SITE: Unocal Site 3737
Facility 351780
1400 Powell Street, Emeryville, CA

RE: Transmittal of Groundwater Monitoring Data

Dear Ms. Ackerman,

Please find attached the field data sheets, chain of custody (COC) forms, and technical services request (TSR) form for the monitoring event that was completed on July 29, 2012. Field measurements and collection of samples submitted to the laboratory were completed in general accordance with our usual groundwater monitoring protocol which is also attached for your reference.

Please call me at 949-727-7345 if you have questions.

Sincerely,

TRC

Christina Carrillo
Groundwater Program Coordinator

GENERAL FIELD PROCEDURES

Groundwater Gauging and Sampling Assignments

For each site, TRC technicians are provided with a Technical Service Request (TSR) that specifies activities required to complete the groundwater gauging and sampling assignment for the site. TSRs are based on client directives, instructions from the primary environmental consultant for the site, regulatory requirements, and TRC's previous experience with the site.

Fluid Level Measurements (Gauging)

Initial site activities include determination of well locations based on a site map provided with the TSR. Well boxes are opened and caps are removed. Indications of well or well box damage or of pressure buildup in the well are noted.

Fluid levels in each well are measured using a coated cloth tape equipped with an electronic interface probe, which distinguishes between liquid phase hydrocarbon (LPH) and water. The depth to LPH (if it is present), to water, and to the bottom of the well are measured from the top of the well casing (surveyors mark or notch if present) to the nearest 0.01 foot. Unless otherwise instructed, a well with less than 0.67 foot between the measured top of water and the measured bottom of the well casing is considered dry, and is not sampled. If the well contains 0.67 foot or more of water, an attempt is made to bail and/or sample as specified on the TSR.

Unless otherwise instructed, a well that is found to contain a measureable amount of LPH (0.01 foot) is not purged or sampled. Instead, one casing volume of fluid is bailed from the well and the well is re-sealed.

Purging and Groundwater Parameter Measurement

TSR instructions may specify that a well not be purged (no-purge sampling), be purged using low-flow methods, or be purged using conventional pump and/or bail methods. Conventional purging generally consists of pumping or bailing until a minimum of three casing volumes of water have been removed or until the well has been pumped dry. Pumping is generally accomplished using submersible electric or pneumatic diaphragm pumps. The pump intake is initially set at about 5 feet below the level of water in the casing, and is lowered as needed to compensate for falling water level. Pump depths are recorded in Field Notes.

During conventional purging, three groundwater parameters (temperature, pH, and conductivity) are measured after removal of each casing volume. Stabilization of these parameters, to within 10 percent, confirm that sufficient purging has been completed. In some cases, the TSR indicates that other parameters are also to be measured during purging. TRC commonly measures dissolved oxygen (DO), oxidation-reduction potential (ORP), and/or turbidity. Instruments used for groundwater parameter measurements are calibrated daily according to manufacturer's instructions.

Low-flow purging utilizes a bladder or peristaltic pump to remove water from the well at a low rate. Groundwater parameters specified by the TSR are measured continuously, using a flow cell, until they become stable in general accordance with EPA guidelines.

Groundwater Sample Collection

After wells are purged, or not purged, according to TSR instructions, samples are collected for laboratory analysis. For wells that have been purged using conventional pump or bail methods, sampling is conducted after the well has recovered to 80 percent of its original volume or after two hours if the well does not recover to at least 80 percent. If there is insufficient recharge of water in the well after two hours, the well is not sampled.

GENERAL FIELD PROCEDURES

Samples are collected by lowering a new, disposable polyethylene bottom-fill bailer to just below the water level in the well. The bailer is retrieved and the water sample is carefully transferred to containers specified for the laboratory analytical methods indicated by the TSR. Particular care is given to containers for volatile organic analysis (VOAs) which require filling to zero headspace and fitting with Teflon-sealed caps.

Sample containers are labeled with project number (or site number), well designation, sample date, sample time, and the sampler's initials, and placed in an insulated chest with ice. Samples remain chilled prior to and during transport to a state-certified laboratory for analysis. Sample container descriptions and requested analyses are entered onto a chain-of-custody form in order to provide instructions to the laboratory. The chain-of-custody form accompanies the samples during transportation to provide a continuous record of possession from the field to the laboratory. If a freight or overnight carrier transports the samples, the carrier is noted on the form.

For wells that have been purged using low-flow methods, sample containers are filled from the effluent stream of the bladder or peristaltic pump. In some cases, if so specified by the TSR, samples are taken from the sample ports of actively pumping remediation wells.

Sequence of Gauging, Purging and Sampling

The sequence in which monitoring activities are conducted is specified on the TSR. In general, wells are gauged beginning with the least affected well and ending with the well that has the highest concentration based on previous analytic results. After all gauging for the site is completed, wells are purged and/or sampled from the least-affected to the most-affected well. If wells must be gauged or sampled out of order, alternate interface probes and/or pumps are utilized and are noted in field documentation.

Decontamination

In order to reduce the possibility of cross contamination between wells, strict isolation and decontamination procedures are observed. Portable pumps are not used in wells with LPH. Technicians wear nitrile gloves during all gauging, purging, and sampling activities. Gloves are changed between wells and more often if warranted. Any equipment that could come in contact with fluids are either dedicated a particular well, decontaminated prior to each use, or discarded after a single use. Decontamination consists of washing in a solution of Liquinox and water and rinsing twice. The final rinse is in deionized water.

Purge Water Disposal

Purge water is generally collected in labeled drums for disposal as non-hazardous waste. Drums may be left on site for disposal by others, or transported to a collection location at a TRC field office, in either Fullerton, California or Concord, California, for eventual transfer to a licensed treatment or recycling facility. Alternatively, purge water may be collected directly from the site by a licensed vacuum truck company, or may be treated on site by an active remediation system, if so directed.

Exceptions

Additional tasks or non-standard procedures, if any, that may be requested or required for a particular site, are documented in field notes on the following pages.

FIELD MONITORING DATA SHEET

Technician: Basilio Job #/Task #: 189791.0035.1780 Date: 7-29-12

Site # 3737 Project Manager AF Page 1 of 1

Well #	TOC	Time Gauged	Total Depth	Depth to Water	Depth to Product	Product Thickness (feet)	Time Sampled	Misc. Well Notes
MWT-4	✓	0525	9.34	3.93	—	—	0842	2"
MWT-3	✓	0532	9.80	3.44	—	—	0944	2"
MWT-2	✓	0539	9.60	4.95	—	—	1024	2"
MWT-1	✓	0545	9.66	6.03	—	—	1120	2"
MW-3B	✓	0551	23.80	4.36	—	—	1410	2"
MW-1B	✓	0556	21.70	6.90	—	—	1420	2"
MW-2B	✓	0602	23.58	5.28	—	—	1436	2"
MW-1A	✓	0608	9.70	5.57	—	—	1220	2"
MW-3A	✓	0612	9.22	4.50	—	—	1203	2"
MW-2A	✓	0616	10.15	7.33	—	—	1254	2"

FIELD DATA COMPLETE QA/QC COC WELL BOX CONDITION SHEETS

MANIFEST DRUM INVENTORY TRAFFIC CONTROL

TRC

GROUNDWATER SAMPLING FIELD NOTES

Technician: Bandis

Site: 3737 Project No.: 189791.0035.1780 Date: 7-29-12

Well No. MW-3B

Depth to Water (feet): 4.36

Total Depth (feet) 23.80

Water Column (feet): 19.44

80% Recharge Depth(feet): 8.24

Purge Method: —

Depth to Product (feet): —

LPH & Water Recovered (gallons): —

Casing Diameter (Inches): ~~BR~~ 2

1 Well Volume (gallons): 4

Time Start	Time Stop	Pump Depth (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F , C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
1210	1213		4	1303	23.7	8.13			
			8	—	—	—			
			12	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
5.60	4	1410

Comments: Dry at 4 gls

Well No. MW-3A

Depth to Water (feet): 4.50

Total Depth (feet) 9.22

Water Column (feet): 4.72

80% Recharge Depth(feet): 5.44

Purge Method: HB

Depth to Product (feet): —

LPH & Water Recovered (gallons): —

Casing Diameter (Inches): 2

1 Well Volume (gallons): 1

Time Start	Time Stop	Pump Depth (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F , C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0642			1	1308	23.2	6.69			
	0648		2	1288	24.1	6.54			
			3	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
4.77	2	1203

Comments: Dry at 2 gls.

TRC

GROUNDWATER SAMPLING FIELD NOTES

Technician: Basilio

Site: 3737 Project No.: 184791.0035.1780 Date: 7-29-12

Well No. MW-1B Purge Method: Sub

Depth to Water (feet): 6.90 Depth to Product (feet): —

Total Depth (feet) 21.70 LPH & Water Recovered (gallons): —

Water Column (feet): 14.80 Casing Diameter (Inches): 2

80% Recharge Depth(feet): 9.86 1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, (C))	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
1230			3	1262	23.7	7.36			
	1233		6	—	—	—			
			9	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
8.33	4	1420

Comments: Dry at 4 Gls.

Well No. MW-1A Purge Method: HB

Depth to Water (feet): 5.57 Depth to Product (feet): —

Total Depth (feet) 9.70 LPH & Water Recovered (gallons): —

Water Column (feet): 4.13 Casing Diameter (Inches): 2

80% Recharge Depth(feet): 6.39 1 Well Volume (gallons): 1

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, (C))	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0651			1	697.3	21.9	6.95			
	0656		2	714.4	21.9	6.68			
			3	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
5.62	2	1220

Comments: Dry at 2 Gls.

TRC

GROUNDWATER SAMPLING FIELD NOTES

Technician: Barlow

Site: 3737 Project No.: 189791.0035.1780 Date: 7-29-12

Well No. MW-2A Purge Method: HB

Depth to Water (feet): 7.33 Depth to Product (feet): —

Total Depth (feet) 10.15 LPH & Water Recovered (gallons): —

Water Column (feet): 2.82 Casing Diameter (Inches): 2

80% Recharge Depth(feet): 7.89 1 Well Volume (gallons): 0.5

Time Start	Time Stop	Pump Depth (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0632	0636		.5	2505	20.4	6.86			
			1.0	—	—	—			
			1.5	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
8.88	< 1.5 Gls.	1254

Comments: Pre Purge sample 0625 Dry at < 1.5 Gls.

Well No. MW-2B Purge Method: HB

Depth to Water (feet): 5.28 Depth to Product (feet): —

Total Depth (feet) 23.58 LPH & Water Recovered (gallons): —

Water Column (feet): 18.30 Casing Diameter (Inches): 2

80% Recharge Depth(feet): 8.94 1 Well Volume (gallons): 4

Time Start	Time Stop	Pump Depth (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
1241	1244		4	994.5	23.1	7.30			
			8	—	—	—			
			12	—	—	—			

Static at Time Sampled	Total Gallons Purged	Sample Time
8.26	4	1436

Comments: Dry at 4 Gls.

TRC

GROUNDWATER SAMPLING RECORD

Project No.: 189791.0035.1780
Project Name: 3737
Weather: cloudy

Date: 7-29-12
Measured By: BASilio
Page 1 of 1

Well Name: MW-1
Sample Number:
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	6.03
(b) Measured Total Depth (ft)	9.66
(c) Height of Water Column (ft) = b – a	3.63
(d) Casing Diameter (in)	2
(e) Casing Volume (gal) = 0.041 × c × d²	

WELLHEAD CONDITIONS

Casing: ok
Lock:
Standing Water: NO
Comments/Required Maintenance:

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity
1049	8.75	6.10		—	—	—				
1052	↓	6.20		21.18	6.89	1412				
1055		6.20		21.21	6.83	1392				
1058		6.22		21.22	6.76	1332				
1101		6.22		21.22	6.73	1260				
1104		6.22		21.27	6.71	1206				
1107		6.22		21.12	6.68	1147				
1110		6.22		21.09	6.67	1141				
1113	↓	6.22	2 Gls. Total	21.15	6.66	1139				

Sample Time: 1120
Comments:

GROUNDWATER SAMPLING RECORD

Project No.: 189791.0035.1780
Date: 7-29-12
Project Name: 3737
Measured By: Basilio
Weather: cloudy
Page 1 of 1

Well Name: MWT-4
Sample Number:
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	3.93
(b) Measured Total Depth (ft)	9.34
(c) Height of Water Column (ft) = b – a	5.41
(d) Casing Diameter (in)	2
(e) Casing Volume (gal) = 0.041 × c × d²	

WELLHEAD CONDITIONS
Casing: ok
Lock: No
Standing Water: No
Comments/Required Maintenance:

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity
0821	8.50	3.89		~~18.80~~	—	—	—	—	—	—
0824	↓	4.40		18.80	6.49	3394				
0827		4.58		19.31	6.51	3313				
0830		4.73		19.74	6.53	3230				
0833		4.90		19.80	6.55	3233				
0836	↓	5.00	Aprox < 1 gl. Total	19.83	6.55	3237				

Sample Time: 0842

Comments:

TRC

GROUNDWATER SAMPLING RECORD

Project No.: 189791.0035, 1780
Project Name: 3737
Weather: cloudy

Date: 7-29-12
Measured By: Basilio
Page 1 of 1

Well Name: MWT-3
Sample Number:
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	3.44
(b) Measured Total Depth (ft)	9.80
(c) Height of Water Column (ft) = b – a	6.36
(d) Casing Diameter (in)	2
(e) Casing Volume (gal) = 0.041 × c × d²	

WELLHEAD CONDITIONS

Casing: ok
Lock: no
Standing Water: no
Comments/Required Maintenance:

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity
0907	9.70	3.58		–	–	–	–	–	–	–
0910	9.00	3.68		18.94	7.13	2238				
0913	↓	3.77		19.38	7.01	1931				
0916		3.79		19.52	6.91	1620				
0919		3.83		19.70	6.85	1479				
0922		3.88		19.74	6.80	1360				
0925		3.88		19.85	6.77	1307				
0928		3.84		19.86	6.74	1251				
0931		3.84		19.83	6.73	1257				
0934		3.85		19.83	6.72	1263				
0937	↓	3.87	Approx 2 Gls Total	19.85	6.71	1266				

Sample Time: 0944
Comments:

GROUNDWATER SAMPLING RECORD

Project No.: 189791.0035.1780
Project Name: 3737
Weather: cloudy

Date: 7-29-12
Measured By: Banks
Page 1 of 1

Well Name: MWT-2
Sample Number:
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	4.95
(b) Measured Total Depth (ft)	9.60
(c) Height of Water Column (ft) = b – a	4.65
(d) Casing Diameter (in)	2
(e) Casing Volume (gal) = 0.041 × c × d²	

WELLHEAD CONDITIONS

Casing: OK
Lock: no
Standing Water: no
Comments/Required Maintenance:

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity
1008	8.50	5.10		–	–	–	–	–	–	–
1011	↓	5.33		19.81	6.71	1149				
1014		5.40		19.86	6.69	1148				
1017	↓	5.48	< 1 bl. Total	19.89	6.69	1153				

Sample Time: 1024
Comments:

WELL BOX CONDITION REPORT

SITE NO. 3737

ADDRESS 1400 Powell St.

DATE 7-29-12

PERFOMED BY: Bailis

PAGE 1 OF 1

Well Name	Current Well Box Size	# of Ears	# of Stripped Ears	# of Broken Ears	# of Broken Bolts	# of Missing Bolts	Seal Damaged	Missing Lid	Broken Lid	Well Box is Exposed	Well Box Is Below Grade	Unable to Access	Unable to Locate	Foundation Damaged	Paved Over	Street Well	Saw Cut Needed	System Well	USA Marked Well	Comments
MWT-4	8"	2																		
MWT-3	8"	2																		
MWT-2	8"	2																		
MWT-1	8"	2																		
MW 3B	12"	2																		
MW 1B	12"	2												✓						
MW 2B	12"	2																		
MW-1A	12"	2												✓						
MW-3A	12"	2																		
MW-2A	12"	2																		

TRC

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC _____ of _____

Union Oil Site ID:	Union Oil Consultant:
Site Global ID:	Consultant Contact:
Site Address:	Consultant Phone No.:
	Sampling Company: TRC
Union Oil PM:	Sampled By (PRINT):
Union Oil PM Phone No.:	
Charge Code: NWRTB- 0 _ _ _ _ _ -0- LAB	Sampler Signature:
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	**BC Laboratories, Inc.** **Project Manager: Molly Meyers** 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

ANALYSES REQUIRED

Turnaround Time (TAT):
Standard ☐ 24 Hours ☐
48 Hours ☐ 72 Hours ☐

Special Instructions

SAMPLE ID						TPH - Diesel by EPA 8015	TPH - G by GC/MS	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS						Notes / Comments
Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers											
	W-S-A			1130	5	X	X				X	X				
	W-S-A			1044	6	X					X					
	W-S-A			1144	6	X					X					
	W-S-A			1242	6	X					X					
	W-S-A			1220	5			X	X				X			
	W-S-A			1420	5			X	X				X			
	W-S-A			1254	5			X	X				X			
	W-S-A			1436	5			X	X				X			
	W-S-A			1203	5			X	X				X			
	W-S-A			1410	5		V	X	X		V		X			
	W-S-A															
	W-S-A															

Relinquished By	Company	Date / Time:
	TRC	7/2/12

Received By	Company	Date / Time:
	BC Lab	7/3 - 1120

Relinquished By	Company	Date / Time :

Received By	Company	Date / Time :

Relinquished By	Company	Date / Time:

Received By	Company	Date / Time:

TRC SOLUTIONS
TECHNICAL SERVICES REQUEST FORM

26-Jul-12

Site ID:	3737	**Project No.:**	189791.0035.1780 / 00TA01
Address	1400 Powell Street	**Client:**	Roya Kambin
City:	Emeryville	**Contact #:**	925-790-6270
Cross Street	Peladeau Street	**PM:**	Leah Ackerman Arcadis
		PM Contact #:	925-296-7828

Total number of wells: 10 **Min. Well Diameter (in.):** **# of Techs, # of Hrs:** 1, 6
Depth to Water (ft.): **Max. Well Diameter (in.):** **Travel Time (hrs):**
Max. Well Depth (ft): **Hotel PO#:**

ACTIVITIES:	**Frequency**	**Notes**
Gauging:	☑ Quarterly	
Purge/Sampling:	☑ Quarterly	
No Purge/Sampl	☐	

RELATED ACTIVITIES	**Note**	
Drums:	☑	
Other Activities:	☐	
Traffic Control:	☑	MWT-1 thru MWT-4

PERMIT INFORMATION:

NOTIFICATIONS:

Station Owner/Operator: Mr. Najmeddin Ravan, 510-653-2251. He is at the station until noon.

SITE INFORMATION:

The site is currently a Chevron station. It can only be sampled on a Sunday per the access agreement.

Prior to gauging, uncap all wells and allow to equilibrate for 15 minutes.

Well MW-2A does not recharge quickly.
- collect a no purge sample (these will be submitted if the well does not recharge after purging)
- then purge and sample the well
- if the well recharges after purging, please collect post-purge samples (submit these to the laboratory and discard the pre-purge samples)

3Q12 additional wells MWT-1, MWT-2, MTW-3, MTW-4:
Low-flow purging and sampling. TD of wells is no more than 10 feet.
Field parameters during purging: pH, temperature, conductivity
Emily Short, ARCADIS, will meet you at 7:00 AM to begin these wells. Her number is 415-730-8642
Traffic control for these wells will be provided by ARCADIS.

TRC SOLUTIONS

TECHNICAL SERVICES REQUEST FORM

26-Jul-12

Site ID:	3737	**Project No.:**	189791.0035.1780 / 00TA01
Address	1400 Powell Street	**Client:**	Roya Kambin
City:	Emeryville	**Contact #:**	925-790-6270
Cross Street	Peladeau Street	**PM:**	Leah Ackerman Arcadis
		PM Contact #:	925-296-7828

LAB INFORMATION:

Global ID: T06019745736

Lab WO: 351780

Lab Used: BC

Lab Notes: Lab Analyses for MWT-1, MWT-2, MWT-3, MWT-4:
TPH-G by 8260B, BTEX/MTBE by 8260B [Containers: 3 voas w/ HCl]
TPH-Diesel by 8015 w/ silica gel cleanup [Container: one 1L ambers unpreserved]
TPH-Diesel by 8015 [Containers: two 1L ambers unpreserved]

Lab Analyses for all other wells:
TPH-G by 8260B, BTEX/MTBE/OXYS by 8260B, EDB/EDC by 8260B, Ethanol by 8260B [Containers: 3 voas w/ HCl]
TPH-Diesel by 8015 w/ silica gel cleanup, TPH-Motor Oil by 8015 w/ silica gel cleanup [Container: two 1L ambers unpreserved]

TRC SOLUTIONS

TECHNICAL SERVICES REQUEST FORM

26-Jul-12

Site ID.: 3737
Address 1400 Powell Street
City: Emeryville
Cross Street Peladeau Street

			Gauging				Sampling				Field Measurements			
Well IDs	Benz.	MTBE	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Pre-Purge	Post-Purge	Type	Comments
MWT-4			☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MWT-3			☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MWT-2			☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MWT-1			☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-3B	0	0	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-1B	0	0.75	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-2B	0	3	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-1A	18	26	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-3A	45	0.54	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
MW-2A	250	290	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		

ARCADIS

Attachment B

Historical Groundwater Results from Antea

Table 2
Summary of Current Groundwater Analytical Data
Chevron Branded Service Station No. 3737
1400 Powell Street
Emeryville, California

Sample ID	Date	Time	Depth to Water	TOC Elevation	Groundwater Elevation	TPH-G (µg/L)	TPH-D (µg/L)	TPH-MO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TAME (µg/L)	TBA (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	n-Butyl-benzene (µg/L)	sec-Butyl-benzene (µg/L)	Chloroform (µg/L)	Isopropyl-benzene (µg/L)	p-Isopropyl-toluene (µg/L)	Napthalene (µg/L)	n-Propyl-benzene (µg/L)	1,2,4-Trimethyl-benzene (µg/L)	1,3,5 Trimethyl-benzene (µg/L)
MW-1A	1/26/2011	2:20	5.8	18.743	12.94	**960**	**450** A52	<200	**8.4**	<0.50	**1.9**	**1.6**	**50**	**1.4**	**62**	<0.50	<250	<0.50	<0.50	<0.50	**2.2**	**1.2**	<0.50	**4.2**	**1.8**	**1.8**	**7.3**	**1.0**	**1.2**
MW-1B	1/26/2011	1:20	9.46	18.884	9.42	<50	<50	<200	<0.50	<0.50	<0.50	<1.0	**0.66**	<0.50	<10	<0.50	<250	<0.50	<0.50	**24**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-2A	1/26/2011	10:33	8.02	18.925	10.91	**2,500**	**1,200**	<1000	**100**	**2.2**	**28**	**9.0**	**140**	<0.50	**1,300**	<0.50	<250	<0.50	<0.50	<0.50	**6.6**	**3.9**	**2.5**	**14**	**7.6**	**17**	**23**	**2.5**	**2.4**
MW-2B	1/26/2011	2:10	5.51	19.099	13.59	<50	<50	<200	**0.55**	<0.50	<0.50	<1.0	**3.4**	<0.50	<10	<0.50	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3A	1/26/2011	2:30	4.75	18.616	13.87	**3,100**	**830**	<200	**160**	<5.0	**96**	<10	<5.0	<5.0	<100	<5.0	<2500	<5.0	<5.0	<5.0	<5.0	**6.2**	<5.0	**40**	**9.2**	<5.0	**54**	<5.0	<5.0
MW-3B	1/26/2011	1:35	7.33	18.571	11.24	<50	**57**	<200	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<10	<0.50	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
COMP	1/26/2011	1:15	NA	NA	NA	**1,200**	**350**	<200	**13**	**0.57**	**5.4**	**1.5**	**6.0**	<0.50	**92**	<0.50	**15,000**	<0.50	<0.50	**3.6**	**5.3**	**2.3**	<0.50	**4.0**	**2.9**	**5.6**	**8.4**	**0.60**	**0.52**
ESL	--	--	--	--	--	100	100	100	1	40	30	20	5	NA	12	NA	NA	NA	0.05	0.5	NA	NA	70	NA	NA	17	NA	NA	NA

Notes:

Depth to water measured in feet below top of casing
Groundwtaer elevation measured in feet above mean sea level
Bold concentrations indicate detection above laboratory reporting limit

(µg/L)	micrograms per liter
TPH-D	Total Petroleum Hydrocarbons as Diesel
TPH-MO	Total Petroleum Hydrocarbons as Motor Oil
TPH-G	Total Petroleum Hydrocarbons as Gasoline
MTBE	methyl tertiary butyl ether
TBA	tertiary buty alcohol
ETBE	ethyl tertiary butyl ether
DIPE	di-isopropyl ether
TAME	tertiary amyl ethyl ether
EDB	ethylene dibromide
1,2-DCA	1,2-dichloroethane
ESL	Regional Water Quality Control Board - San Francisco Region Environmental Screening Level
A52	Data Qualifier: Chromatogram not typical of diesel

ESL based on residential land use, shallow soil, and groundwater as a potential drinking resource.
TPH-D and TPH-MO analysis by Environmental Protection Agency (EPA) Test Method 8015 with Silica Gel Cleanup
All other analyses by EPA Method 8260B.
Samples were analyzed for a full VOC Scan by EPA Method 8260B with oxygenates and lead scavengers. All Oxygenates and lead scavenger data are summarized, only VOCs with detections are presented in table.
Data qualifiers regarding sample dilution, surrogate recovery, or quality control are not presented in table. Please refer to laboratory reports for full explanation of qualifiers.

ARCADIS

Attachment C

Laboratory Report and Chain-of-Custody Documentation

Date of Report: 08/10/2012

Leah Ackerman

Arcadis
2999 Oak Rd, Suite 300
Walnut Creek, CA 94597

Project: 3737
BC Work Order: 1214106
Invoice ID: B127493

Enclosed are the results of analyses for samples received by the laboratory on 7/31/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Authorized Signature

Table of Contents

Table of Contents

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

CHK BY	DISTRIBUTION
MM	SUB-OUT ☐

12-14106

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 1 of 1

Union Oil Site ID: 3737	Union Oil Consultant: Arcadis
Site Global ID: T0600197457736	Consultant Contact: Leah Ackerman
Site Address: 1400 Powell St. Emeryville	Consultant Phone No.: 925-296-7828
	Sampling Company: TRC
Union Oil PM: Roya Kambin	Sampled By (PRINT): Baulio
Union Oil PM Phone No.:	Sampler Signature: [signature]
Charge Code: NWRTB- 0 351780 -0- LAB	BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.

ANALYSES REQUIRED

Turnaround Time (TAT): Standard ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐

Special Instructions

SAMPLE ID

	Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by ~~GCMS~~ 8260B	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B, EDB/EDC by 8260B	EPA 8260B Full List with OXYS	BTEX/MTBE by 8260B	TPH-Diesel by 8015 w/silica gel clean-up	TPH-Motor Oil by 8015 w/silica gel clean-up				Notes / Comments
1	MWT-1	(W)-S-A		12-07-29	1120	5	X	X				X	X					
2	MWT-2	W-S-A		↓	1024	6	X	↓				X	↓					
3	MWT-3	W-S-A		↓	0944	6	X	↓				X	↓					
4	MWT-4	W-S-A		↓	0842	6	X	↓				X	↓					
5	MW-1a	W-S-A		↓	1220	5		↓	X	X			↓	X				
6	MW-1B	W-S-A		↓	1420	5		↓	X	X			↓	X				
7	MW-2a	W-S-A		↓	1254	5		↓	X	X			↓	X				
8	MW-2B	W-S-A		↓	1436	5		↓	X	X			↓	X				
9	MW-3A	W-S-A		↓	1203	5		↓	X	X			↓	X				
10	MW-3B	W-S-A		↓	1410	5		↓	X	X			↓	X				
		W-S-A																
		W-S-A																

Relinquished By	Company	Date / Time	Relinquished By	Company	Date / Time	Relinquished By	Company	Date / Time
[signature]	TRC	7/29/12 Placed samples refrigerator 1600	Gary Bogan	BC LAB	7-31-12 1830	R C Ruy	BCL	7.31.12 2130
Received By	**Company**	**Date / Time**	**Received By**	**Company**	**Date / Time**	**Received By**	**Company**	**Date / Time**
Gary Bogan	BC LAB	7-31-12 1420	R C Ruy	BCL	7.31.12 1830	KOM	BCL	7-31-12 2130

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1214106 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 12 12/30/10 Page 1 Of 2

Submission #: 12-14106

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: QtA Thermometer ID: 177

Temperature: (A) 0.4 °C / (C) 0.2 °C

Date/Time 7-31-12

Analyst Init JDW 2130

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER	B,C	BCD	B A	B						
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:_____

Sample Numbering Completed By:_____ Date/Time: 8/1/12 0530

A = Actual / C = Corrected

I:\MyDOCS\WordPerfect\LAB_DOCS\FORMS\SAMREC2I

Chain of Custody and Cooler Receipt Form for 1214106 Page 3 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 12 12/30/10 Page 2 of 2

Submission #: 12-14106

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: QtA Thermometer ID: 177

Temperature: [A] 2.5 °C / [C] 2.3 °C

Date/Time 7-31-12 2130

Analyst Init JDW

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER			D	CD	BC	BC	BC	BC	BC	BC
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:_____

Sample Numbering Completed By: _____ Date/Time: 8/1/12 0530

A = Actual / C = Corrected

I:\MyDOCS\WordPerfect\LAB_DOCS\FORMS\SAMREC2)

Arcadis
2999 Oak Rd, Suite 300
Walnut Creek, CA 94597

Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1214106-01	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 11:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MWT-1-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T06019745736			
	Location ID (FieldPoint): MWT-1			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1214106-02	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 10:24
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MWT-2-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T06019745736			
	Location ID (FieldPoint): MWT-2			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1214106-03	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 09:44
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MWT-3-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T06019745736			
	Location ID (FieldPoint): MWT-3			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis
2999 Oak Rd, Suite 300
Walnut Creek, CA 94597

Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1214106-04	**COC Number:**	---	**Receive Date:** 07/31/2012 21:30
	Project Number:	3737	**Sampling Date:** 07/29/2012 08:42
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MWT-4-W-120729	**Lab Matrix:** Water
	Sampled By:	TRCI	**Sample Type:** Water
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MWT-4
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1214106-05	**COC Number:**	---	**Receive Date:** 07/31/2012 21:30
	Project Number:	3737	**Sampling Date:** 07/29/2012 12:20
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1A-W-120729	**Lab Matrix:** Water
	Sampled By:	TRCI	**Sample Type:** Water
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-1A
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1214106-06	**COC Number:**	---	**Receive Date:** 07/31/2012 21:30
	Project Number:	3737	**Sampling Date:** 07/29/2012 14:20
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1B-W-120729	**Lab Matrix:** Water
	Sampled By:	TRCI	**Sample Type:** Water
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-1B
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Arcadis
2999 Oak Rd, Suite 300
Walnut Creek, CA 94597

Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1214106-07	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 12:54
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-2A-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
			Delivery Work Order:	
			Global ID: T06019745736	
			Location ID (FieldPoint): MW-2A	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1214106-08	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 14:36
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-2B-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
			Delivery Work Order:	
			Global ID: T06019745736	
			Location ID (FieldPoint): MW-2B	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1214106-09	**COC Number:**	---	**Receive Date:**	07/31/2012 21:30
	Project Number:	3737	**Sampling Date:**	07/29/2012 12:03
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-3A-W-120729	**Lab Matrix:**	Water
	Sampled By:	TRCI	**Sample Type:**	Water
			Delivery Work Order:	
			Global ID: T06019745736	
			Location ID (FieldPoint): MW-3A	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information

1214106-10

COC Number: ---
Project Number: 3737
Sampling Location: ---
Sampling Point: MW-3B-W-120729
Sampled By: TRCI

Receive Date: 07/31/2012 21:30
Sampling Date: 07/29/2012 14:10
Sample Depth: ---
Lab Matrix: Water
Sample Type: Water
Delivery Work Order:
Global ID: T06019745736
Location ID (FieldPoint): MW-3B
Matrix: W
Sample QC Type (SACode): CS
Cooler ID:

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-01 | **Client Sample Name:** 3737, MWT-1-W-120729, 7/29/2012 11:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**7.7**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Ethylbenzene	**3.5**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Methyl t-butyl ether	**31**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	**2.3**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Total Xylenes	**6.3**	**ug/L**	**1.0**	**EPA-8260**	ND		1
t-Butyl alcohol	**71**	**ug/L**	**10**	**EPA-8260**	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**2500**	**ug/L**	**250**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	107	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	99.6	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	109	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	99.6	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	126	%	80 - 120 (LCL - UCL)	EPA-8260		S09	1
4-Bromofluorobenzene (Surrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 14:41	JMC	MS-V12	1	BVH0130
2	EPA-8260	08/01/12	08/01/12 18:29	JMC	MS-V12	5	BVH0130

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Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1214106-01 | **Client Sample Name:** 3737, MWT-1-W-120729, 7/29/2012 11:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**1100**	**ug/L**	**200**	**EPA-8015B/TPHd**	ND	**A01,A52**	1
Tetracosane (Surrogate)	97.4	%	30 - 150 (LCL - UCL)	EPA-8015B/TPHd		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/02/12	08/09/12 00:00	MK1	GC-5	4.950	BVH0592

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Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-01 | **Client Sample Name:** 3737, MWT-1-W-120729, 7/29/2012 11:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**450**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	88.3	%	28 - 139 (LCL - UCL)	EPA-8015B/TPHd			1
Capric acid (Reverse Surrogate)	0	%	0 - 2 (LCL - UCL)	EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/03/12	08/08/12 22:42	MK1	GC-5	1	BVH0608

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-02 | **Client Sample Name:** 3737, MWT-2-W-120729, 7/29/2012 10:24:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**70**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Ethylbenzene	**62**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Methyl t-butyl ether	**11**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	**1.6**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Total Xylenes	**8.8**	**ug/L**	**1.0**	**EPA-8260**	ND		1
t-Butyl alcohol	**89**	**ug/L**	**10**	**EPA-8260**	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**3000**	**ug/L**	**250**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	99.3	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	104	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	127	%	80 - 120 (LCL - UCL)	EPA-8260		S09	1
4-Bromofluorobenzene (Surrogate)	112	%	80 - 120 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 14:24	JMC	MS-V12	1	BVG2132
2	EPA-8260	08/01/12	08/01/12 18:11	JMC	MS-V12	5	BVG2132

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Project: 3737
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Total Petroleum Hydrocarbons

BCL Sample ID: 1214106-02 | **Client Sample Name:** 3737, MWT-2-W-120729, 7/29/2012 10:24:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**780**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	85.7	%	30 - 150 (LCL - UCL)	EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/02/12	08/08/12 19:59	MK1	GC-5	1	BVH0592

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Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-02 | **Client Sample Name:** 3737, MWT-2-W-120729, 7/29/2012 10:24:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	40	EPA-8015B/TPHd	ND	A52	1
Tetracosane (Surrogate)	7.2	%	28 - 139 (LCL - UCL)	EPA-8015B/TPHd		S09	1
Capric acid (Reverse Surrogate)	0	%	0 - 2 (LCL - UCL)	EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/03/12	08/09/12 00:43	MK1	GC-5	1	BVH0608

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-03 | **Client Sample Name:** 3737, MWT-3-W-120729, 7/29/2012 9:44:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.3**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Ethylbenzene	**0.63**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Methyl t-butyl ether	**1.9**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	**0.65**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Total Xylenes	**2.4**	**ug/L**	**1.0**	**EPA-8260**	ND		1
t-Butyl alcohol	**17**	**ug/L**	**10**	**EPA-8260**	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**2100**	**ug/L**	**250**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	116	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 14:06	JMC	MS-V12	1	BVG2132
2	EPA-8260	08/01/12	08/01/12 17:54	JMC	MS-V12	5	BVG2132

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Project: 3737
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Total Petroleum Hydrocarbons

BCL Sample ID: 1214106-03 | **Client Sample Name:** 3737, MWT-3-W-120729, 7/29/2012 9:44:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**900**	**ug/L**	**200**	**EPA-8015B/TPHd**	ND	**A01,A52**	1
Tetracosane (Surrogate)	100	%	30 - 150 (LCL - UCL)	EPA-8015B/TPHd		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/02/12	08/09/12 00:14	MK1	GC-5	5	BVH0592

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Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-03 | **Client Sample Name:** 3737, MWT-3-W-120729, 7/29/2012 9:44:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**640**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	122	%	28 - 139 (LCL - UCL)	EPA-8015B/TPHd			1
Capric acid (Reverse Surrogate)	0	%	0 - 2 (LCL - UCL)	EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/03/12	08/08/12 23:08	MK1	GC-5	1	BVH0608

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-04 | **Client Sample Name:** 3737, MWT-4-W-120729, 7/29/2012 8:42:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**530**	**ug/L**	**6.2**	**EPA-8260**	ND	**A01**	1
Ethylbenzene	**100**	**ug/L**	**6.2**	**EPA-8260**	ND	**A01**	1
Methyl t-butyl ether	**0.78**	**ug/L**	**0.50**	**EPA-8260**	ND		2
Toluene	**5.8**	**ug/L**	**0.50**	**EPA-8260**	ND		2
Total Xylenes	**61**	**ug/L**	**1.0**	**EPA-8260**	ND		2
t-Butyl alcohol	**560**	**ug/L**	**10**	**EPA-8260**	ND		2
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**2800**	**ug/L**	**620**	**Luft-GC/MS**	ND	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	96.8	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	97.6	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	107	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	128	%	80 - 120 (LCL - UCL)	EPA-8260		S09	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 17:36	JMC	MS-V12	12.500	BVG2132
2	EPA-8260	08/01/12	08/01/12 13:49	JMC	MS-V12	1	BVG2132

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1214106-04 | **Client Sample Name:** 3737, MWT-4-W-120729, 7/29/2012 8:42:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**1500**	**ug/L**	**200**	**EPA-8015B/TPHd**	ND	**A01,A52**	1
Tetracosane (Surrogate)	109	%	30 - 150 (LCL - UCL)	EPA-8015B/TPHd		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/02/12	08/09/12 00:28	MK1	GC-5	4.800	BVH0592

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-04 | **Client Sample Name:** 3737, MWT-4-W-120729, 7/29/2012 8:42:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**690**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	88.5	%	28 - 139 (LCL - UCL)	EPA-8015B/TPHd			1
Capric acid (Reverse Surrogate)	0	%	0 - 2 (LCL - UCL)	EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/03/12	08/08/12 23:20	MK1	GC-5	1	BVH0608

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-05 | **Client Sample Name:** 3737, MW-1A-W-120729, 7/29/2012 12:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**10**	**ug/L**	**0.50**	**EPA-8260**	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	**0.80**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Methyl t-butyl ether	**35**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	**1.9**	**ug/L**	**1.0**	**EPA-8260**	ND		1
t-Amyl Methyl ether	**1.2**	**ug/L**	**0.50**	**EPA-8260**	ND		1
t-Butyl alcohol	**80**	**ug/L**	**10**	**EPA-8260**	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**1400**	**ug/L**	**50**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	108	%	80 - 120 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 13:31	JMC	MS-V12	1	BVG2132

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-05 | **Client Sample Name:** 3737, MW-1A-W-120729, 7/29/2012 12:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**220**	**ug/L**	**40**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND	A57	1
Tetracosane (Surrogate)	83.5	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 00:06	MWB	GC-13	1	BVH0624

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-06 | **Client Sample Name:** 3737, MW-1B-W-120729, 7/29/2012 2:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	**27**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	**0.72**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	99.3	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	97.1	%	80 - 120 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 13:14	JMC	MS-V12	1	BVG2132

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-06 | **Client Sample Name:** 3737, MW-1B-W-120729, 7/29/2012 2:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	ND	ug/L	40	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	91.7	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 00:28	MWB	GC-13	1	BVH0624

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Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-07 | **Client Sample Name:** 3737, MW-2A-W-120729, 7/29/2012 12:54:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**120**	**ug/L**	**2.5**	**EPA-8260**	ND	**A01**	1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		2
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		2
Ethylbenzene	**12**	**ug/L**	**0.50**	**EPA-8260**	ND		2
Methyl t-butyl ether	**280**	**ug/L**	**2.5**	**EPA-8260**	ND	**A01**	1
Toluene	**1.9**	**ug/L**	**0.50**	**EPA-8260**	ND		2
Total Xylenes	**1.4**	**ug/L**	**1.0**	**EPA-8260**	ND		2
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260	ND		2
t-Butyl alcohol	**2300**	**ug/L**	**10**	**EPA-8260**	ND		2
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		2
Ethanol	ND	ug/L	250	EPA-8260	ND		2
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		2
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**1900**	**ug/L**	**50**	**Luft-GC/MS**	ND		2
1,2-Dichloroethane-d4 (Surrogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	99.1	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	98.7	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 17:19	JMC	MS-V12	5	BVG2132
2	EPA-8260	08/01/12	08/01/12 12:57	JMC	MS-V12	1	BVG2132

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Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-07 | **Client Sample Name:** 3737, MW-2A-W-120729, 7/29/2012 12:54:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**310**	**ug/L**	**40**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND	A57	1
Tetracosane (Surrogate)	92.3	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 00:50	MWB	GC-13	1	BVH0624

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Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-08 | **Client Sample Name:** 3737, MW-2B-W-120729, 7/29/2012 2:36:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	**2.1**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	100	%	75 - 125 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	97.7	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	98.2	%	80 - 120 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 12:39	JMC	MS-V12	1	BVG2132

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Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-08 | **Client Sample Name:** 3737, MW-2B-W-120729, 7/29/2012 2:36:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	ND	ug/L	40	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	87.2	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 01:13	MWB	GC-13	1	BVH0624

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-09 | **Client Sample Name:** 3737, MW-3A-W-120729, 7/29/2012 12:03:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**77**	**ug/L**	**0.50**	**EPA-8260**	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	**0.94**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Ethylbenzene	**14**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	**2.1**	**ug/L**	**0.50**	**EPA-8260**	ND		1
Total Xylenes	**2.2**	**ug/L**	**1.0**	**EPA-8260**	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**1900**	**ug/L**	**250**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	112	%	75 - 125 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	99.6	%	75 - 125 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	110	%	80 - 120 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	118	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	108	%	80 - 120 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 12:22	JMC	MS-V12	1	BVG2132
2	EPA-8260	08/01/12	08/01/12 17:01	JMC	MS-V12	5	BVG2132

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Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-09 | **Client Sample Name:** 3737, MW-3A-W-120729, 7/29/2012 12:03:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**160**	**ug/L**	**40**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND	A57	1
Tetracosane (Surrogate)	81.8	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 01:35	MWB	GC-13	1	BVH0624

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Project: 3737
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Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1214106-10 | **Client Sample Name:** 3737, MW-3B-W-120729, 7/29/2012 2:10:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	99.7	%	80 - 120 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	08/01/12	08/01/12 12:04	JMC	MS-V12	1	BVG2132

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Reported: 08/10/2012 10:07
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Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1214106-10 | **Client Sample Name:** 3737, MW-3B-W-120729, 7/29/2012 2:10:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	ND	ug/L	40	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	ug/L	100	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	54.8	%	37 - 134 (LCL - UCL)	EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	08/03/12	08/09/12 01:58	MWB	GC-13	1	BVH0624

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVG2132						
Benzene	BVG2132-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BVG2132-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BVG2132-BLK1	ND	ug/L	0.50		
Ethylbenzene	BVG2132-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BVG2132-BLK1	ND	ug/L	0.50		
Toluene	BVG2132-BLK1	ND	ug/L	0.50		
Total Xylenes	BVG2132-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BVG2132-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BVG2132-BLK1	ND	ug/L	10		
Diisopropyl ether	BVG2132-BLK1	ND	ug/L	0.50		
Ethanol	BVG2132-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BVG2132-BLK1	ND	ug/L	0.50		
Total Purgeable Petroleum Hydrocarbons (C6-(	BVG2132-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BVG2132-BLK1	102	%	75 - 125 (LCL - UCL)		
Toluene-d8 (Surrogate)	BVG2132-BLK1	102	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BVG2132-BLK1	95.5	%	80 - 120 (LCL - UCL)		
QC Batch ID: BVH0130						
Benzene	BVH0130-BLK1	ND	ug/L	0.50		
Ethylbenzene	BVH0130-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BVH0130-BLK1	ND	ug/L	0.50		
Toluene	BVH0130-BLK1	ND	ug/L	0.50		
Total Xylenes	BVH0130-BLK1	ND	ug/L	1.0		
t-Butyl alcohol	BVH0130-BLK1	ND	ug/L	10		
Total Purgeable Petroleum Hydrocarbons (C6-(	BVH0130-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BVH0130-BLK1	106	%	75 - 125 (LCL - UCL)		
Toluene-d8 (Surrogate)	BVH0130-BLK1	99.3	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BVH0130-BLK1	97.6	%	80 - 120 (LCL - UCL)		

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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVG2132										
Benzene	BVG2132-BS1	LCS	24.620	25.000	ug/L	98.5		70 - 130		
Toluene	BVG2132-BS1	LCS	22.810	25.000	ug/L	91.2		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BVG2132-BS1	LCS	10.100	10.000	ug/L	101		75 - 125		
Toluene-d8 (Surrogate)	BVG2132-BS1	LCS	10.040	10.000	ug/L	100		80 - 120		
4-Bromofluorobenzene (Surrogate)	BVG2132-BS1	LCS	10.660	10.000	ug/L	107		80 - 120		
QC Batch ID: BVH0130										
Benzene	BVH0130-BS1	LCS	27.780	25.000	ug/L	111		70 - 130		
Toluene	BVH0130-BS1	LCS	27.250	25.000	ug/L	109		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BVH0130-BS1	LCS	9.9700	10.000	ug/L	99.7		75 - 125		
Toluene-d8 (Surrogate)	BVH0130-BS1	LCS	9.7800	10.000	ug/L	97.8		80 - 120		
4-Bromofluorobenzene (Surrogate)	BVH0130-BS1	LCS	10.740	10.000	ug/L	107		80 - 120		

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Project: 3737
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Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVG2132	Used client sample: N										
Benzene	MS	1213312-26	ND	26.700	25.000	ug/L		107		70 - 130	
	MSD	1213312-26	ND	25.540	25.000	ug/L	4.4	102	20	70 - 130	
Toluene	MS	1213312-26	ND	25.010	25.000	ug/L		100		70 - 130	
	MSD	1213312-26	ND	24.780	25.000	ug/L	0.9	99.1	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1213312-26	ND	10.000	10.000	ug/L		100		75 - 125	
	MSD	1213312-26	ND	9.5800	10.000	ug/L	4.3	95.8		75 - 125	
Toluene-d8 (Surrogate)	MS	1213312-26	ND	9.9300	10.000	ug/L		99.3		80 - 120	
	MSD	1213312-26	ND	10.040	10.000	ug/L	1.1	100		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1213312-26	ND	10.440	10.000	ug/L		104		80 - 120	
	MSD	1213312-26	ND	10.850	10.000	ug/L	3.9	108		80 - 120	
QC Batch ID: BVH0130	Used client sample: N										
Benzene	MS	1214103-01	ND	30.900	25.000	ug/L		124		70 - 130	
	MSD	1214103-01	ND	30.200	25.000	ug/L	2.3	121	20	70 - 130	
Toluene	MS	1214103-01	ND	29.360	25.000	ug/L		117		70 - 130	
	MSD	1214103-01	ND	28.740	25.000	ug/L	2.1	115	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1214103-01	ND	9.9300	10.000	ug/L		99.3		75 - 125	
	MSD	1214103-01	ND	9.8100	10.000	ug/L	1.2	98.1		75 - 125	
Toluene-d8 (Surrogate)	MS	1214103-01	ND	10.280	10.000	ug/L		103		80 - 120	
	MSD	1214103-01	ND	9.9500	10.000	ug/L	3.3	99.5		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1214103-01	ND	11.000	10.000	ug/L		110		80 - 120	
	MSD	1214103-01	ND	10.460	10.000	ug/L	5.0	105		80 - 120	

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Project: 3737
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Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVH0624						
TPH - Diesel (FFP)	BVH0624-BLK1	ND	ug/L	40		
TPH - Motor Oil	BVH0624-BLK1	ND	ug/L	100		
Tetracosane (Surrogate)	BVH0624-BLK1	88.6	%	37 - 134 (LCL - UCL)		

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Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVH0624										
TPH - Diesel (FFP)	BVH0624-BS1	LCS	337.12	500.00	ug/L	67.4		52 - 128		
Tetracosane (Surrogate)	BVH0624-BS1	LCS	22.809	20.000	ug/L	114		37 - 134		

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Reported: 08/10/2012 10:07
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVH0624	Used client sample: N										
TPH - Diesel (FFP)	MS	1213312-46	ND	300.48	500.00	ug/L		60.1		50 - 127	
	MSD	1213312-46	ND	313.07	500.00	ug/L	4.1	62.6	24	50 - 127	
Tetracosane (Surrogate)	MS	1213312-46	ND	19.343	20.000	ug/L		96.7		37 - 134	
	MSD	1213312-46	ND	20.324	20.000	ug/L	4.9	102		37 - 134	

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Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVH0592						
Diesel Range Organics (C12 - C24)	BVH0592-BLK1	ND	ug/L	40		
Tetracosane (Surrogate)	BVH0592-BLK1	121	%	30 - 150 (LCL - UCL)		

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Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVH0592										
Diesel Range Organics (C12 - C24)	BVH0592-BS1	LCS	423.42	500.00	ug/L	84.7		50 - 140		
Tetracosane (Surrogate)	BVH0592-BS1	LCS	21.255	20.000	ug/L	106		30 - 150		

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Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVH0592	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	1210608-96	ND	489.97	500.00	ug/L		98.0		50 - 140	
	MSD	1210608-96	ND	350.42	500.00	ug/L	33.2	70.1	30	50 - 140	Q02
Tetracosane (Surrogate)	MS	1210608-96	ND	23.775	20.000	ug/L		119		30 - 150	
	MSD	1210608-96	ND	18.466	20.000	ug/L	25.1	92.3		30 - 150	

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Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVH0608						
Diesel Range Organics (C12 - C24)	BVH0608-BLK1	ND	ug/L	40		
Tetracosane (Surrogate)	BVH0608-BLK1	93.6	%	28 - 139 (LCL - UCL)		
Capric acid (Reverse Surrogate)	BVH0608-BLK1		%	0 - 2 (LCL - UCL)		

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Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVH0608										
Diesel Range Organics (C12 - C24)	BVH0608-BS1	LCS	253.11	500.00	ug/L	50.6		48 - 125		
Tetracosane (Surrogate)	BVH0608-BS1	LCS	16.751	20.000	ug/L	83.8		28 - 139		
Capric acid (Reverse Surrogate)	BVH0608-BS1	LCS	ND	100.00	ug/L			0 - 2		

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Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVH0608	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	1213312-47	ND	221.87	500.00	ug/L		44.4		36 - 130	
	MSD	1213312-47	ND	296.41	500.00	ug/L	28.8	59.3	30	36 - 130	
Tetracosane (Surrogate)	MS	1213312-47	ND	14.174	20.000	ug/L		70.9		28 - 139	
	MSD	1213312-47	ND	22.030	20.000	ug/L	43.4	110		28 - 139	
Capric acid (Reverse Surrogate)	MS	1213312-47	ND	ND	100.00	ug/L				0 - 2	
	MSD	1213312-47	ND	ND	100.00	ug/L				0 - 2	

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Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A52	Chromatogram not typical of diesel.
A57	Chromatogram not typical of motor oil.
Q02	Matrix spike precision is not within the control limits.
S09	The surrogate recovery on the sample for this compound was not within the control limits.