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Timothy L. Bishop, P.G.
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6463
TimBishop@chevron.com

July 30, 2013

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

RE: Second Quarter 2013 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) 790-6463.

Sincerely,

Tim Bishop
Union Oil of California – Project Manager

Attachment
Second Quarter 2013 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:
Second Quarter 2013 Groundwater Monitoring Report

Date:
July 30, 2013

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. Tim Bishop, EMC (electronic copy)
Mr. Najmeddin Revan, Property Owner

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
SECOND QUARTER 2013
JULY 30, 2013

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 (ACEH)/ Mr. Mark Detterman / Case No. RO 0000067

WORK PERFORMED DURING THIS REPORTING PERIOD (Second Quarter – 2013) :

1. TRC Solutions (TRC) conducted groundwater monitoring and sampling on April 7, 2013. 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 and EPA Method 8015; 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; and total petroleum hydrocarbons as diesel (TPH-d).

   As part of a natural attenuation evaluation, groundwater samples collected from wells MW-1A, MW-2A, MW-3A, and MW-3B were also analyzed for dissolved iron, dissolved manganese by EPA Method 200.7; nitrate and sulfate by EPA Method 300.0, nitrite by EPA Method 353.2.

   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.**

WORK PROPOSED FOR THE NEXT REPORTING PERIOD (None):

1. Groundwater monitoring suspended as site is under closure review.

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; 1Q and 3Q)
Frequency of Monitoring:	Groundwater – Quarterly (MW-1A through MW-3A), Semiannually (All monitoring wells; 1Q and 3Q)
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
Water Wells or Surface Waters within a 2000' Radius and Their Respective Directions:	None

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
SECOND QUARTER 2013
JULY 30, 2013

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

Groundwater Use Designation:	Non-drinking water
Current Remediation Techniques:	None
Permits for Discharge (No.):	None
Approximate Depth to Groundwater:	Shallow Zone: 4.55 (MW-3A) – 6.85 (MW-2A) feet below top of casing Deep Zone: 5.52 (MW-2B) – 6.48 (MW-1B) feet below top of casing
Approximate Groundwater Elevation:	Shallow Zone: 12.08 (MW-2A) – 14.07 (MW-3A) feet above mean sea level Deep Zone: 12.40 (MW-1B) – 13.581 (MW-2B) feet above mean sea level Measured X Estimated

Groundwater Gradient (Shallow Zone):	0.09 ft/ft	(Magnitude)	West-northwest	(Direction)
Groundwater Gradient (Deep Zone):	0.04 ft/ft	(Magnitude)	South	(Direction)

DISCUSSION:

Groundwater conditions at the six (6) monitoring wells sampled during the second quarter 2013 remained generally consistent with previous quarters. The maximum concentration of TPH-d (2,100 micrograms per liter [µg/L]), TPH-g (1,800 µg/L analyzed by Method 8260B and 2,300 µg/L analyzed by Method 8015), benzene (360 µg/L), ethylbenzene (15 µg/L), MTBE (250 µg/L), and TBA (3,000 µg/L) were detected in the samples collected from MW-2A. TPH-g was analyzed using two different analytical methods including use of two separate vials by the laboratory for analysis. Sample homogeneity and method difference are attributed to the slight difference in analytical results for TPH-g. The maximum concentration of toluene (1.1 µg/L) was detected in the samples collected from MW-3A.The maximum concentration of total xylenes (5.9 µg/L) was detected in the samples collected from MW-1A. The maximum concentration of EDC (11 µg/L) was detected in the samples collected from MW-1B. EDB, DIPE, ETBE, TAME, 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 foot and create a hydraulic gradient of 0.09 foot per foot in the west direction. Groundwater elevations across the site in the deeper water-bearing zone vary by approximately one foot and create a hydraulic gradient of 0.04 foot per foot in the south direction.

CONCLUSIONS AND RECOMMENDATIONS:

Dissolved hydrocarbon constituent concentrations are generally decreasing and are expected to continue to decrease over time. A Conceptual Site Model and Request for Low-Threat Closure (CSM) was submitted on March 21, 2013. As presented in the CSM, ARCADIS recommends this site for low threat closure. ACEH indicated that the site is currently under closure review in a letter dated June 24, 2013. Therefore, groundwater monitoring has been suspended for this site pending closure review.

UNION OIL OF CALIFORNIA
QUARTERLY MONITORING REPORT
SECOND QUARTER 2013
JULY 30, 2013

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

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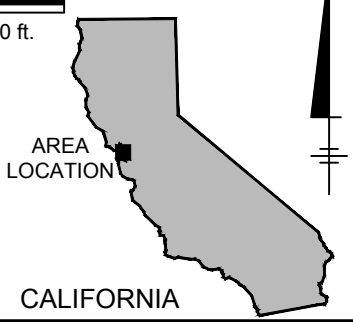
Figures

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
- APPROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP

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

SITE PLAN

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FIGURE 2

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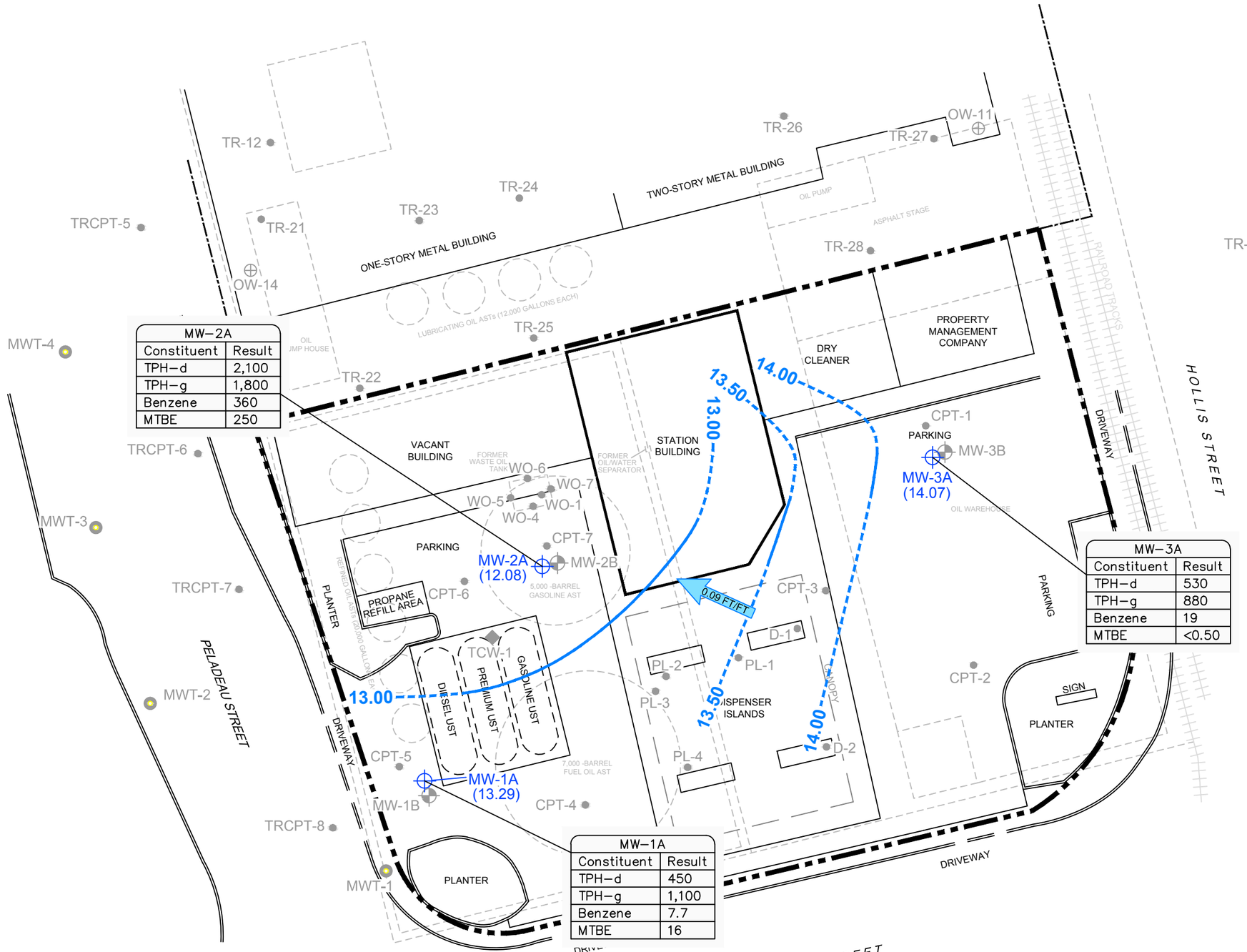

MW–2A	
Constituent	Result
TPH–d	2,100
TPH–g	1,800
Benzene	360
MTBE	250

MW–3A	
Constituent	Result
TPH–d	530
TPH–g	880
Benzene	19
MTBE	<0.50

MW–1A	
Constituent	Result
TPH–d	450
TPH–g	1,100
Benzene	7.7
MTBE	16

LEGEND

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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)
- (13.29) — GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (MSL)
- 0.09 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) APRIL 7, 2013

ARCADIS

FIGURE 3

CITY: PETALUMA_CA DIV/GROUP: ENV DB: J. HARRIS, E. MURESAN, J. HARRIS
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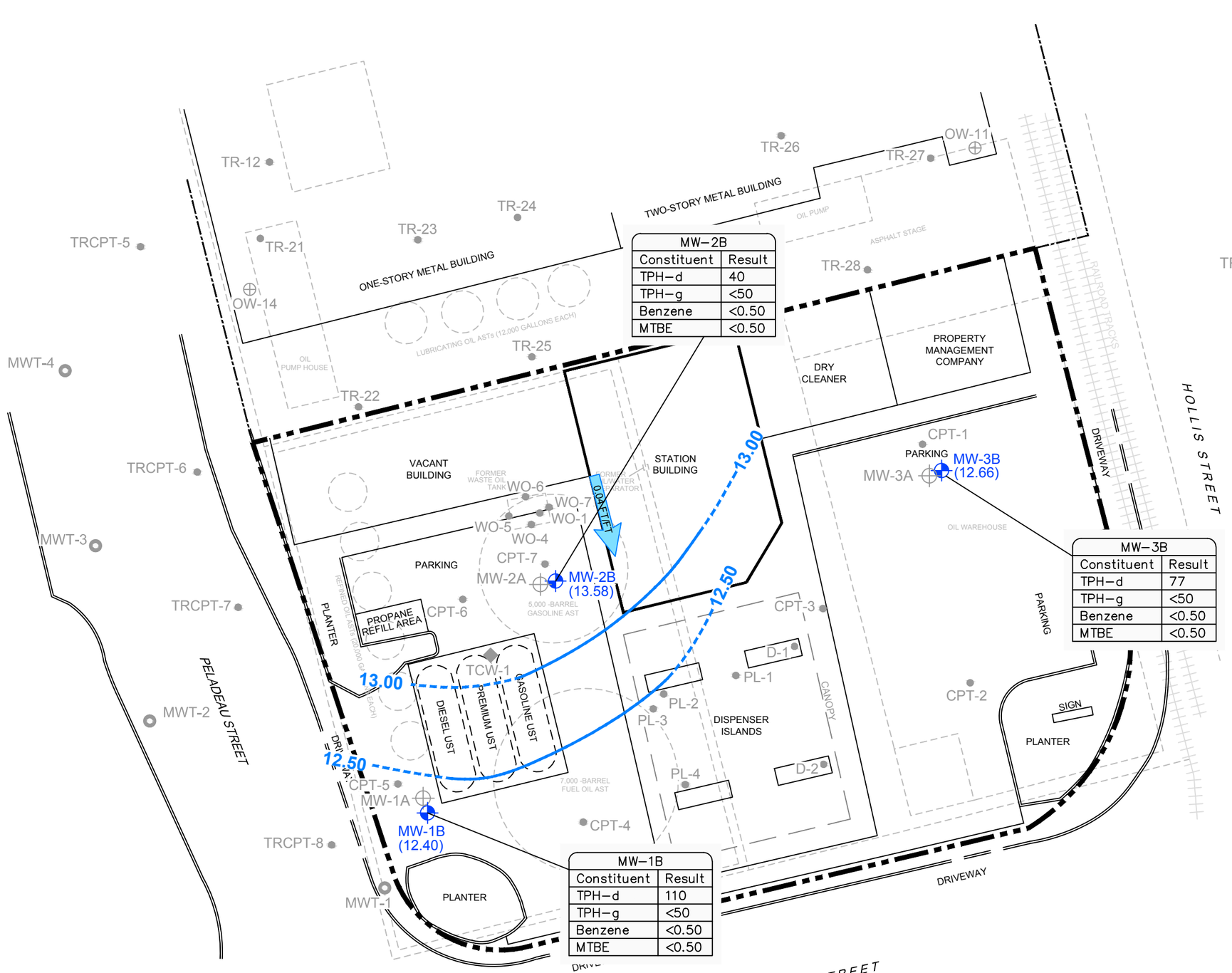

LEGEND

- PROPERTY BOUNDARY
- LOT LINE
- MW-1A — MONITORING WELL LOCATION (SHALLOW ZONE)
- MW-1B — MONITORING WELL LOCATION (DEEP ZONE)
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- 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)
- (12.40) — 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) APRIL 7, 2013

ARCADIS

FIGURE 4

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS, E. MURESAN, J. HARRIS
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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-d (8015B/FFP)	TPH-g (8015B)	TPH-g (Luft-GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
MW-1A	4/7/2013	18.74	5.45	0.00	13.29	13.45	0.16	450	980	1,000	7.7	0.52	1.5	5.9	16	45	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01, A52
MW-1B	4/7/2013	18.88	6.48	0.00	12.40	12.26	-0.14	110	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	11	<0.50	<0.50	<0.50	<250	A52
MW-2A	4/7/2013	18.93	6.85	0.00	12.08	13.61	1.53	2,100	2,300	1,800	360	<5.0	15	<10	250	3,000	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	A01, A52,
MW-2B	4/7/2013	19.10	5.52	0.00	13.58	14.18	0.60	40	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52
MW-3A	4/7/2013	18.62	4.55	0.00	14.07	14.41	0.34	530	1,100	880	19	1.1	3.0	<1.0	<0.50	<10	<0.50	0.89	<0.50	<0.50	<0.50	<250	A01, A52,
MW-3B	4/7/2013	18.57	5.91	0.00	12.66	14.41	1.75	77	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52

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.
PQL	practical quantitation limit
MDL	method detection limit
A52	Chromatogram not typical of diesel

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

Well ID	Date Sampled	Dissolved Iron	Dissolved Manganese	Nitrate as NO3 (mg/L)	Nitrite as NO2 (mg/L)	Sulfate (mg/L)	Post-purge DO	Pre-purge DO	Comments
MW-1A	4/7/2013	70	5,900	<0.44	<0.17	<1.0	1.0	1.2	
MW-1B	4/7/2013	--	--	--	--	--	--	--	
MW-2A	4/7/2013	1,900	14,000	<0.88	<0.17	39.0	1.0	1.0	A01
MW-2B	4/7/2013	--	--	--	--	--	--	--	
MW-3A	4/7/2013	240	6,700	<0.44	<0.17	2.9	0.9	1.1	
MW-3B	4/7/2013	<50	45	<0.44	<0.17	6.3	1.0	1.2	

Note

Analytical results given in micrograms per liter (µg/L), unless otherwise stated

Standard Abbreviations

mg/l	milligrams per liter (approx. equivalent to parts per million, ppm)
µg/l	micrograms per liter (approx. equivalent to parts per billion, ppb)

Analytes

DO	dissolved oxygen

Lab Qualifiers

A01	PQL's and MDL's are raised due to sample dilution.
MDL	method detection limit

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 (8015B)	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	
	10/28/2012		5.32	0.00	13.42	13.17	-0.25	<100	180	--	1,500	13	0.72	2.8	1.7	52	120	<0.50	<0.50	<0.50	<0.50	1.9	<250	A52
	1/16/2013		5.29	0.00	13.45	13.42	-0.03	230	260	1,000	1,300	9.0	<0.50	2.1	1.7	24	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01, A52, A57
	4/7/2013		5.45	0.00	13.29	13.45	0.16	--	450	980	1,000	7.7	0.52	1.5	5.9	16	45	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01, A52
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	
	10/28/2012		5.44	0.00	13.44	11.98	-1.46	<100	<40	--	<50	<0.50	<0.50	<0.50	<1.0	0.63	<10	<0.50	23	<0.50	<0.50	<0.50	<250	
	1/16/2013		6.62	0.00	12.26	13.44	1.18	100	<40	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	15	<0.50	<0.50	<0.50	<250	A52, A57
	4/7/2013		6.48	0.00	12.40	12.26	-0.14	--	110	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	11	<0.50	<0.50	<0.50	<250	A52
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	
	10/28/2012		5.68	0.00	13.25	11.60	-1.65	<100	91	--	1,300	150	<2.5	14	5.4	270	2,100	<2.5	<2.5	<2.5	<2.5	<2.5	<1,200	A01
	1/16/2013		5.32	0.00	13.61	13.25	-0.36	340	710	2,800	1,700	310	7.0	14	5.2	140	3,400	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A01, A52, A57
	4/7/2013		6.85	0.00	12.08	13.61	1.53	--	2,100	2,300	1,800	360	<5.0	15	<10	250	3,000	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	A01, A52,
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	
	10/28/2012		5.22	0.00	13.88	13.82	-0.06	<100	<40	--	<50	<0.50	<0.50	<0.50	<1.0	1.7	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/16/2013		4.92	0.00	14.18	13.88	-0.30	<100	<40	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52, A57
	4/7/2013		5.52	0.00	13.58	14.18	0.60	--	40.00	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52
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	
	10/28/2012		4.37	0.00	14.25	14.12	-0.13	<100	130	--	1,600	54	3.9	27	4.4	2.8	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<500	A01
	1/16/2013		4.21	0.00	14.41	14.25	-0.16	210	170	1,600	1,400	19	1.0	3.3	<1.0	<0.50	<10	<0.50	1.0	<0.50	<0.50	<0.50	<250	A01, A52, A57
	4/7/2013		4.55	0.00	14.07	14.41	0.34	--	530	1,100	880	19	1.1	3.0	<1.0	<0.50	<10	<0.50	0.89	<0.50	<0.50	<0.50	<250	A01, A52,

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 (8015B)	TPH-g (Luft-GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
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	
	10/28/2012		4.10	0.00	14.47	14.21	-0.26	<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	
	1/16/2013		4.16	0.00	14.41	14.47	0.06	<100	<40	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52. A57, SO5
	4/7/2013		5.91	0.00	12.66	14.41	1.75	--	77	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	A52

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.
PQL	practical quantitation limit
MDL	method detection limit
A52	Chromatogram not typical of diesel
A57	Chromatogram not typical of motor oil
SO5	The sample holding time was exceeded

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

Well ID	Date Sampled	Dissolved Iron	Dissolved Manganese	Nitrate as NO3 (mg/L)	Nitrite as NO2 (mg/L)	Sulfate (mg/L)	Post-purge DO	Pre-purge DO	Comments
MW-1A	1/16/2013	69	5,300	<0.44	<0.17	1.1	1.0	1.2	
MW-1A	4/7/2013	70	5,900	<0.44	<0.17	<1.0	1.0	1.2	
MW-1B	1/16/2013	--	--	--	--	--	--	--	
MW-1B	4/7/2013	--	--	--	--	--	--	--	
MW-2A	1/16/2013	1,400	13,000	<0.88	<0.17	5.6	1.0	1.0	
MW-2A	4/7/2013	1,900	14,000	<0.88	<0.17	39.0	1.0	1.0	A01
MW-2B	1/16/2013	--	--	--	--	--	--	--	
MW-2B	4/7/2013	--	--	--	--	--	--	--	
MW-3A	1/16/2013	<50	5,200	<0.44	<0.17	6.3	0.9	1.1	
MW-3A	4/7/2013	240	6,700	<0.44	<0.17	2.9	0.9	1.1	
MW-3B	1/16/2013	<50	45	<0.44	<0.17	6.3	1.0	1.2	
MW-3B	4/7/2013	<50	45	<0.44	<0.17	6.3	1.0	1.2	

Note

Analytical results given in micrograms per liter (µg/L), unless otherwise stated

Standard Abbreviations

mg/l	milligrams per liter (approx. equivalent to parts per million, ppm)
µg/l	micrograms per liter (approx. equivalent to parts per billion, ppb)

Analytes

DO	dissolved oxygen

Lab Qualifiers

A01	PQL's and MDL's are raised due to sample dilution.
MDL	method detection limit

ARCADIS

Attachment A

Field Data Sheets and General Procedures

GETTLER-RYAN INC.

TRANSMITTAL

April 17, 2013
G-R #385707

TO: Ms. Leah Ackerman
Arcadis
100 Montgomery Street Suite 300
San Francisco, CA 94104

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Chevron Facility
#351780/3737
1400 Powell
Emeryville, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package **Second Quarter Event of April 7, 2013**

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/351780/3737

6747 Sierra Court, Suite J • **Dublin**, CA 94568 • (925) 551-7555 • Fax (925) 551-7888
3140 Gold Camp Drive, Suite 170 • **Rancho Cordova**, CA 95670 • (916) 631-1300 • Fax (916) 631-1317
1364 N. McDowell Blvd., Suite B2 • **Petaluma**, CA 94954 • (707) 789-3255 • Fax (707) 789-3218

WELL CONDITION STATUS SHEET

Client/
Facility #: **Chevron #351780 / 3737**

Site Address: **1400 Powell**

City: **Emeryville, CA**

Job #: **385707**

Event Date: 4/7/13

Sampler: G. MEDINA

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

Comments

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

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

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

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

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

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

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by Clean Harbors Environmental Services to Evergreen Oil located in Newark, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Chevron #351780 / 3737 | Job Number: 385707
Site Address: 1400 Powell | Event Date: 4/7/13 (inclusive)
City: Emeryville, CA | Sampler: GM

Well ID: MW-1A | Date Monitored: 4/7/13
Well Diameter: 2 in.
Total Depth: 9.72 ft.
Depth to Water: 5.45 ft.

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

☐ Check if water column is less then 0.50 ft.

4.27 xVF 0.17 = 0.73 x3 case volume = Estimated Purge Volume: 2.5 gal.

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

Purge Equipment:

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

Sampling Equipment:

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

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

Start Time (purge): 0515 | Weather Conditions: CLOUDY
Sample Time/Date: 0820 / 4/7/13 | Water Color: CLOUDY Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. | Sediment Description: SILT
Did well de-water? Yes If yes, Time: 0522 Volume: 1 gal. DTW @ Sampling: 6.28

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - (µS))	Temperature (°C F)	D.O. (mg/L)	ORP (mV)	TURBIDITY
0502	PRE:	7.33	645	17.1	PRE: 1.2	PRE: 71	PRE: 29.16
0522	1	7.27	638	16.9			
					POST: 1.2	POST: 67	POST: 39.61

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1A	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	1 x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/ NITRITE/SULFATE
	2 x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #351780 / 3737** Job Number: **385707**

Site Address: **1400 Powell** Event Date: 4/7/13 (inclusive)

City: **Emeryville, CA** Sampler: GM

Well ID **MW-1B** Date Monitored: 4/7/13

Well Diameter **2** in.

Total Depth 21.71 ft.

Depth to Water 6.48 ft.

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

☐ Check if water column is less then 0.50 ft.

15.23 xVF 0.17 = 2.59 x3 case volume = Estimated Purge Volume: 8 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.52

Purge Equipment:

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

Sampling Equipment:

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

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

Start Time (purge): 0530 Weather Conditions: CLOUDY

Sample Time/Date: 0840 / 4/7/13 Water Color: CLOUDY Odor: (Y) N SLIGHT

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

Did well de-water? Yes If yes, Time: 0540 Volume: 4.5 gal. DTW @ Sampling: 9.44

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	TURBIDITY
	PPE:	7.15	1161	16.9	PRE: 0.9	PRE: 88	PRE: 5.05
0535	3	7.11	1156	16.5			
					POST: 1.1	POST: 72	POST: 8.79

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1B	6x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/ NITRITE/SULFATE
	x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
LOW FLOW FIELD DATA SHEET

Client/Facility#: Chevron #351780 / 3737 Job Number: 385707
Site Address: 1400 Powell Event Date: 4/7/13 (inclusive)
City: Emeryville, CA Sampler: GM

Well ID MW-2A Date Monitored: 4/7/13
Well Diameter 2 in.
Total Depth 10.14 ft.
Depth to Water 6.85 ft.

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

☐ Check if water column is less then 0.50 ft.

3.29 xVF 0.17 = 0.56 x3 case volume = Estimated Purge Volume: 2 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.50

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

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

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

Start Time (purge):
Sample Time/Date: 0720 / 4/7/13
Approx. Flow Rate: lpm.
Did well de-water? If yes, Time: Volume: gal. DTW @ Sampling: ✓

Weather Conditions: CLOUDY
Water Color: TAN Odor: (Y) / N SLIGHT
Sediment Description: SS SLT

Time (2400 hr.)	Volume (Liters)	pH	Conductivity (~~µmhos/cm~~ mS)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded	TURBIDITY
	PRE	6.84	2.71	17.1	PRE: 1.12	PRE: 106	6.85	PRE: 9.35
					POST:	POST:		POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2A	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260B)/ BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	1 x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/NITRITE/SULFATE
	2 x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS: DEPTH PUMP SET AT: 9 FT → 10.14
PRE GRAB SAMPLE TAKEN @ 0720 WELL DEWATERED AFTER GRAB SAMPLE & NEVER RECOVERED.

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351780 / 3737 Job Number: 385707
Site Address: 1400 Powell Event Date: 4/7/13 (inclusive)
City: Emeryville, CA Sampler: GM

Well ID MW-2B Date Monitored: 4/7/13
Well Diameter 2 in.
Total Depth 23.60 ft.
Depth to Water 8.52 ft.

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

☐ Check if water column is less then 0.50 ft.

15.08 xVF 0.17 = 2.56 x3 case volume = Estimated Purge Volume: 8 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.53

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

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

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

Start Time (purge): 0645 Weather Conditions: Cloudy
Sample Time/Date: 0945 / 4/7/13 Water Color: cloudy Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? YES If yes, Time: 0658 Volume: 5 gal. DTW @ Sampling: 10.99

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm (µS))	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)	TURBIDITY
	PRE	7.71	988	17.4	PRE: 1.0	PRE: 98	PRE: 21.13
0650	2.5	7.64	978	17.1			
0658	5	7.61	970	16.8			
					POST: 1.1	POST: 86	POST: 4.08

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2B	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/ NITRITE/SULFATE
	x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #351780 / 3737** Job Number: **385707**
Site Address: **1400 Powell** Event Date: 4/7/13 (inclusive)
City: **Emeryville, CA** Sampler: GM

Well ID **MW-3A** Date Monitored: 4/7/13
Well Diameter **2** in.
Total Depth 9.22 ft.
Depth to Water 4.55 ft. ☐ Check if water column is less then 0.50 ft.

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

4.67 xVF 0.17 = 0.79 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.48

Purge Equipment:

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

Sampling Equipment:

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

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

Start Time (purge): 0555 Weather Conditions: CLOUDY
Sample Time/Date: 0905 / 4/7/13 Water Color: TAN Odor Y / N SLIGHT
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? YES If yes, Time: 0605 Volume: 1.5 gal. DTW @ Sampling: 5.41

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	TURBIDITY
	PRE:	7.23	1011	18.9	PRE: 1.3	PRE: 51	PRE: 16.14
0558	.75	7.18	999	18.4			
0605	1.5	7.16	995	18.5			
					POST: 1.3	POST: 59	POST: 22.13

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3A	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	1 x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/ NITRITE/SULFATE
	2 x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351780 / 3737 Job Number: 385707
Site Address: 1400 Powell Event Date: 4/7/13 (inclusive)
City: Emeryville, CA Sampler: GM

Well ID MW-3B Date Monitored: 4/7/13
Well Diameter 2 in.
Total Depth 23.80 ft.
Depth to Water 5.91 ft. ☐ Check if water column is less then 0.50 ft.

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

17.89 xVF 0.17 = 3.04 x3 case volume = Estimated Purge Volume: 9.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.49

Purge Equipment:

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

Sampling Equipment:

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

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

Start Time (purge): 0615 Weather Conditions: Cloudy
Sample Time/Date: 0920 / 4/7/13 Water Color: Cloudy Odor: (Y) N SLIGHT
Approx. Flow Rate: ~ gpm. Sediment Description: Silt
Did well de-water? Yes If yes, Time: 0630 Volume: 6 gal. DTW @ Sampling: 9.48

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)	TURBIDITY
	PRE	7.17	1203	19.2	PRE: 1.2	PRE: 71	PRE: 6.91
0621	3.5	7.10	1199	18.9			
					POST: 1.4	POST: 65	POST: 10.13

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3B	6x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/TPH-GRO(8260)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	2x 1 liter ambers	YES	NP	BC LABS	TPH-MO w/sgc/TPH-DRO w/sgc (8015)
	x 1 liter poly	YES	NP	BC LABS	DISSOLVED IRON/DISSOLVED MANGANESE/NITRATE/ NITRITE/SULFATE
	x voa vial	YES	TSP	MICROSEEPS	METHANE (RSK-175/AM20 GAX)

COMMENTS:

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

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: T0601974736	Consultant Contact: LIAH ACKERMAN
Site Address: 1400 POWELL EMERYVILLE CA	Consultant Phone No.: (415) 432 6912
	Sampling Company: GETTLER RYAN INC
Union Oil PM: ROYA KAMBIN	Sampled By (PRINT): GILBERT MEDINA
Union Oil PM Phone No.: (925) 790 6270	Sampler Signature:
Charge Code: NWRTB- 0 8 5 1 7 3 0 -0- LAB	BC Laboratories, Inc.
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

SAMPLE ID						ANALYSES REQUIRED											
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - Gasoline by EPA 8015 (8260B)	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	TPH - MO w/SGC (9015)	EDF w/ MTBE (8260B)					Turnaround Time (TAT): Standard ☑ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ Special Instructions / Notes / Comments
QA	W-S-A		130407		2		X					X					
MW1A	W-S-A			0820	3	X		X			X						
MW-1B	W-S-A			0840													
MW-2A	W-S-A			0720													
MW-2B	W-S-A			0945													
MW-3A	W-S-A			0905													
MW-3B	W-S-A			0920													
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:
	GETTLER-RYAN INC	4/7/13 1115						
Received By	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**
GETTLER-RYAN FED EX		04-1 - 01	Gary Bryan	BCLAB	4-8-13 1430			

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

Site Global ID: T0600197457?6

Site Address: 1400 POWELL EMERYVILLE CA

Union Oil PM: RUVA KAMDIN

Union Oil PM Phone No.: (925) 790-6270

Charge Code: NWRTB- 0 351780 -0- LAB

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

Union Oil Consultant: ARCADIS

Consultant Contact: SEAN NEUERMAN

Consultant Phone No.: (415) 432 6912

Sampling Company: GETTLER-RYAN INC

Sampled By (PRINT): GILBERT MEDINA

Sampler Signature:

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: PLACE SAMPLES ON HOLD & CONTACT LEAD CONSULTANT FOR FURTHER 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	DISSOLVED IRON	DISSOLVED MANGANESE	NITRATE / NITRITE / SULFATE				Notes / Comments
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers												
MW-1A	W-S-A		130407	0920	1						X	X	X				
MW-2A	W-S-A			0720	1						↓	↓	↓				
MW-3A	W-S-A			0905	1						↓	↓	↓				
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

Relinquished By	Company	Date / Time:
[signature]	GETTLER-RYAN INC	4/7/13 1115

Received By	Company	Date / Time:
GETTLER-RYAN FEDEX		4-8-13 1430

Relinquished By	Company	Date / Time :
[signature]	GTI INC	1430

Received By	Company	Date / Time :
Mary Bogan	BC Lab	4-8-13 1430

Relinquished By	Company	Date / Time:

Received By	Company	Date / Time:

☐ Yes
☐ No

COPY

Chain-of-Custody-Record

Leah Ackerman
Arcadis
100 Montgomery Street
Suite 300
San Francisco, CA
94104
Leah.Ackerman@arcadis-us.com

Chevron Facility #: 351780 / 3737 Global ID#: T6019745736
Facility Address: 1400 Powell, Emeryville
Consultant Project #: 385707
Consultant Name: GETTLER-RYAN INC.
Address: 6747 SIERRA COURT, SUITE J, DUBLIN, CA 94568
Project Contact: (Name) DEANNA L. HARDING (deanna@grinc.com)
(Phone) 925-551-7555 (Fax) 925-551-7899

Chevron Contact: (Name) Roya Kambin
(Phone) 925-790-6270
Laboratory Name: Microseeps Inc.
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) GILBERT MEDINA
Signature:

☑ CA ☐ OR ☐ WA ☐ NW Series ☐ CO ☐ UT ☐ ID

Sample Number	Number of Containers	Matrix S=Soil A=Air W=Water C=Charcoal	Date/Time	METHANE (RSK-175/AM20 GAX) (TSP PRESERVED)	Remarks / Lab Sample No.
MW-1A	2	W	4/7/13 0820	X	
MW-2A	2	↓	↓ 0720	X	
MW-3A	2	↓	↓ 0905	X	

Remarks
Direct Bill Leah Ackerman @ Arcadis
Send Results to Leah Ackerman at Arcadis

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan Inc.	4/8/13 1115	GETTLER-RYAN FRIDGE	G-R INC	04-08-13 0700	
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	G-R INC	04-09-13 1630	FED-EX			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

Turn Around Time (Circle Choice)

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

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

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 04/24/2013

Leah Ackerman

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

Project:	3737
BC Work Order:	1307137
Invoice ID:	B144547

Enclosed are the results of analyses for samples received by the laboratory on 4/8/2013. 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

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Case Narratives

Case Narrative for Work Order 1307137

No results for TPH-motor oil with silica gel clean-up available, due to extraction error. Notified Leah Ackerman on 04/23/13.

1307137

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: T0601974573 6	Consultant Contact: LEAH ACKERMAN
Site Address: 1400 POWELL EMERYVILLE CA	Consultant Phone No.: (415) 432-6912
	Sampling Company: GETTLER RYAN INC
Union Oil PM: ROY A KAMBIN	Sampled By (PRINT): GILBERT MEDINA
Union Oil PM Phone No.: (925) 790.6270	Sampler Signature:
Charge Code: NWRTB-0351780-0-LAB SO-15094778	BC Laboratories, Inc.
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

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

Special Instructions

SAMPLE ID						ANALYSES REQUIRED											
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G (8015) & (8260B)	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	TPH-MO w/SGC (8015)	BTEX/MTBE (8260B)					Notes / Comments
QA	W-S-A	-1	130407		2		X					X					
MW1A	W-S-A	-2		0820	8	X		X			X						DISTRIBUTION
MW-1B	W-S-A	-3		0840													SUB-OUT
MW-2A	W-S-A	-4		0720													
MW-2B	W-S-A	-5		0945													
MW-3A	W-S-A	-6		0905													
MW-3B	W-S-A	-7		0920													
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

CHK BY KQ

SHORT HOLDING TIME: Cr^{+6} NO NO_3 OP SS DO Cl_2 BOD MBAS COT

Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:
	GETTLER RYAN INC	4/7/13 1115		GR INC	04-08-13 0745	Gary Bogan	BC Lab	4-8-13 1815
Received By	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**
GETTLER-RYAN FRIDGE		04-08-13 0740	Gary Bogan	BC Lab	4-8-13 1430		BCLAB	4-8-13 18:15

REL. 4-8-13 22:55 BCL 4-8-13 2055

1307137

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: T0601974536	Consultant Contact: LEAH ACKERMAN
Site Address: 1400 POWELL EMERYVILLE CA	Consultant Phone No.: (415) 432 6912
	Sampling Company: GETTLER-RYAN INC
Union Oil PM: ROYA KAMBIN	Sampled By (PRINT): GILBERT MEDINA
Union Oil PM Phone No.: (925) 7906270	Sampler Signature:
Charge Code: NWRTB-0351780-0-LAB	BC Laboratories, Inc.
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

SAMPLE ID						ANALYSES REQUIRED												
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	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	DISSOLVED IRON	DISSOLVED MANGANESE	NITRATE/NITRITE/SULFATE				Turnaround Time (TAT): Standard ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐	Special Instructions / Notes / Comments
MW-1A	W-S-A	-2	130407	0820	1						X	X	X					PLACE SAMPLES ON HOLD & CONTACT LEAD CONSULTANT FOR FURTHER INSTRUCTIONS
MW-2A	W-S-A	-4		0720	1						↓	↓	↓					
MW-3A	W-S-A	-10		0905	1						↓	↓	↓					
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	
	W-S-A																	

Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time:
	GETTLER RYAN INC	4/7/13 1115		GRINC	4-8-13 1430	Gary Bogan	BCLab	4-8-13 1815
Received By	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time:**
GETTLER-RYAN FRIDGE		04-08-13 0900	Gary Bogan	BC Lab	4-8-13 1430	[signature]	BCLAB	4-8-13 18:15

REL. [signature] 4-8-13 22:55

Chain of Custody and Cooler Receipt Form for 1307137 Page 3 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 Of 2

Submission #: 1307137

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: PE Thermometer ID: 207 Date/Time 4/8/13 2305

Temperature: (A) 1.7 °C / (C) 1.6 °C Analyst Init SAS

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL						B				
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	A2									
40ml VOA VIAL	A10	A10	A10	A10	A10	A10	A10			
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						C	BC			
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments:

Sample Numbering Completed By: JDW Date/Time: 4/8/13 0340

A = Actual / C = Corrected

Chain of Custody and Cooler Receipt Form for 1307137 Page 4 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/07/12 Page 4 of 4

Submission #: 1307137

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☑ None ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____	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: QtPE Thermometer ID: 207 Date/Time 4/8/13 2305

Temperature: (A) 2.6 °C / (C) 2.5 °C Analyst Init SAS

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL		B		B						
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		CD	BC	CD	BC					
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments _____

Sample Numbering Completed By: JNW Date/Time: 4/8/13 2340

A = Actual / C = Corrected

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1307137-01	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 00:00
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	QA-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Trip Blank
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): QA
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1307137-02	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 08:20
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1A-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Groundwater
			Metal Analysis: 2-Lab Filtered and Acidified
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-1A
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1307137-03	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 08:40
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1B-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Groundwater
			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: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1307137-04	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 07:20
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-2A-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Groundwater
			Metal Analysis: 2-Lab Filtered and Acidified
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-2A
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1307137-05	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 09:45
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-2B-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-2B
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1307137-06	**COC Number:**	---	**Receive Date:** 04/08/2013 22:55
	Project Number:	3737	**Sampling Date:** 04/07/2013 09:05
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-3A-W-130407	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Groundwater
			Metal Analysis: 2-Lab Filtered and Acidified
			Delivery Work Order:
			Global ID: T06019745736
			Location ID (FieldPoint): MW-3A
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information

1307137-07

COC Number: ---
Project Number: 3737
Sampling Location: ---
Sampling Point: MW-3B-W-130407
Sampled By: GRD

Receive Date: 04/08/2013 22:55
Sampling Date: 04/07/2013 09:20
Sample Depth: ---
Lab Matrix: Water
Sample Type: Groundwater
Delivery Work Order:
Global ID: T06019745736
Location ID (FieldPoint): MW-3B
Matrix: W
Sample QC Type (SACode): CS
Cooler ID:

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-01 | **Client Sample Name:** 3737, QA-W-130407, 4/7/2013 12:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	97.3	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	96.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/10/13 13:24	EAR	MS-V12	1	BWD0694

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-01 | **Client Sample Name:** 3737, QA-W-130407, 4/7/2013 12:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	81.5	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/11/13	04/16/13 18:32	jjh	GC-V9	1	BWD0983

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-02 | **Client Sample Name:** 3737, MW-1A-W-130407, 4/7/2013 8:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**7.7**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene	**1.5**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Methyl t-butyl ether	**16**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Toluene	**0.52**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Total Xylenes	**5.9**	**ug/L**	**1.0**	**EPA-8260B**	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	**45**	**ug/L**	**10**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**1000**	**ug/L**	**50**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.8	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 00:17	EAR	MS-V12	1	BWD0694

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-02 | **Client Sample Name:** 3737, MW-1A-W-130407, 4/7/2013 8:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**980**	**ug/L**	**100**	**EPA-8015B**	ND	**A01**	1
a,a,a-Trifluorotoluene (FID Surrogate)	129	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/11/13	04/18/13 14:39	jjh	GC-V9	2	BWD0983

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-02 | **Client Sample Name:** 3737, MW-1A-W-130407, 4/7/2013 8:20:00AM

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)	99.3	%	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	04/12/13	04/16/13 19:39	JAR	GC-5	0.960	BWD1395

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Water Analysis (General Chemistry)

BCL Sample ID: 1307137-02 | **Client Sample Name:** 3737, MW-1A-W-130407, 4/7/2013 8:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Nitrate as NO3	ND	mg/L	0.44	EPA-300.0	ND		1
Sulfate	ND	mg/L	1.0	EPA-300.0	ND		1
Nitrite as NO2	ND	mg/L	0.17	EPA-353.2	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	04/09/13	04/09/13 01:28	LD1	IC2	1	BWD0689
2	EPA-353.2	04/09/13	04/09/13 01:34	TDC	KONE-1	1	BWD0712

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Metals Analysis

BCL Sample ID: 1307137-02 | **Client Sample Name:** 3737, MW-1A-W-130407, 4/7/2013 8:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	**70**	**ug/L**	**50**	**EPA-200.7**	ND		1
Dissolved Manganese	**5900**	**ug/L**	**10**	**EPA-200.7**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.7	04/09/13	04/10/13 10:38	JRG	PE-OP2	1	BWD0820

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-03 | **Client Sample Name:** 3737, MW-1B-W-130407, 4/7/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	**11**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	98.1	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	97.8	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 00:35	EAR	MS-V12	1	BWD0694

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-03 | **Client Sample Name:** 3737, MW-1B-W-130407, 4/7/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	85.9	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/11/13	04/16/13 19:12	jjh	GC-V9	1	BWD0983

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-03 | **Client Sample Name:** 3737, MW-1B-W-130407, 4/7/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**110**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	130	%	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	04/12/13	04/16/13 19:54	JAR	GC-5	0.990	BWD1395

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-04 | **Client Sample Name:** 3737, MW-2A-W-130407, 4/7/2013 7:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**360**	**ug/L**	**5.0**	**EPA-8260B**	ND	**A01**	1
1,2-Dibromoethane	ND	ug/L	5.0	EPA-8260B	ND	A01	1
1,2-Dichloroethane	ND	ug/L	5.0	EPA-8260B	ND	A01	1
Ethylbenzene	**15**	**ug/L**	**5.0**	**EPA-8260B**	ND	**A01**	1
Methyl t-butyl ether	**250**	**ug/L**	**5.0**	**EPA-8260B**	ND	**A01**	1
Toluene	ND	ug/L	5.0	EPA-8260B	ND	A01	1
Total Xylenes	ND	ug/L	10	EPA-8260B	ND	A01	1
t-Amyl Methyl ether	ND	ug/L	5.0	EPA-8260B	ND	A01	1
t-Butyl alcohol	**3000**	**ug/L**	**100**	**EPA-8260B**	ND	**A01**	1
Diisopropyl ether	ND	ug/L	5.0	EPA-8260B	ND	A01	1
Ethanol	ND	ug/L	2500	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	ug/L	5.0	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**1800**	**ug/L**	**500**	**Luft-GC/MS**	ND	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 00:53	EAR	MS-V12	10	BWD0694

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-04 | **Client Sample Name:** 3737, MW-2A-W-130407, 4/7/2013 7:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**2300**	**ug/L**	**500**	**EPA-8015B**	ND	**A01**	1
a,a,a-Trifluorotoluene (FID Surrogate)	107	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/16/13	04/17/13 17:01	jjh	GC-V9	10	BWD1256

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-04 | **Client Sample Name:** 3737, MW-2A-W-130407, 4/7/2013 7:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**2100**	**ug/L**	**200**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	101	%	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	04/12/13	04/17/13 18:40	JAR	GC-5	5	BWD1395

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Water Analysis (General Chemistry)

BCL Sample ID: 1307137-04 | **Client Sample Name:** 3737, MW-2A-W-130407, 4/7/2013 7:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Nitrate as NO3	ND	mg/L	0.88	EPA-300.0	ND	A01	1
Sulfate	**39**	**mg/L**	**2.0**	**EPA-300.0**	ND	**A01**	1
Nitrite as NO2	ND	mg/L	0.17	EPA-353.2	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	04/09/13	04/09/13 02:23	LD1	IC2	2	BWD0689
2	EPA-353.2	04/09/13	04/09/13 01:34	TDC	KONE-1	1	BWD0712

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Metals Analysis

BCL Sample ID: 1307137-04 | **Client Sample Name:** 3737, MW-2A-W-130407, 4/7/2013 7:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	**1900**	**ug/L**	**50**	**EPA-200.7**	ND		1
Dissolved Manganese	**14000**	**ug/L**	**10**	**EPA-200.7**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.7	04/09/13	04/10/13 10:41	JRG	PE-OP2	1	BWD0820

Arcadis
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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-05 | **Client Sample Name:** 3737, MW-2B-W-130407, 4/7/2013 9:45:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 01:10	EAR	MS-V12	1	BWD0694

Arcadis
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Walnut Creek, CA 94597

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-05 | **Client Sample Name:** 3737, MW-2B-W-130407, 4/7/2013 9:45:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	82.2	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/16/13	04/16/13 19:33	jjh	GC-V9	1	BWD1256

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-05 | **Client Sample Name:** 3737, MW-2B-W-130407, 4/7/2013 9:45:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**40**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	120	%	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	04/12/13	04/16/13 20:22	JAR	GC-5	1	BWD1395

Arcadis
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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-06 | **Client Sample Name:** 3737, MW-3A-W-130407, 4/7/2013 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**19**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	**0.89**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Ethylbenzene	**3.0**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Toluene	**1.1**	**ug/L**	**0.50**	**EPA-8260B**	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	**880**	**ug/L**	**50**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 01:28	EAR	MS-V12	1	BWD0694

Arcadis
2999 Oak Rd, Suite 300
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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-06 | **Client Sample Name:** 3737, MW-3A-W-130407, 4/7/2013 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**1100**	**ug/L**	**100**	**EPA-8015B**	ND	**A01**	1
a,a,a-Trifluorotoluene (FID Surrogate)	139	%	70 - 130 (LCL - UCL)	EPA-8015B		A19,S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/16/13	04/18/13 14:59	jjh	GC-V9	2	BWD1256

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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-06 | **Client Sample Name:** 3737, MW-3A-W-130407, 4/7/2013 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**530**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	94.1	%	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	04/12/13	04/16/13 20:37	JAR	GC-5	1	BWD1395

Arcadis
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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Water Analysis (General Chemistry)

BCL Sample ID: 1307137-06 | **Client Sample Name:** 3737, MW-3A-W-130407, 4/7/2013 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Nitrate as NO3	ND	mg/L	0.44	EPA-300.0	ND		1
Sulfate	**2.9**	**mg/L**	**1.0**	**EPA-300.0**	ND		1
Nitrite as NO2	ND	mg/L	0.17	EPA-353.2	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	04/09/13	04/09/13 02:36	LD1	IC2	1	BWD0689
2	EPA-353.2	04/09/13	04/09/13 01:34	TDC	KONE-1	1	BWD0712

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Metals Analysis

BCL Sample ID: 1307137-06 | **Client Sample Name:** 3737, MW-3A-W-130407, 4/7/2013 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	**240**	**ug/L**	**50**	**EPA-200.7**	ND		1
Dissolved Manganese	**6700**	**ug/L**	**10**	**EPA-200.7**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.7	04/09/13	04/10/13 10:44	JRG	PE-OP2	1	BWD0820

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1307137-07 | **Client Sample Name:** 3737, MW-3B-W-130407, 4/7/2013 9:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Ethanol	ND	ug/L	250	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/09/13	04/11/13 01:46	EAR	MS-V12	1	BWD0694

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

Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-07 | **Client Sample Name:** 3737, MW-3B-W-130407, 4/7/2013 9:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	94.6	%	70 - 130 (LCL - UCL)	EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	04/16/13	04/17/13 19:26	jjh	GC-V9	1	BWD1256

Arcadis
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Reported: 04/24/2013 8:40
Project: 3737
Project Number: 351780
Project Manager: Leah Ackerman

Total Petroleum Hydrocarbons

BCL Sample ID: 1307137-07 | **Client Sample Name:** 3737, MW-3B-W-130407, 4/7/2013 9:20:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**77**	**ug/L**	**40**	**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	107	%	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	04/12/13	04/16/13 20:51	JAR	GC-5	1	BWD1395

Arcadis
2999 Oak Rd, Suite 300
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Reported: 04/24/2013 8:40
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: BWD0694						
Benzene	BWD0694-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BWD0694-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BWD0694-BLK1	ND	ug/L	0.50		
Ethylbenzene	BWD0694-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BWD0694-BLK1	ND	ug/L	0.50		
Toluene	BWD0694-BLK1	ND	ug/L	0.50		
Total Xylenes	BWD0694-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BWD0694-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BWD0694-BLK1	ND	ug/L	10		
Diisopropyl ether	BWD0694-BLK1	ND	ug/L	0.50		
Ethanol	BWD0694-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BWD0694-BLK1	ND	ug/L	0.50		
Total Purgeable Petroleum Hydrocarbons (C6-(	BWD0694-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BWD0694-BLK1	102	%	75 - 125 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWD0694-BLK1	98.3	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWD0694-BLK1	97.1	%	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: BWD0694										
Benzene	BWD0694-BS1	LCS	26.120	25.000	ug/L	104		70 - 130		
Toluene	BWD0694-BS1	LCS	25.880	25.000	ug/L	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWD0694-BS1	LCS	10.040	10.000	ug/L	100		75 - 125		
Toluene-d8 (Surrogate)	BWD0694-BS1	LCS	10.160	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BWD0694-BS1	LCS	10.020	10.000	ug/L	100		80 - 120		

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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: BWD0694	Used client sample: N										
Benzene	MS	1305402-82	ND	27.150	25.000	ug/L		109		70 - 130	
	MSD	1305402-82	ND	26.280	25.000	ug/L	3.3	105	20	70 - 130	
Toluene	MS	1305402-82	ND	28.350	25.000	ug/L		113		70 - 130	
	MSD	1305402-82	ND	27.220	25.000	ug/L	4.1	109	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1305402-82	ND	9.7000	10.000	ug/L		97.0		75 - 125	
	MSD	1305402-82	ND	9.7700	10.000	ug/L	0.7	97.7		75 - 125	
Toluene-d8 (Surrogate)	MS	1305402-82	ND	9.8900	10.000	ug/L		98.9		80 - 120	
	MSD	1305402-82	ND	9.9300	10.000	ug/L	0.4	99.3		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1305402-82	ND	10.210	10.000	ug/L		102		80 - 120	
	MSD	1305402-82	ND	10.200	10.000	ug/L	0.1	102		80 - 120	

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD0983						
Gasoline Range Organics (C6 - C12)	BWD0983-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	BWD0983-BLK1	98.6	%	70 - 130 (LCL - UCL)		
QC Batch ID: BWD1256						
Gasoline Range Organics (C6 - C12)	BWD1256-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	BWD1256-BLK1	99.3	%	70 - 130 (LCL - UCL)		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

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: BWD0983										
Gasoline Range Organics (C6 - C12)	BWD0983-BS1	LCS	941.44	1000.0	ug/L	94.1		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BWD0983-BS1	LCS	39.342	40.000	ug/L	98.4		70 - 130		
QC Batch ID: BWD1256										
Gasoline Range Organics (C6 - C12)	BWD1256-BS1	LCS	965.11	1000.0	ug/L	96.5		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BWD1256-BS1	LCS	39.892	40.000	ug/L	99.7		70 - 130		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

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: BWD0983	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1306872-02	ND	980.74	1000.0	ug/L		98.1		70 - 130	
	MSD	1306872-02	ND	956.66	1000.0	ug/L	2.5	95.7	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1306872-02	ND	38.638	40.000	ug/L		96.6		70 - 130	
	MSD	1306872-02	ND	37.003	40.000	ug/L	4.3	92.5		70 - 130	
QC Batch ID: BWD1256	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1305402-70	ND	1013.9	1000.0	ug/L		101		70 - 130	
	MSD	1305402-70	ND	986.16	1000.0	ug/L	2.8	98.6	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1305402-70	ND	39.207	40.000	ug/L		98.0		70 - 130	
	MSD	1305402-70	ND	41.343	40.000	ug/L	5.3	103		70 - 130	

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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: BWD1395						
Diesel Range Organics (C12 - C24)	BWD1395-BLK1	ND	ug/L	40		
Tetracosane (Surrogate)	BWD1395-BLK1	109	%	30 - 150 (LCL - UCL)		

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Total Petroleum Hydrocarbons

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: BWD1395										
Diesel Range Organics (C12 - C24)	BWD1395-BS1	LCS	430.34	500.00	ug/L	86.1		50 - 140		
Tetracosane (Surrogate)	BWD1395-BS1	LCS	21.790	20.000	ug/L	109		30 - 150		

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Total Petroleum Hydrocarbons

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: BWD1395	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	1305402-92	ND	381.70	500.00	ug/L		76.3		50 - 140	
	MSD	1305402-92	ND	425.33	500.00	ug/L	10.8	85.1	30	50 - 140	
Tetracosane (Surrogate)	MS	1305402-92	ND	20.247	20.000	ug/L		101		30 - 150	
	MSD	1305402-92	ND	22.218	20.000	ug/L	9.3	111		30 - 150	

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Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD0689						
Nitrate as NO3	BWD0689-BLK1	ND	mg/L	0.44		
Sulfate	BWD0689-BLK1	ND	mg/L	1.0		
QC Batch ID: BWD0712						
Nitrite as NO2	BWD0712-BLK1	ND	mg/L	0.17		

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Water Analysis (General Chemistry)

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: BWD0689										
Nitrate as NO3	BWD0689-BS1	LCS	21.891	22.134	mg/L	98.9		90 - 110		
Sulfate	BWD0689-BS1	LCS	100.05	100.00	mg/L	100		90 - 110		
QC Batch ID: BWD0712										
Nitrite as NO2	BWD0712-BS1	LCS	1.6239	1.6425	mg/L	98.9		90 - 110		

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Water Analysis (General Chemistry)

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: BWD0689	Used client sample: Y - Description: MW-1A-W-130407, 04/07/2013 08:20										
Nitrate as NO3	DUP	1307137-02	ND	ND		mg/L			10		
	MS	1307137-02	ND	21.977	22.358	mg/L		98.3		80 - 120	
	MSD	1307137-02	ND	21.973	22.358	mg/L	0.0	98.3	10	80 - 120	
Sulfate	DUP	1307137-02	0.51200	ND		mg/L			10		A02
	MS	1307137-02	0.51200	100.94	101.01	mg/L		99.4		80 - 120	
	MSD	1307137-02	0.51200	101.17	101.01	mg/L	0.2	99.7	10	80 - 120	
QC Batch ID: BWD0712	Used client sample: N										
Nitrite as NO2	DUP	1307087-01	ND	ND		mg/L			10		
	MS	1307087-01	ND	1.7923	1.7289	mg/L		104		90 - 110	
	MSD	1307087-01	ND	1.7608	1.7289	mg/L	1.8	102	10	90 - 110	

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Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD0820						
Dissolved Iron	BWD0820-BLK1	ND	ug/L	50		
Dissolved Manganese	BWD0820-BLK1	ND	ug/L	10		

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Metals Analysis

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: BWD0820										
Dissolved Iron	BWD0820-BS1	LCS	1057.6	1000.0	ug/L	106		85 - 115		
Dissolved Manganese	BWD0820-BS1	LCS	518.67	500.00	ug/L	104		85 - 115		

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Metals Analysis

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: BWD0820	Used client sample: N										
Dissolved Iron	DUP	1307060-01	ND	ND		ug/L			20		
	MS	1307060-01	ND	1065.6	1020.4	ug/L		104		85 - 115	
	MSD	1307060-01	ND	1084.5	1020.4	ug/L	1.8	106	20	85 - 115	
Dissolved Manganese	DUP	1307060-01	ND	ND		ug/L			20		
	MS	1307060-01	ND	513.21	510.20	ug/L		101		85 - 115	
	MSD	1307060-01	ND	520.29	510.20	ug/L	1.4	102	20	85 - 115	

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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.
A02	The difference between duplicate readings is less than the PQL.
A19	Surrogate is high due to matrix interference. Interferences verified through second extraction/analysis.
A52	Chromatogram not typical of diesel.
S09	The surrogate recovery on the sample for this compound was not within the control limits.