Nicole Arceneaux
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel 925.790.6912
Nicole.Arceneaux@chevron.com

July 10, 2015

RECEIVED
By Alameda County Environmental Health 11:25 am, Jul 13, 2015

Mr. Keith Nowell
Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: First Semi-Annual 2015 Groundwater Monitoring Report
10151 International Blvd, Oakland, California
Fuel Leak Case No.: RO0002444

Dear Mr. Nowell,

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) 790-6912.

Sincerely,

Nicole Arceneaux
Union Oil of California – Project Manager

Attachment:
First Semi-Annual 2015 Groundwater Monitoring Report

ARCADIS
Infrastructure · Water · Environment · Buildings

ARCADIS U.S., Inc.
2000 Powell Street
7th Floor
Emeryville
California 94608
Tel 510.652.4500
Fax 510.652.4906
www.arcadis-us.com

Mr. Keith Nowell
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Subject:
First Half 2015 Semi-Annually Groundwater Monitoring Report Submittal

ENVIRONMENT

Dear Mr. Nowell:

Date:
July 10, 2015

On behalf of Chevron Environmental Management Company's affiliate, Union Oil Company of California ("Union Oil"), ARCADIS U.S., Inc (ARCADIS) is pleased to submit the enclosed Semi-Annual Groundwater Monitoring Report for the following facility:

Facility No.	**Case No.**	**Location**
7124	RO0002444	10151 International Boulevard Oakland, California

If you have any questions, please contact Katherine Brandt at 510.596.9675.

Contact:
Katherine Brandt

Phone:
510.596.9675

Email:
Katherine.brandt@arcadis-us.com

Our ref:
B0047297.2014

Sincerely,

ARCADIS

Katherine Brandt

Katherine Brandt, P.G.
Certified Project Manager

Copies:
Ms. Nicole Arceneaux, Chevron EMC (electronic copy only)
Ms. Cherie McCaulou, CRWQCB – San Francisco Bay Region, 1515 Clay Street, Suite1400, Oakland, California 94612 (geotracker)
Ibrahim and Nawa Abbushi, property owner, 10125 International Blvd, Oakland, CA 94603 (CD)

UNION OIL OF CALIFORNIA
SEMI-ANNUALLY MONITORING REPORT
FIRST HALF 2015
July 10, 2015

Facility No.: 7124 Address: 10151 International Boulevard, Oakland, California

Consulting Company/Contact Person/Phone No.:	ARCADIS / Katherine Brandt / 510.596.9675
Primary Agency/Contact Person/Regulatory ID No.:	Alameda County Health Agency / Mr. Keith Nowell / Case No. RO0002444

WORK PERFORMED DURING THIS REPORTING PERIOD (First Half – 2015) :

1. Gettler-Ryan Inc. (G-R) conducted groundwater monitoring and sampling on June 17, 2015. Field data sheets and general procedures are included as **Attachment A**. Four (4) groundwater monitoring wells (MW-1 through MW-4) were gauged and sampled during this monitoring event.

   Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g; C6-C12) by Environmental Protection Agency (EPA) Method 8015B; benzene, toluene, ethylbenzene, and total xylenes (BTEX, collectively), oxygenates (methyl tertiary butyl ether [MTBE], tertiary butyl alcohol [TBA], ethyl tertiary butyl ether [ETBE], di-isopropyl ether [DIPE], and tertiary amyl methyl ether [TAME]), ethanol, 1,2-dibromoethane (EDB), and 1,2-dichloroethane (EDC) by EPA Method 8260B. Groundwater samples were additional analyzed for methane by method RSK-175M, EPA Method 310.1 for total alkalinity as calcium carbonate ($CaCO_{3)}$, EPA Method 300.0 for nitrate (NO_3) and sulfate, EPA Method 353.2 for nitrite (NO_2), EPA Method 415.1 for non-volatile organic carbon, Method SM-3500-FeD for ferrous iron, and EPA Method 6010B for dissolved iron and total manganese.

   The site location map, the site plan, and the groundwater contour map are presented on **Figures 1** through **3**. Concentration maps for TPH-g, benzene, and MTBE are on **Figures 4** through **6**. Current Groundwater Gauging and Analytical Results are summarized in **Table 1**, Current Additional Groundwater Analytical Results are summarized in **Table 1a**, Historic Groundwater Gauging and Analytical Results are summarized in **Table 2**, Historic Additional Groundwater Analytical Results are summarized in **Table 2a**, and Historical Groundwater Results from TRC Solutions (TRC) 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 (Second Half – 2015):

1. Discontinue Groundwater Sampling and prepare for well destructions.

Current Phase of Project:	Low Threat Closure Request/Public Participation
Site Use:	Retail service station
Frequency of Sampling:	Groundwater – Semi-Annually
Frequency of Monitoring:	Groundwater – Semi-Annually
Separate-Phase Hydrocarbons (SPH) Present:	No
Cumulative SPH Recovered to Date:	None
SPH Recovered This Quarter:	None
Bulk Soil Removed to Date:	60 cubic yards
Bulk Soil Removed this Quarter:	None
Water Wells or Surface Waters within a 2000' Radius and Their Respective Directions:	None
Groundwater Use Designation:	Municipal and Domestic Water Supply
Current Remediation Techniques:	None
Permits for Discharge (No.):	None
Approximate Depth to Groundwater :	17.30 (MW-1) – 19.04 (MW-4) feet below top of casing Measured X Estimated

UNION OIL OF CALIFORNIA
SEMI-ANNUALLY MONITORING REPORT
FIRST HALF 2015
July 10, 2015

Facility No.: 7124 Address: 10151 International Boulevard, Oakland, California

Approximate Groundwater Elevation : 19.32 (MW-4/MW-2) – 20.07 (MW-1) feet relative to mean sea level

Measured X Estimated

Groundwater Gradient: 0.006 ft/ft (Magnitude) West (Direction)

DISCUSSION:

Groundwater flow has switched directions during the second half, returning to the westerly flow observed in monitoring events prior to the first half of 2014.

During the first half of 2015 groundwater concentrations of TPH-g have decreased since the sampling event in the second half of 2014. Groundwater concentrations of MTBE during the first half of 2015 have decreased in well MW-3 compared to the previous sampling event in the second half of 2014. The maximum dissolved concentrations of TPH-g, 250 micrograms per liter [µg/L], and MTBE (3.2 µg/L) were detected in well MW-3. MW-4 had detections of TPH-g at 78 µg/L. Other constituents were not detected above the laboratory reporting limits for wells sampled.

The maximum concentrations of monitored natural attenuation analytes are listed as follows: The maximum dissolved concentrations of methane (0.11 milligrams per liter [mg/L]), non-volatile organic carbon (25 mg/L), dissolved ferrous iron (4,700 µg/L), dissolved iron (350 µg/L), and total alkalinity as $CaCO_3$ (310 mg/L) were detected in well MW-3. T The maximum dissolved concentrations of sulfate (51 mg/L was detected in MW-4. The maximum dissolved concentrations of total manganese (6,300 µg/L) was detected in well MW-3.

Groundwater elevations at the service station vary by less than a foot, creating a gentle hydraulic gradient of 0.006 feet per foot in the westerly direction.

CONCLUSIONS AND RECOMMENDATIONS:

Dissolved hydrocarbon constituent concentrations have remained consistent with historic detections at the site. ARCADIS recommends discontinuing groundwater monitoring during agency review of the updated focused Conceptual Site Model and Low Threat Closure Request (CSM/LTC Request). ARCADIS submitted a CSM/LTC Request on November 21, 2014.

ATTACHMENTS:

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Groundwater Elevation Contour Map
Figure 4: TPH-g Concentration Map
Figure 5: Benzene Concentration Map
Figure 6: MTBE Concentration Map

Table 1: Current Groundwater Gauging and Analytical Results
Table 1a: Current Additional Groundwater Analytical Results
Table 2: Historic Groundwater Gauging and Analytical Results
Table 2a: Historic Additional Groundwater Analytical Results

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

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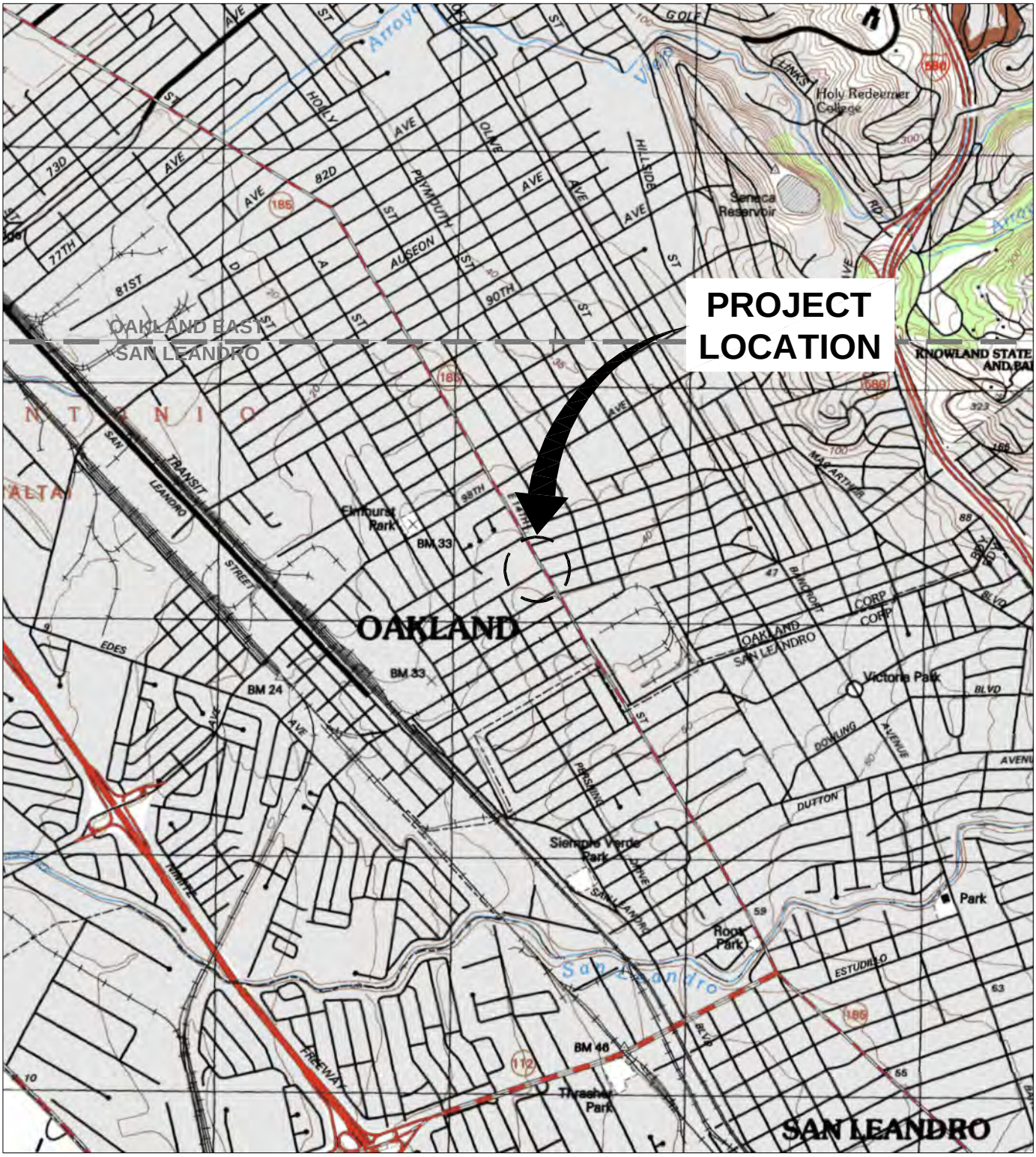
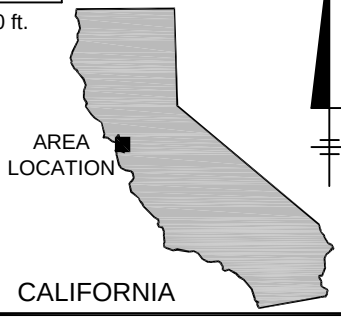
Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SAN LEANDRO, CALIFORNIA, 1993, AND OAKLAND EAST, CALIFORNIA, 1997.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

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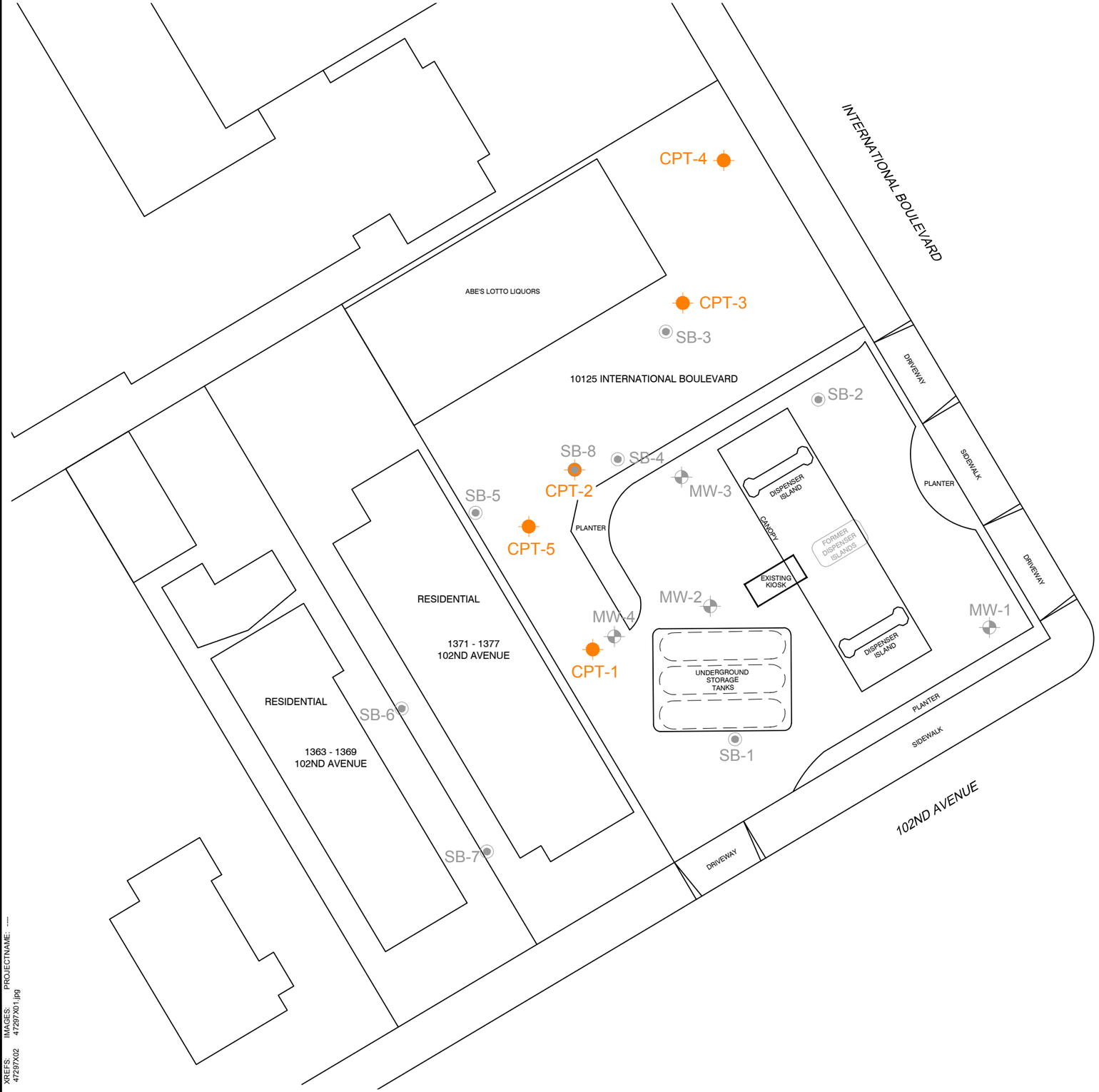
FIGURE 1



LEGEND

MW-1 GROUNDWATER MONITORING WELL

SB-1 SOIL BORING LOCATION

CPT-1 CPT LOCATION

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

GRAPHIC SCALE

UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

SITE PLAN

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FIGURE 2

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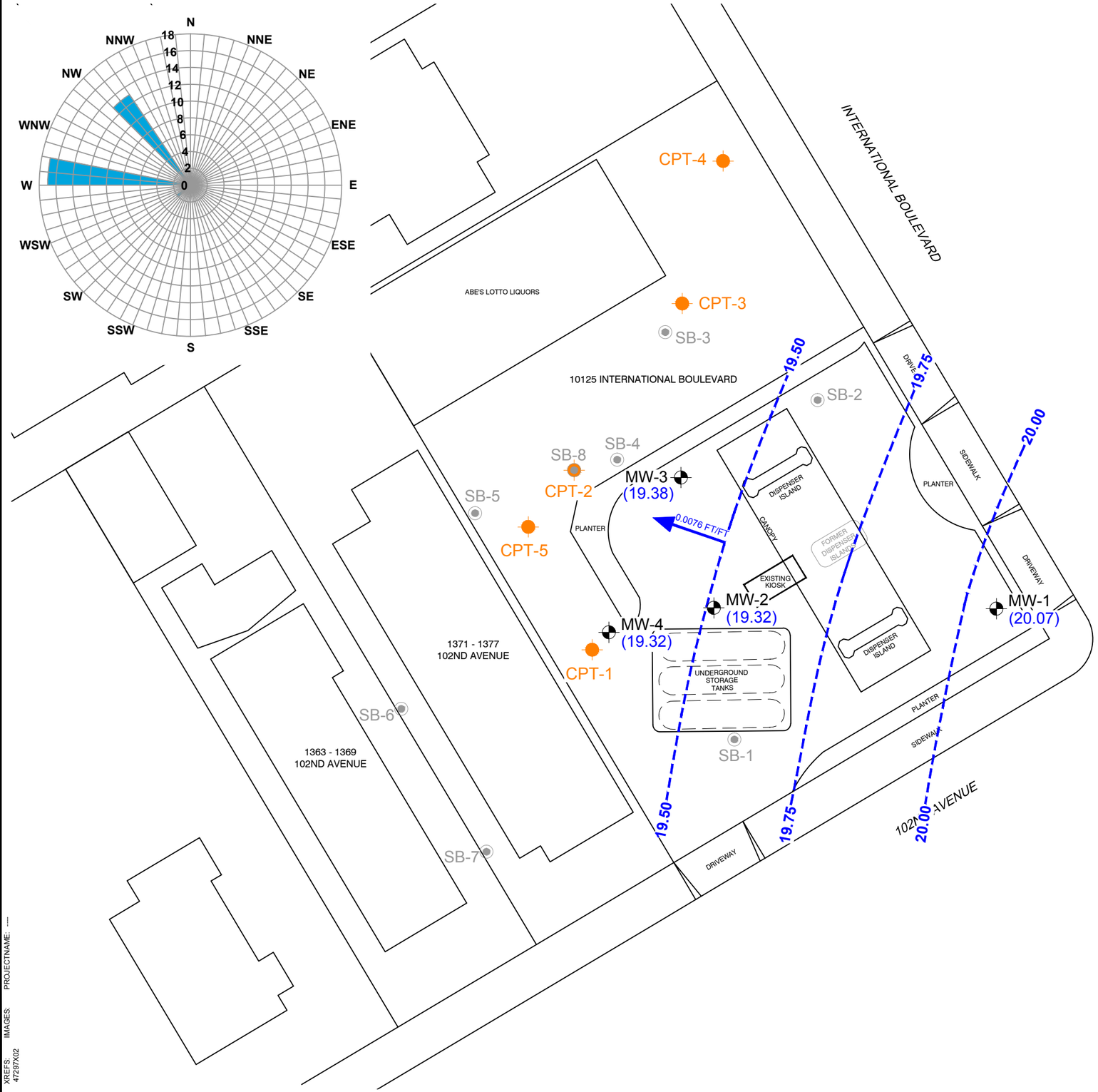

LEGEND

MW-1	GROUNDWATER MONITORING WELL
SB-1	SOIL BORING LOCATION
CPT-1	CPT LOCATION
(20.07)	GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (FT MSL)
19.75	GROUNDWATER ELEVATION CONTOUR (FT MSL□DASHED WHERE INFERRED)
0.0076 FT/FT	APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT (FOOT PER FOOT)

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL MONITORING WELLS WERE SAMPLED AND GAUGED ON JUNE 17, 2015.

0 30' 60'

GRAPHIC SCALE

UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP

ARCADIS

FIGURE 3

CITY: SAN RAFAEL, CA (PETALUMA) DIV/GROUP: ENV DB: J. HARRIS
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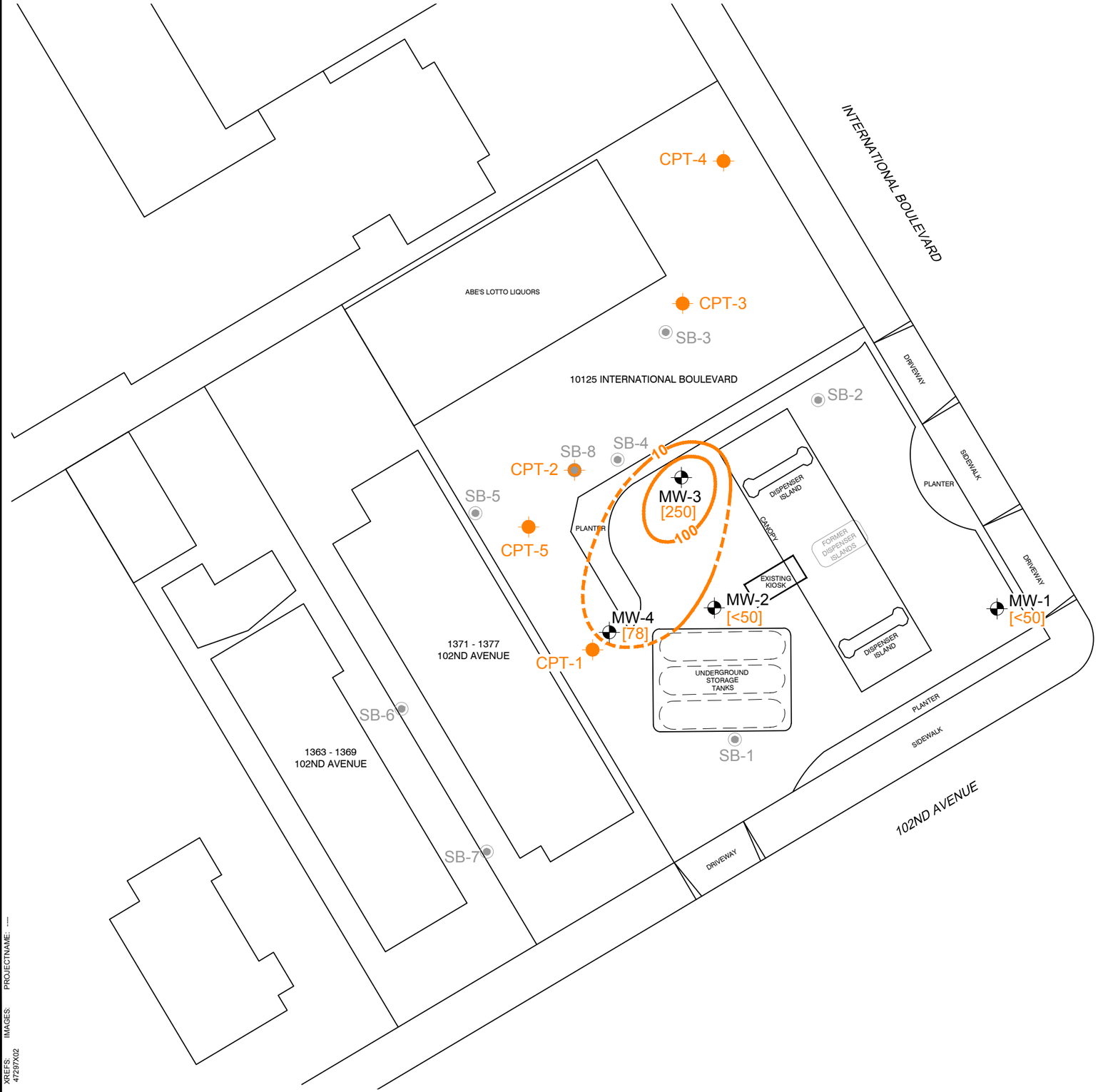

LEGEND

MW-1	GROUNDWATER MONITORING WELL
SB-1	SOIL BORING LOCATION
CPT-1	CPT LOCATION
[TPH-g]	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (C6-C12) CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
100	TPH-g ISOCONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)
<	DENOTES LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL MONITORING WELLS WERE SAMPLED AND GAUGED ON JUNE 17, 2015.

0 30' 60'

GRAPHIC SCALE

UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

TPH-g CONCENTRATION MAP

ARCADIS

FIGURE 4

CITY: SAN RAFAEL, CA (PETALUMA) DIV/GROUP: ENV DB: J. HARRIS
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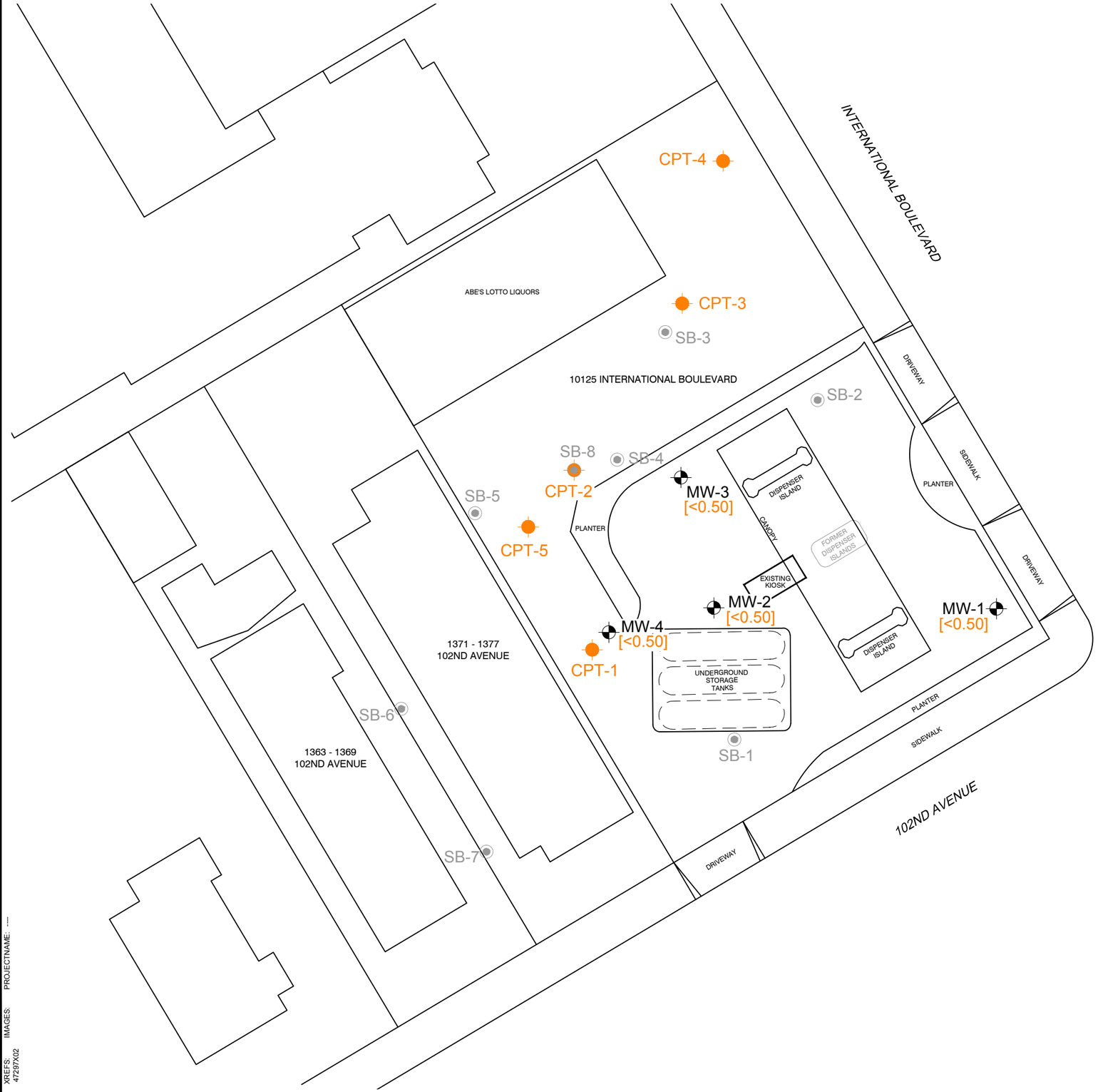

LEGEND

MW-1	GROUNDWATER MONITORING WELL
SB-1	SOIL BORING LOCATION
CPT-1	CPT LOCATION
[BEN□]	BEN□ENE CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
<	DENOTES LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL MONITORING WELLS WERE SAMPLED AND GAUGED ON JUNE 17, 2015.

0 30' 60'

GRAPHIC SCALE

UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

BENZENE CONCENTRATION MAP

ARCADIS

FIGURE 5

CITY: SAN RAFAEL, CA (PETALUMA) DIV/GROUP: ENV DB: J. HARRIS
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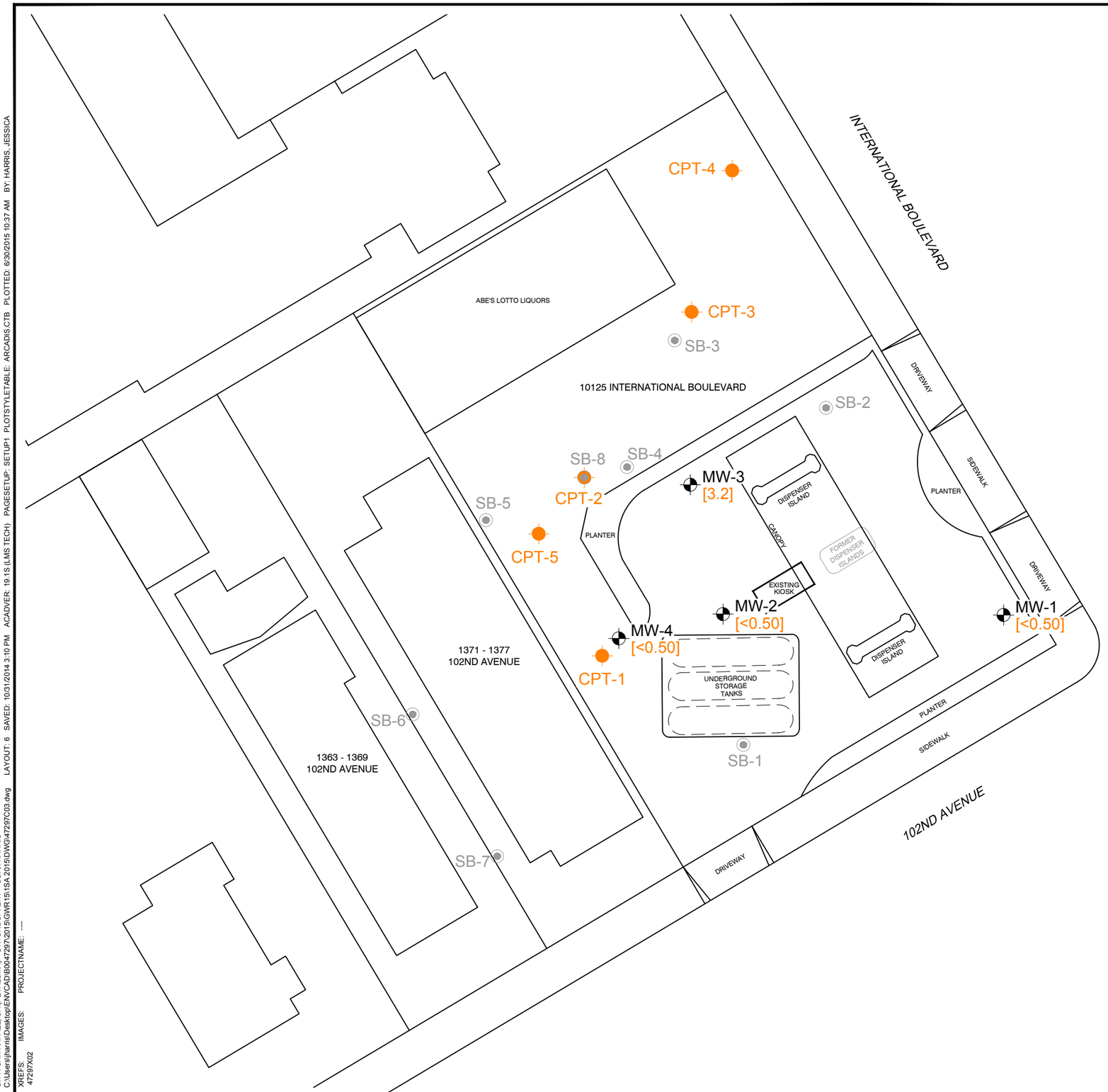

LEGEND

MW-1	GROUNDWATER MONITORING WELL
SB-1	SOIL BORING LOCATION
CPT-1	CPT LOCATION
[MTBE]	METHYL TERTIARY BUTYL ETHER CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
<	DENOTES LESS THAN LABORATORY REPORTING LIMIT

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL MONITORING WELLS WERE SAMPLED AND GAUGED ON JUNE 17, 2015.

0 30' 60'

GRAPHIC SCALE

UNION OIL
STATION NO. 7124
10151 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA

MTBE CONCENTRATION MAP

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FIGURE 6

Tables

Table 1
Current Groundwater Gauging and Analytical Results
76 Station 7124
10151 International Boulevard, Oakland, California

Well ID	Date Sampled	TOC Elevation (feet MSL)	DTW (feet BTOC)	LPH Thickness (feet)	GW Elevation (feet MSL)	Previous Quarter GWE (feet MSL)	Change in Elevation (feet)	TPH-g (8015B)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	DIPE	TAME	ETBE	Ethanol	EDB	EDC	Comments
MW-1	6/17/2015	37.37	17.30	0.00	20.07	19.08	0.99	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	6/17/2015	37.87	18.55	0.00	19.32	18.56	0.76	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	6/17/2015	37.72	18.34	0.00	19.38	18.55	0.83	250	<0.50	<0.50	<0.50	<1.0	3.2	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	6/17/2015	38.36	19.04	0.00	19.32	18.48	0.84	78	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	

Note

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

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
TOC	top of casing (surveyed reference elevation)
feet MSL	feet relative to mean sea level
DTW	depth to water
bTOC	below top of casing
LPH	liquid-phase hydrocarbons
GW	groundwater
GWE	groundwater elevation
µg/l	micrograms per liter (approx. equivalent to parts per billion, ppb)

Analytes

TPH-g	total petroleum hydrocarbons with gasoline (C6-C12)
MTBE	methyl tertiary butyl ether
TBA	tertiary butyl alcohol
DIPE	di-isopropyl ether
TAME	tertiary amyl methyl ether
ETBE	ethyl tertiary butyl ether
EDB	1,2-dibromoethane (same as ethylene dibromide)
EDC	1,2-dichloroethane (same ethylene dichloride)
8015B	EPA Method 8015B for TPH-g (C6-C12)
EPA	Environmental Protection Agency
8260B	EPA Method 8260B for BTEX/MTBE, Oxygenates, EDB, EDC, and ethanol

Table 1a
Current Additional Groundwater Analytical Results
76 Station 7124
10151 International Boulevard, Oakland, California

Well ID	Date Sampled	Methane (mg/L)	Total Alkalinity as CaCO3 (mg/L)	NO3 (mg/L)	NO2 (mg/L)	Sulfate (mg/L)	Total Sulfide (mg/L)	NVOC (mg/L)	Iron (II) Species	Dissolved Iron	Total Manganese	Comments
MW-1	6/17/2015	<0.001	170	28	<0.17	28	<0.10	<1.0	<100	<50	2,900	
MW-2	6/17/2015	<0.001	210	<0.44	<0.17	34	<0.10	<1.0	2,500	320	5,300	
MW-3	6/17/2015	0.11	310	<0.44	<0.17	<1.0	<0.50	25.0	4,700	350	6,300	A07
MW-4	6/17/2015	0.0027	210	<0.44	<0.17	51	<0.10	1.9	2,100	<50	2,400	

Note

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

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
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

CaCO3	calcium carbonate
NO3	nitrate
NO2	nitrite
NVOC	non-volatile organic carbon
RSK-175M	Method RSK-175M for Methane
310.1	EPA Method 310.1 for Total Alkalinity as CaCO3
EPA	Environmental Protection Agency
300.0	EPA Method 300.0 for NO3 and Sulfate
353.2	EPA Method 353.2 for NO2
SM-4500SD	Method SM-4500SD for Total Sulfide
415.1	EPA Method 415.1 for NVOC
SM-3500-FeD	Method SM-3500-FeD for Iron (II) Species
6010B	EPA Method 6010B for Dissolved Iron and Total Manganese

Notes

A01	PQL's and MDL's are raised due to sample dilution.
PQL	practical quantitation limit
MDL	method detection limit
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
A10	PQL's and MDL's were raised due to matrix interference.

Table 2
Historic Groundwater Gauging and Analytical Results
76 Station 7124
10151 International Boulevard, Oakland, California

Well ID	Date Sampled	TOC Elevation (feet MSL)	DTW (feet bTOC)	LPH Thickness (feet)	GW Elevation (feet MSL)	Previous Quarter GWE (feet MSL)	Change in Elevation (feet)	TPH-g (8015B)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	DIPE	TAME	ETBE	Ethanol	EDB	EDC	Comments
MW-1	11/2/2011	37.37	17.52	0.00	19.85	21.02	-1.17	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	4/6/2012	37.37	14.20	0.00	23.17	20.99	2.18	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	6/13/2013	37.37	16.81	0.00	20.56	23.17	-2.61	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	10/7/2013	37.37	17.62	0.00	19.75	20.56	-0.81	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	4/8/2014	37.37	17.52	0.00	19.85	19.75	0.10	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	10/15/2014	37.37	18.29	0.00	19.08	19.85	-0.77	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-1	6/17/2015	37.37	17.30	0.00	20.07	19.08	0.99	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	11/2/2011	37.87	17.15	0.00	20.72	20.19	0.53	96	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	4/6/2012	37.87	15.63	0.00	22.24	20.72	1.52	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	6/13/2013	37.87	18.03	0.00	19.84	22.24	-2.40	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	10/7/2013	37.87	18.74	0.00	19.13	19.84	-0.71	99	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	4/8/2014	37.87	17.80	0.00	20.07	19.13	<0.10	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	10/15/2014	37.87	19.31	0.00	18.56	20.07	-1.51	100	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-2	6/17/2015	37.87	18.55	0.00	19.32	18.56	0.76	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	11/2/2011	37.72	17.55	0.00	20.17	20.07	0.10	880	<0.50	<0.50	<0.50	<1.0	35	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	4/6/2012	37.72	16.40	0.00	21.32	20.17	1.15	1,000	<0.50	<0.50	<0.50	<1.0	210	85	<0.50	<0.50	<0.50	<250	<0.50	<0.50	A01
MW-3	6/13/2013	37.72	17.95	0.00	19.77	21.32	-1.55	<50	<0.50	<0.50	<0.50	<1.0	6.5	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	10/7/2013	37.72	18.62	0.00	19.10	20.27	-1.17	880	<0.50	<0.50	<0.50	<1.0	12	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	4/8/2014	37.72	17.10	0.00	20.62	19.10	1.52	320	<0.50	<0.50	<0.50	<1.0	150	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	10/15/2014	37.72	19.17	0.00	18.55	20.62	-2.07	1,600	<0.50	<0.50	<0.50	<1.0	27	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-3	6/17/2015	37.72	18.34	0.00	19.38	18.55	0.83	250	<0.50	<0.50	<0.50	<1.0	3.2	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	11/2/2011	38.36	18.27	0.00	20.09	20.08	0.01	170	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	4/6/2012	38.36	15.68	0.00	22.68	20.09	2.59	200	<0.50	<0.50	<0.50	<1.0	1.7	58	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	6/13/2013	38.36	18.65	0.00	19.71	22.68	-2.97	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	10/7/2013	38.36	19.33	0.00	19.03	19.71	-0.68	95	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	4/8/2014	38.36	18.04	0.00	20.32	19.03	1.29	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	10/15/2014	38.36	19.88	0.00	18.48	20.32	-1.84	190	<0.50	<0.50	<0.50	<1.0	0.63	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	
MW-4	6/17/2015	38.36	19.04	0.00	19.32	18.48	0.84	78	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	

Note

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

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
TOC	top of casing (surveyed reference elevation)
feet MSL	feet relative to mean sea level
DTW	depth to water
bTOC	below top of casing
LPH	liquid-phase hydrocarbons
GW	groundwater
GWE	groundwater elevation
µg/l	micrograms per liter (approx. equivalent to parts per billion, ppb)

Analytes

TPH-g	total petroleum hydrocarbons with gasoline (C6-C12)
MTBE	methyl tertiary butyl ether
TBA	tertiary butyl alcohol
DIPE	di-isopropyl ether
TAME	tertiary amyl methyl ether
ETBE	ethyl tertiary butyl ether
EDB	1,2-dibromoethane (same as ethylene dibromide)
EDC	1,2-dichloroethane (same ethylene dichloride)
8015B	EPA Method 8015B for TPH-g (C6-C12)
EPA	Environmental Protection Agency
8260B	EPA Method 8260B for BTEX/MTBE, Oxygenates, EDB, EDC, and ethanol

Notes

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

Table 2a
Historic Additional Groundwater Analytical Results
76 Station 7124
10151 International Boulevard, Oakland, California

Well ID	Date Sampled	Methane (mg/L)	Total Alkalinity as CaCO3 (mg/L)	NO3 (mg/L)	NO2 (mg/L)	Sulfate (mg/L)	Total Sulfide (mg/L)	NVOC (mg/L)	Iron (II) Species	Dissolved Iron	Total Manganese	Comments
MW-1	6/13/2013	<0.0010	17.52	24	<0.17	23	<0.50	1.1	<100	<50	31,000	A10
MW-1	10/7/2013	0.015	150	0	<0.17	22	<0.10	3.4	<100	<50	13,000	
MW-1	4/8/2014	0.0049	170	22	<0.17	25	<0.10	1.3	<100	<50	11,000	
MW-1	10/15/2014	<0.001	160	27	<0.17	26	<0.50	<1.0	<100	<50	39,000	
MW-1	6/17/2015	<0.001	170	28	<0.17	28	<0.10	<1.0	<100	<50	2,900	
MW-2	6/13/2013	<0.0010	180	<0.44	<0.17	20	<0.10	1.0	250	120	9,700	
MW-2	10/7/2013	0.0049	200	<0.44	<0.17	9.6	<0.10	3.2	2700	260	5,600	
MW-2	4/8/2014	0.007	210	<0.44	<0.17	33	<0.10	1.4	1,700	140	8,400	
MW-2	10/15/2014	0.011	210	<0.44	<0.17	20	<0.50	<1.0	19,000	200	6,400	
MW-2	6/17/2015	<0.001	210	<0.44	<0.17	34	<0.10	<1.0	2,500	320	5,300	
MW-3	6/13/2013	0.075	260	<0.44	<0.17	<1.0	<0.10	1.4	3,200	160	5,700	
MW-3	10/7/2013	0.071	260	<0.44	<0.17	<1.0	<0.10	3.1	9,000	710	9,600	A01
MW-3	4/8/2014	0.034	290	<0.44	<0.17	2.1	<0.10	1.3	1,200	220	6,000	A01
MW-3	10/15/2014	0.069	290	<0.44	<0.17	<1.0	<0.50	<1.0	<100	93	6,900	
MW-3	6/17/2015	0.11	310	<0.44	<0.17	<1.0	<0.50	25.0	4,700	350	6,300	A07
MW-4	6/13/2013	<0.0010	210	<0.44	<0.17	15	<0.50	4.7	5,200	<50	7,900	A01, A10
MW-4	10/7/2013	<0.0010	190	<0.44	<0.17	18	<0.10	8.2	13,000	220	5,000	A01
MW-4	4/8/2014	<0.0010	130	5	<0.17	17	<0.10	12.0	280	200	1,200	A01
MW-4	10/15/2014	0.17	210	<0.44	<0.17	24	<0.50	1.5	5,800	<50	8,000	
MW-4	6/17/2015	0.0027	210	<0.44	<0.17	51	<0.10	1.9	2,100	<50	2,400	

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

Standard Abbreviations

--	not analyzed, measured, or collected
<	not detected at or above laboratory detection limit
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

CaCO3	calcium carbonate
NO3	nitrate
NO2	nitrite
NVOC	non-volatile organic carbon
RSK-175M	Method RSK-175M for Methane
310.1	EPA Method 310.1 for Total Alkalinity as CaCO3
EPA	Environmental Protection Agency
300.0	EPA Method 300.0 for NO3 and Sulfate
353.2	EPA Method 353.2 for NO2
SM-4500SD	Method SM-4500SD for Total Sulfide
415.1	EPA Method 415.1 for NVOC
SM-3500-FeD	Method SM-3500-FeD for Iron (II) Species
6010B	EPA Method 6010B for Dissolved Iron and Total Manganese

Notes

A01	PQL's and MDL's are raised due to sample dilution.
PQL	practical quantitation limit
MDL	method detection limit
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
A10	PQL's and MDL's were raised due to matrix interference.

ARCADIS

Attachment A

Field Data Sheets and General Procedures

GETTLER-RYAN INC.

TRANSMITTAL

June 26, 2015
G-R #385639

TO: Ms. Katherine Brandt
ARCADIS
2000 Powell Street, 7th Floor
Emeryville, CA 94608

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6805 Sierra Court, Suite G
Dublin, California 94568

RE: Chevron Facility
#351638/7124
10151 International Boulevard
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package **First Semi-Annual Event of June 17, 2015**

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/351638 7124

WELL CONDITION STATUS SHEET

Client/
Facility #: Chevron #351638 / 7124

Site Address: 10151 International Blvd.

City: Oakland, CA

Job #: 385639

Event Date: 6/17/15

Sampler: JH

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-1	ok	—					—	N	N	12" emco	Y
MW-4	ok	—	1RM	1RB	ok		—	↓	↓	12" Morrison	↓
MW-2	ok	—					—	↓	↓	12" emco	↓
MW-3	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 Seaport Environmental located in Redwood City, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 6/17/15 (inclusive)
City: Oakland, CA Sampler: SH

Well ID MW- 1 Date Monitored: 6/17/15
Well Diameter 4 in.
Total Depth 29.80 ft.
Depth to Water 17.30 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

12.50 xVF .66 = 8.25 x3 case volume = Estimated Purge Volume: 24.75 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.80

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

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

Start Time (purge): 0650 Weather Conditions: Clear
Sample Time/Date: 0725 / 6/17/15 Water Color: Cloudy Odor: Y / N
Approx. Flow Rate: 1-2 gpm. Sediment Description: Cloudy
Did well de-water? NO If yes, Time: Volume: gal. DTW @ Sampling: 19.52

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0654	8	7.49	547	18.6	PRE: 1.0	PRE: 119
0658	16	7.37	559	18.5		
0703	25	7.31	573	18.3		
					POST: 1.2	POST: 140

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 1	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

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 #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 6/17/15 (inclusive)
City: Oakland, CA Sampler: JH

Well ID MW- 2 Date Monitored: 6/17/15
Well Diameter 4 in.
Total Depth 25.24 ft.
Depth to Water 18.55 ft.

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

☐ Check if water column is less then 0.50 ft.

6.69 xVF .66 = 4.41 x3 case volume = Estimated Purge Volume: 13.24 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.88

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

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

Start Time (purge): 0550 Weather Conditions: Cloudy
Sample Time/Date: 0625 / 6/17/15 Water Color: Cloudy Odor: Y / (N)
Approx. Flow Rate: 1 gpm. Sediment Description: Cloudy
Did well de-water? NO If yes, Time: Volume: gal. DTW @ Sampling: 19.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0554	4	7.64	498	18.6	PRE: 1.2	PRE: 138
0558	8	7.69	507	18.4		
0603	13	7.73	515	18.3		
					POST: 1.4	POST: 155

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 2	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

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 #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 6/17/15 (inclusive)
City: Oakland, CA Sampler: JH

Well ID MW-3 Date Monitored: 6/17/15
Well Diameter 4 in.
Total Depth 25.18 ft.
Depth to Water 18.34 ft.

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

☐ Check if water column is less then 0.50 ft.

6.84 xVF .66 = 4.51 x3 case volume = Estimated Purge Volume: 13.54 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.70

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	
Stack Pump	X
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

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

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

Start Time (purge): 0740 Weather Conditions: Clear
Sample Time/Date: 0820 / 6/17/15 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: 1 gpm. Sediment Description: Cloudy
Did well de-water? No If yes, Time: Volume: gal. DTW @ Sampling: 19.41

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0744	4	7.29	584	18.7	PRE: 1.3	PRE: 106
0748	8	7.21	611	18.4		
0754	14	7.06	642	18.3		
					POST: 1.4	POST: 128

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

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 #351638 / 7124 | Job Number: 385639
Site Address: 10151 International Blvd. | Event Date: 6/17/15 (inclusive)
City: Oakland, CA | Sampler: JH

Well ID: MW- 4 | Date Monitored: 6/17/15
Well Diameter: 4 in.
Total Depth: 24.91 ft.
Depth to Water: 19.04 ft.

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

☐ Check if water column is less then 0.50 ft.

5.87 xVF .66 = 3.87 x3 case volume = Estimated Purge Volume: 11.62 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 20.21

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	
Stack Pump	X
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

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

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

Start Time (purge): 0500 | Weather Conditions: Cloudy
Sample Time/Date: 0525 / 6/17/15 | Water Color: Cloudy Odor: Y / N
Approx. Flow Rate: 1 gpm. | Sediment Description: Cloudy
Did well de-water? No If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 19.65

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0504	4	7.84	438	18.5	PRE: 1.1	PRE: 136
0508	8	7.70	431	18.4		
0512	12	7.61	420	18.1		
					POST: 1.4	POST: 155

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 4	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

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: 7127	Union Oil Consultant: Arcadis
Site Global ID: T0600173591	Consultant Contact: K. Brandt
Site Address: 10151 International Blvd Oakland CA	Consultant Phone No.: 510 596 9675
	Sampling Company: ~~TRC~~ GR inc
Union Oil PM: N. Arceneaux	Sampled By (PRINT): Sam Herron
Union Oil PM Phone No.: 925-790 6912	Sampler Signature: [signature]
Charge Code: NWRTB- 0 351638 -0- LAB	**BC Laboratories, Inc.** **Project Manager: Molly Meyers** 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

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

ANALYSES REQUIRED

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

Special Instructions

SAMPLE ID

Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by ~~GCMS~~ (C6-C12)	BTEX/MTBE/OXYS by EPA 8260B	~~Ethanol by EPA 8260B~~ Methane	EPA 8260B Full List with OXYS	Nitrate/Nitrite/Sulfate	Alkalinity/Dissolved Iron	Sulfide (376.2)	TOC	Ferrous Iron	Total Manganese	Notes / Comments
QA	W-S-A		150617	—	2		X	X									
MW-1	W-S-A		↓	0725	13		↓	↓	X		X	X	X	X	X	X	
MW-2	W-S-A		↓	0625	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓	
MW-3	W-S-A		↓	0820	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓	
MW-4	W-S-A		↓	0525	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓	
	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:
[signature]	GR inc	6/17/15 1421	[signature]	[illegible]	[illegible] 1600			
Received By	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time :**	**Received By**	**Company**	**Date / Time:**
[illegible]		[illegible] 1431	Stacy Bogan	BC Lab	6-17-15 1600			

ARCADIS

Attachment B

Historical Groundwater Results from TRC

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-1														
4/8/2002	37.37	14.27	0.00	23.10	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	ND<2.0	
7/28/2002	37.37	15.88	0.00	21.49	-1.61	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
11/3/2002	37.37	16.75	0.00	20.62	-0.87	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
1/24/2003	37.37	13.94	0.00	23.43	2.81	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
4/2/2003	37.37	14.99	0.00	22.38	-1.05	--	460	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
7/1/2003	37.37	15.48	0.00	21.89	-0.49	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
10/2/2003	37.37	16.68	0.00	20.69	-1.20	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
1/9/2004	37.37	13.79	0.00	23.58	2.89	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
4/26/2004	37.37	15.21	0.00	22.16	-1.42	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
7/22/2004	37.37	16.43	0.00	20.94	-1.22	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
10/29/2004	37.37	16.14	0.00	21.23	0.29	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.51	
1/12/2005	37.37	12.83	0.00	24.54	3.31	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.52	
6/20/2005	37.37	14.38	0.00	22.99	-1.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.53	
9/23/2005	37.37	15.92	0.00	21.45	-1.54	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.54	
12/13/2005	37.37	16.09	0.00	21.28	-0.17	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.55	
3/24/2006	37.37	11.85	0.00	25.52	4.24	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.56	
5/30/2006	37.37	13.30	0.00	24.07	-1.45	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.57	
8/22/2006	37.37	15.11	0.00	22.26	-1.81	--	ND<50	ND<0.50		ND<0.50	ND<0.50	--	ND<0.58	
10/31/2006	37.37	16.11	0.00	21.26	-1.00	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.59	
1/12/2007	37.37	15.55	0.00	21.82	0.56	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.60	
4/4/2007	37.37	15.31	0.00	22.06	0.24	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.61	
7/5/2007	37.37	16.21	0.00	21.16	-0.90	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.62	
10/1/2007	37.37	17.13	0.00	20.24	-0.92	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.63	
1/11/2008	37.37	14.48	0.00	22.89	2.65	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.64	
4/4/2008	37.37	16.17	0.00	21.20	-1.69	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.65	Gauged on 5-22-08
7/2/2008	37.37	16.70	0.00	20.67	-0.53	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.66	
10/2/2008	37.37	17.50	0.00	19.87	-0.80	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.67	
1/14/2009	37.37	17.30	0.00	20.07	0.20	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.68	
4/16/2009	37.37	15.60	0.00	21.77	1.70	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.69	
7/16/2009	37.37	16.90	0.00	20.47	-1.30	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.70	
1/6/2010	37.37	16.35	0.00	21.02	0.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.71	
MW-2														
4/8/2002	37.87	15.86	0.00	22.01	--	4400	--	ND<2.5	ND<2.5	6.4	ND<2.5	380	490	
7/28/2002	37.87	17.28	0.00	20.59	-1.42	--	3200	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	170	
11/3/2002	37.87	18.03	0.00	19.84	-0.75	--	3800	ND<5.0	ND<5.0	ND<5.0	ND<10	--	72	
1/24/2003	37.87	15.59	0.00	22.28	2.44	--	410	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	490	
4/2/2003	37.87	16.50	0.00	21.37	-0.91	--	1000	ND<5.0	ND<5.0	ND<5.0	ND<10	--	180	
7/1/2003	37.87	16.94	0.00	20.93	-0.44	--	1900	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	120	
10/2/2003	37.87	17.93	0.00	19.94	-0.99	--	6900	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	32	
1/9/2004	37.87	15.42	0.00	22.45	2.51	--	1000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	300	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
4/26/2004	37.87	--	--	--	--	--	--	--	--	--	--	--	--	Covered with asphalt
7/22/2004	37.87	--	--	--	--	--	--	--	--	--	--	--	--	Covered with asphalt
10/29/2004	37.87	--	0.00	--	--	--	--	--	--	--	--	--	--	Well is paved over.
1/12/2005	37.87	--	--	--	--	--	--	--	--	--	--	--	--	Well was paved over.
6/20/2005	37.87	15.94	0.00	21.93	--	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	46	
9/23/2005	37.87	17.29	0.00	20.58	-1.35	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	10	
12/13/2005	37.87	17.41	0.00	20.46	-0.12	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	11	
3/24/2006	37.87	13.77	0.00	24.10	3.64	--	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	15	
5/30/2006	37.87	15.16	0.00	22.71	-1.39	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	6.6	
8/22/2006	37.87	16.49	0.00	21.38	-1.33	--	81	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	3.0	
10/31/2006	37.87	17.15	0.00	20.72	-0.66	--	93	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	2.0	
1/12/2007	37.87	17.07	0.00	20.80	0.08	--	230	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	4.3	
4/4/2007	37.87	17.84	0.00	20.03	-0.77	--	110	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	2.5	
7/5/2007	37.87	17.51	0.00	20.36	0.33	--	150	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	2.6	
10/1/2007	37.87	18.25	0.00	19.62	-0.74	--	160	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	2.0	
1/11/2008	37.87	16.80	0.00	21.07	1.45	--	130	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	7.7	
5/22/2008	37.87	17.46	0.00	20.41	-0.66	--	140	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.2	Gauged and sampled on 5-22-08
7/2/2008	37.87	17.94	0.00	19.93	-0.48	--	75	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	
10/2/2008	37.87	18.65	0.00	19.22	-0.71	--	130	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.1	
1/14/2009	37.87	18.40	0.00	19.47	0.25	--	66	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.5	
4/16/2009	37.87	16.94	0.00	20.93	1.46	--	93	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.2	
7/16/2009	37.87	18.15	0.00	19.72	-1.21	--	92	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.6	
1/6/2010	37.87	17.68	0.00	20.19	0.47	--	150	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.0	
MW-3														
4/8/2002	37.72	15.86	0.00	21.86	--	8700	--	65	ND<25	400	ND<25	6500	8300	
7/28/2002	37.72	17.22	0.00	20.50	-1.36	--	4500	ND<25	ND<25	ND<25	ND<50	--	1100	
11/3/2002	37.72	17.90	0.00	19.82	-0.68	--	25000	ND<5.0	ND<5.0	25	ND<10	--	470	
1/24/2003	37.72	15.57	0.00	22.15	2.33	--	6000	ND<25	ND<25	94	ND<50	--	10000	
4/2/2003	37.72	16.45	0.00	21.27	-0.88	--	130000	ND<100	ND<100	ND<100	ND<200	--	4400	
7/1/2003	37.72	16.88	0.00	20.84	-0.43	--	9400	ND<10	ND<10	ND<10	ND<20	--	2200	
10/2/2003	37.72	17.85	0.00	19.87	-0.97	--	73000	ND<50	ND<50	ND<50	ND<100	--	460	
1/9/2004	37.72	15.31	0.00	22.41	2.54	--	8700	ND<25	ND<25	98	ND<50	--	3800	
4/26/2004	37.72	16.62	0.00	21.10	-1.31	--	6700	ND<25	ND<25	ND<25	ND<50	--	3900	
7/22/2004	37.72	17.62	0.00	20.10	-1.00	--	13000	ND<25	ND<25	ND<25	ND<50	--	980	
10/29/2004	37.72	17.29	0.00	20.43	0.33	--	4600	ND<5.0	ND<5.0	13	ND<10	--	640	
1/12/2005	37.72	14.64	0.00	23.08	2.65	--	6100	0.88	0.99	30	2.2	--	6900	
6/20/2005	37.72	15.91	0.00	21.81	-1.27	--	1900	ND<0.50	0.21J	0.52	0.46J	--	960	
9/23/2005	37.72	17.20	0.00	20.52	-1.29	--	2400	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	160	
12/13/2005	37.72	17.32	0.00	20.40	-0.12	--	2100	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	340	
3/24/2006	37.72	13.86	0.00	23.86	3.46	--	2200	ND<5.0	ND<5.0	ND<5.0	ND<10	--	970	
5/30/2006	37.72	15.69	0.00	22.03	-1.83	--	1500	ND<12	ND<12	ND<12	ND<25	--	760	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
8/22/2006	37.72	16.51	0.00	21.21	-0.82	--	1900	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	160	
10/31/2006	37.72	17.36	0.00	20.36	-0.85	--	2200	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	58	
1/12/2007	37.72	16.85	0.00	20.87	0.51	--	2600	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	680	
4/4/2007	37.72	16.62	0.00	21.10	0.23	--	1700	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	650	
7/5/2007	37.72	17.42	0.00	20.30	-0.80	--	2400	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	160	
10/1/2007	37.72	18.16	0.00	19.56	-0.74	--	1700	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	87	
1/11/2008	37.72	15.84	0.00	21.88	2.32	--	2200	ND<0.50	ND<0.50	1.6	ND<1.0	--	1300	
4/4/2008	37.72	17.30	0.00	20.42	-1.46	--	1600	ND<1.0	ND<1.0	ND<1.0	ND<2.0	--	470	Gauged on 5-22-08
7/2/2008	37.72	17.84	0.00	19.88	-0.54	--	1200	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	91	
10/2/2008	37.72	18.50	0.00	19.22	-0.66	--	2100	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	84	
1/14/2009	37.72	18.33	0.00	19.39	0.17	--	2000	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	320	
4/16/2009	37.72	16.92	0.00	20.80	1.41	--	1800	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	560	
7/16/2009	37.72	18.05	0.00	19.67	-1.13	--	1900	ND<5.0	ND<5.0	ND<5.0	ND<10	--	100	
1/6/2010	37.72	17.65	0.00	20.07	0.40	--	2200	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1300	
MW-4														
4/8/2002	38.36	16.59	0.00	21.77	--	13000	--	ND<5.0	ND<5.0	28	ND<5.0	790	980	
7/28/2002	38.36	17.93	0.00	20.43	-1.34	--	18000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	170	
11/3/2002	38.36	18.66	0.00	19.70	-0.73	--	220	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.7	
1/24/2003	38.36	16.27	0.00	22.09	2.39	--	ND<1000	ND<10	ND<10	ND<10	ND<20	--	1000	
4/2/2003	38.36	17.19	0.00	21.17	-0.92	--	130000	ND<100	ND<100	ND<100	ND<200	--	ND<400	
7/1/2003	38.36	17.61	0.00	20.75	-0.42	--	15000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	170	
10/2/2003	38.36	18.58	0.00	19.78	-0.97	--	7100	ND<10	ND<10	ND<10	ND<20	--	70	
1/9/2004	38.36	16.15	0.00	22.21	2.43	--	18000	ND<10	ND<10	ND<10	ND<20	--	530	
4/26/2004	38.36	17.20	0.00	21.16	-1.05	--	6500	ND<10	ND<10	ND<10	ND<20	--	240	
7/22/2004	38.36	18.34	0.00	20.02	-1.14	--	18000	ND<10	ND<10	ND<10	ND<20	--	48	
10/29/2004	38.36	18.13	0.00	20.23	0.21	--	2700	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	76	
1/12/2005	38.36	15.22	0.00	23.14	2.91	--	1300	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	620	
6/20/2005	38.36	16.63	0.00	21.73	-1.41	--	980	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	110	
9/23/2005	38.36	17.93	0.00	20.43	-1.30	--	1500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	34	
12/13/2005	38.36	18.04	0.00	20.32	-0.11	--	3900	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	36	
3/24/2006	38.36	14.48	0.00	23.88	3.56	--	1500	ND<12	ND<12	ND<12	ND<25	--	200	
5/30/2006	38.36	15.79	0.00	22.57	-1.31	--	1200	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	130	
8/22/2006	38.36	17.26	0.00	21.10	-1.47	--	980	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	33	
10/31/2006	38.36	18.08	0.00	20.28	-0.82	--	1300	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	10	
1/12/2007	38.36	17.57	0.00	20.79	0.51	--	820	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	28	
4/4/2007	38.36	17.40	0.00	20.96	0.17	--	460	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	41	
7/5/2007	38.36	18.02	0.00	20.34	-0.62	--	920	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	7.0	
10/1/2007	38.36	18.89	0.00	19.47	-0.87	--	560	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	3.0	
1/11/2008	38.36	16.56	0.00	21.80	2.33	--	340	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	21	
5/22/2008	38.36	18.10	0.00	20.26	-1.54	--	520	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.6	Gauged and sampled on 5-22-08
7/2/2008	38.36	18.55	0.00	19.81	-0.45	--	340	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.3	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
10/2/2008	38.36	19.25	0.00	19.11	-0.70	--	790	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	
1/14/2009	38.36	19.10	0.00	19.26	0.15	--	430	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	
4/16/2009	38.36	17.61	0.00	20.75	1.49	--	390	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	16	
7/16/2009	38.36	18.70	0.00	19.66	-1.09	--	310	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.2	
1/6/2010	38.36	18.28	0.00	20.08	0.42	--	380	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TBA (µg/l)	Ethanol (8015B) (mg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Comments
MW-1									
7/28/2002	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
11/3/2002	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
1/24/2003	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
4/2/2003	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
7/1/2003	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
10/2/2003	ND<100	--	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
1/9/2004	ND<100	--	ND<500	ND<2	ND<2.0	ND<2	ND<2	ND<2	
4/26/2004	ND<5.0	--	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	
7/22/2004	ND<5.0	--	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	
10/29/2004	ND<5.0	--	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	
1/12/2005	ND<5.0	--	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	
6/20/2005	ND<10	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
9/23/2005	ND<10	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
12/13/2005	ND<10	--	ND<250	21.449999	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
3/24/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/30/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
8/22/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/31/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/12/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/5/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/1/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/11/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/14/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/16/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/16/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/6/2010	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
MW-2									
4/8/2002	ND<2000	ND<10000	--	ND<40	ND<40	ND<40	ND<40	ND<40	
7/28/2002	ND<500	ND<2500	--	ND<10	ND<10	ND<10	ND<10	ND<10	
11/3/2002	ND<1000	ND<5000	--	ND<20	ND<20	ND<20	ND<20	ND<20	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TBA (µg/l)	Ethanol (8015B) (mg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Comments
1/24/2003	ND<500	ND<2500	--	ND<10	ND<10	ND<10	ND<10	ND<10	
4/2/2003	ND<1000	ND<5000	--	ND<20	ND<20	ND<20	ND<20	ND<20	
7/1/2003	ND<500	ND<2500	--	ND<10	ND<10	ND<10	ND<10	ND<10	
10/2/2003	ND<100	--	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
1/9/2004	ND<500	--	ND<2500	ND<10	ND<10	ND<10	ND<10	ND<10	
6/20/2005	25	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
9/23/2005	ND<10	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
12/13/2005	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
3/24/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/30/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
8/22/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/31/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/12/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/5/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/1/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/11/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/22/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/14/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/16/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/16/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/6/2010	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
MW-3									
10/2/2003	ND<10000	--	ND<50000	ND<200	ND<200	ND<200	ND<200	ND<200	
1/9/2004	ND<5000	--	ND<25000	ND<100	ND<100	ND<100	ND<100	ND<100	
4/26/2004	ND<250	--	ND<2500	ND<25	ND<25	ND<50	ND<25	ND<25	
7/22/2004	ND<250	--	ND<2500	ND<25	ND<25	ND<50	ND<25	ND<25	
10/29/2004	ND<50	--	ND<500	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0	
1/12/2005	1300	--	ND<2500	ND<25	ND<25	ND<50	ND<25	ND<25	
6/20/2005	39	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.31J	
9/23/2005	ND<10	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
12/13/2005	ND<50	--	ND<1200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	
3/24/2006	ND<100	--	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TBA (µg/l)	Ethanol (8015B) (mg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Comments
5/30/2006	ND<250	--	ND<6200	ND<12	ND<12	ND<12	ND<12	ND<12	
8/22/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/31/2006	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/12/2007	43	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2007	130	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/5/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/1/2007	ND<20	--	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	
1/11/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2008	ND<20	--	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	
7/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/14/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/16/2009	ND<50	--	ND<1200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	
7/16/2009	ND<100	--	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	
1/6/2010	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
MW-4									
4/8/2002	ND<5000	ND<25000	--	ND<100	ND<100	ND<100	ND<100	ND<100	
7/28/2002	ND<500	ND<2500	--	ND<10	ND<10	ND<10	ND<10	ND<10	
11/3/2002	ND<100	ND<500	--	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
1/24/2003	ND<2000	ND<10000	--	ND<40	ND<40	ND<40	ND<40	ND<40	
4/2/2003	ND<20000	ND<100000	--	ND<400	ND<400	ND<400	ND<400	ND<400	
7/1/2003	ND<500	ND<2500	--	ND<10	ND<10	ND<10	ND<10	ND<10	
10/2/2003	ND<2000	--	ND<10000	ND<40	ND<40	ND<40	ND<40	ND<40	
1/9/2004	ND<2000	--	ND<10000	ND<40	ND<40	ND<40	ND<40	ND<40	
4/26/2004	430	--	ND<1000	ND<10	ND<10	ND<20	ND<10	ND<10	
7/22/2004	ND<100	--	ND<1000	ND<10	ND<10	ND<20	ND<10	ND<10	
10/29/2004	63	--	ND<250	ND<2.5	ND<2.5	ND<5.0	ND<2.5	ND<2.5	
1/12/2005	1300	--	ND<250	ND<10	ND<2.5	ND<5.0	ND<2.5	ND<2.5	
6/20/2005	580	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
9/23/2005	92	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
12/13/2005	50	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
3/24/2006	1900	--	ND<6200	ND<12	ND<12	ND<12	ND<12	ND<12	
5/30/2006	ND<50	--	ND<1200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	
8/22/2006	150	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/31/2006	43	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 7124

Date Sampled	TBA (µg/l)	Ethanol (8015B) (mg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Comments
1/12/2007	72	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/4/2007	260	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/5/2007	18	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/1/2007	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/11/2008	140	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/22/2008	52	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/2/2008	15	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/2/2008	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/14/2009	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
4/16/2009	170	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
7/16/2009	20	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/6/2010	ND<10	--	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	

ARCADIS

Attachment C

Laboratory Report and Chain-of-Custody Documentation

Date of Report: 07/01/2015

Kathy Brandt

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Client Project:	351638
BCL Project:	7124
BCL Work Order:	1514902
Invoice ID:	B207216

Enclosed are the results of analyses for samples received by the laboratory on 6/17/2015. 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

15-14902

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: 7124	Union Oil Consultant: Arcadis
Site Global ID: T0600173591	Consultant Contact: K. Brandt
Site Address: 10151 International Blvd Oakland CA	Consultant Phone No.: 510 596 9675
Union Oil PM: N. Arceneaux	Sampling Company: GR Inc
Union Oil PM Phone No.: 925-790 6912	Sampled By (PRINT): Sim Herron
Charge Code: NWRTB-0 351638 -0- LAB	Sampler Signature:
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911

ANALYSES REQUIRED

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

Special Instructions

Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by (C6-C12)	BTEX/MTBE/OXYS by EPA 8260B	Methane	EPA 8260B Full List with OXYS	Nitrate/Nitrite/Sulfate	Alkalinity/Dissolved Iron	Sulfide (376.2)	TOC	Ferrous Iron	Total Manganese	Notes / Comments
1 QA	W-S-A		150617	—	2		X	X									
2 MW-1	W-S-A			0725	13				X		X	X	X	X	X	X	
3 MW-2	W-S-A			0625													
4 MW-3	W-S-A			0820													
5 MW-4	W-S-A			0525													
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

SHORT HOLDING TIME: Cr^{+6} NO_2 NO_3 OP SS DO Cl_2 BOD MBAS COT

CHK BY: WA VNT TOC SUL SUM

DISTRIBUTION: SUB-OUT ☐

Relinquished By	Company	Date / Time:
[signature]	GR Inc	6/17/15 1430
Received By	Company	Date / Time:
GETTLER-RYAN FRIDGE	GR Inc	06-17-15 1430

Relinquished By	Company	Date / Time :
[signature]	GR Inc	06-17-15 1600
Received By	Company	Date / Time :
Hang Bogan	BCLab	6-17-15 1600

Relinquished By	Company	Date / Time:
Hang Bogan	BCLab	6-17-15 1830
Received By	Company	Date / Time:
[signature]	BCLAB	6/17/15 18:30

RCL. [signature] 6/17/15 2220

6-17-15 2220

Chain of Custody and Cooler Receipt Form for 1514902 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 15-14902

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☒ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	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: 208

Temperature: (A) 0.5 °C / (C) 0.6 °C

Date/Time 6/17/15 2031

Analyst Init KIB

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES		I	I	I	I					
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz		J	J	J	J					
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE		L	L	L	L					
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON		M	M	M	M					
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK	AB									
40ml VOA VIAL		A-F	A-F	A-F	A-F					
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL-~~504~~ 525		GH	GH	GH	GH					
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz Amber EPA 548										
QT EPA 549										
QT EPA 8015M										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
Tedlar Bag										
FERROUS IRON		K	K	K	K					
ENCORE										
SMART KIT										
Summa Canister										

Comments:

Sample Numbering Completed By: Date/Time: 6-17-15 2350

A = Actual / C = Corrected

Rev. No. 19 05/06/2015 [S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 19]

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1514902-01	**COC Number:**	---	**Receive Date:** 06/17/2015 22:20
	Project Number:	7124	**Sampling Date:** 06/17/2015 00:00
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	QA-W-150617	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Blank Water
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): QA
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1514902-02	**COC Number:**	---	**Receive Date:** 06/17/2015 22:20
	Project Number:	7124	**Sampling Date:** 06/17/2015 07:25
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1-W-150617	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Water
			Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): MW-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1514902-03	**COC Number:**	---	**Receive Date:** 06/17/2015 22:20
	Project Number:	7124	**Sampling Date:** 06/17/2015 06:25
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-2-W-150617	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Water
			Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): MW-2
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1514902-04	**COC Number:**	---	**Receive Date:**	06/17/2015 22:20
	Project Number:	7124	**Sampling Date:**	06/17/2015 08:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-3-W-150617	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time Delivery Work Order: Global ID: T0600173591 Location ID (FieldPoint): MW-3 Matrix: W Sample QC Type (SACode): CS Cooler ID:			
1514902-05	**COC Number:**	---	**Receive Date:**	06/17/2015 22:20
	Project Number:	7124	**Sampling Date:**	06/17/2015 05:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-4-W-150617	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time Delivery Work Order: Global ID: T0600173591 Location ID (FieldPoint): MW-4 Matrix: W Sample QC Type (SACode): CS Cooler ID:			

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1514902-01 | **Client Sample Name:** 7124, QA-W-150617, 6/17/2015 12:00:00AM

Constituent	Result	Units	PQL	MDL	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
1,2-Dichloroethane-d4 (Surrogate)	85.6	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/22/15	06/22/15 11:51	SE1	MS-V10	1	BYF2071

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1514902-01 | **Client Sample Name:** 7124, QA-W-150617, 6/17/2015 12:00:00AM

Constituent	Result	Units	PQL	MDL	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)	105	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	06/19/15	06/19/15 15:45	AKM	GC-V9	1	BYF1571

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1514902-02 | **Client Sample Name:** 7124, MW-1-W-150617, 6/17/2015 7:25:00AM

Constituent	Result	Units	PQL	MDL	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
1,2-Dichloroethane-d4 (Surrogate)	85.2	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	89.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/22/15	06/22/15 12:09	SE1	MS-V10	1	BYF2071

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1514902-02 | **Client Sample Name:** 7124, MW-1-W-150617, 6/17/2015 7:25:00AM

Constituent	Result	Units	PQL	MDL	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)	100	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	06/19/15	06/19/15 16:26	AKM	GC-V9	1	BYF1571

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID: 1514902-02 | **Client Sample Name:** 7124, MW-1-W-150617, 6/17/2015 7:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	ND	mg/L	0.0010		RSK-175M	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	06/29/15	06/30/15 10:18	JH2	GC-V1	1	BYF2548

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID: 1514902-02 | **Client Sample Name:** 7124, MW-1-W-150617, 6/17/2015 7:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**170**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	**28**	**mg/L**	**0.44**		**EPA-300.0**	ND		2
Sulfate	**28**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	ND	ug/L	100		SM-3500-FeD	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	ND	mg/L	1.0		EPA-415.1	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	06/19/15	06/19/15 14:16	RML	MET-1	1	BYF1867
2	EPA-300.0	06/18/15	06/18/15 11:37	OLH	IC1	1	BYF1752
3	SM-3500-FeD	06/18/15	06/18/15 07:43	TDC	KONE-1	1	BYF1811
4	EPA-353.2	06/18/15	06/18/15 07:58	TDC	KONE-1	1	BYF1762
5	SM-4500SD	06/23/15	06/23/15 20:30	DIW	SPEC05	1	BYF2160
6	EPA-415.1	06/19/15	06/19/15 15:48	ALW	TOC2	1	BYF1786

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID: 1514902-02 | **Client Sample Name:** 7124, MW-1-W-150617, 6/17/2015 7:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**2900**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	06/19/15	06/22/15 16:12	ARD	PE-OP3	1	BYF1847
2	EPA-6010B	06/26/15	06/29/15 10:10	ARD	PE-OP2	1	BYF2482

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1514902-03 | **Client Sample Name:** 7124, MW-2-W-150617, 6/17/2015 6:25:00AM

Constituent	Result	Units	PQL	MDL	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
1,2-Dichloroethane-d4 (Surrogate)	84.2	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/22/15	06/22/15 12:28	SE1	MS-V10	1	BYF2071

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1514902-03 | **Client Sample Name:** 7124, MW-2-W-150617, 6/17/2015 6:25:00AM

Constituent	Result	Units	PQL	MDL	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)	103	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	06/19/15	06/19/15 16:46	AKM	GC-V9	1	BYF1571

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID: 1514902-03 | **Client Sample Name:** 7124, MW-2-W-150617, 6/17/2015 6:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	ND	mg/L	0.0010		RSK-175M	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	06/29/15	06/30/15 10:23	JH2	GC-V1	1	BYF2548

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID: 1514902-03 | **Client Sample Name:** 7124, MW-2-W-150617, 6/17/2015 6:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**210**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	ND	mg/L	0.44		EPA-300.0	ND		2
Sulfate	**34**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	**2500**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	ND	mg/L	1.0		EPA-415.1	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	06/19/15	06/19/15 14:22	RML	MET-1	1	BYF1867
2	EPA-300.0	06/18/15	06/18/15 12:47	OLH	IC1	1	BYF1752
3	SM-3500-FeD	06/18/15	06/18/15 07:43	TDC	KONE-1	1	BYF1811
4	EPA-353.2	06/18/15	06/18/15 07:58	TDC	KONE-1	1	BYF1762
5	SM-4500SD	06/23/15	06/23/15 20:30	DIW	SPEC05	1	BYF2160
6	EPA-415.1	06/19/15	06/19/15 16:03	ALW	TOC2	1	BYF1786

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID: 1514902-03 | **Client Sample Name:** 7124, MW-2-W-150617, 6/17/2015 6:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	**320**	**ug/L**	**50**		**EPA-6010B**	ND		1
Total Manganese	**5300**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	06/19/15	06/22/15 16:14	ARD	PE-OP3	1	BYF1847
2	EPA-6010B	06/26/15	06/29/15 10:11	ARD	PE-OP2	1	BYF2482

Arcadis
2000 Powell Street 7th Floor
Emeryville, CA 94608

Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1514902-04 | **Client Sample Name:** 7124, MW-3-W-150617, 6/17/2015 8:20:00AM

Constituent	Result	Units	PQL	MDL	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	**3.2**	**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
1,2-Dichloroethane-d4 (Surrogate)	88.4	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	108	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/22/15	06/22/15 18:09	SE1	MS-V10	1	BYF2071

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1514902-04 | **Client Sample Name:** 7124, MW-3-W-150617, 6/17/2015 8:20:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**250**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	114	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	06/23/15	06/23/15 22:29	AKM	GC-V9	1	BYF1893

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID: 1514902-04 | **Client Sample Name:** 7124, MW-3-W-150617, 6/17/2015 8:20:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	**0.11**	**mg/L**	**0.0010**		**RSK-175M**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	06/29/15	06/30/15 10:27	JH2	GC-V1	1	BYF2623

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID: 1514902-04 | **Client Sample Name:** 7124, MW-3-W-150617, 6/17/2015 8:20:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**310**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	ND	mg/L	0.44		EPA-300.0	ND		2
Sulfate	ND	mg/L	1.0		EPA-300.0	ND		2
Iron (II) Species	**4700**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	**25**	**mg/L**	**5.0**		**EPA-415.1**	ND	**A07**	6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	06/19/15	06/19/15 14:29	RML	MET-1	1	BYF1867
2	EPA-300.0	06/18/15	06/18/15 13:05	OLH	IC1	1	BYF1752
3	SM-3500-FeD	06/18/15	06/18/15 07:43	TDC	KONE-1	1	BYF1811
4	EPA-353.2	06/18/15	06/18/15 07:58	TDC	KONE-1	1	BYF1762
5	SM-4500SD	06/23/15	06/23/15 20:30	DIW	SPEC05	1	BYF2160
6	EPA-415.1	06/19/15	06/22/15 07:25	ALW	TOC2	5	BYF1786

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID: 1514902-04 | **Client Sample Name:** 7124, MW-3-W-150617, 6/17/2015 8:20:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	**350**	**ug/L**	**50**		**EPA-6010B**	ND		1
Total Manganese	**6300**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	06/19/15	06/22/15 16:16	ARD	PE-OP3	1	BYF1847
2	EPA-6010B	06/26/15	06/29/15 10:13	ARD	PE-OP2	1	BYF2482

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1514902-05 | **Client Sample Name:** 7124, MW-4-W-150617, 6/17/2015 5:25:00AM

Constituent	Result	Units	PQL	MDL	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
1,2-Dichloroethane-d4 (Surrogate)	85.8	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/22/15	06/22/15 17:51	SE1	MS-V10	1	BYF2071

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1514902-05 | **Client Sample Name:** 7124, MW-4-W-150617, 6/17/2015 5:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**78**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	98.5	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	06/19/15	06/19/15 17:06	AKM	GC-V9	1	BYF1571

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID: 1514902-05 | **Client Sample Name:** 7124, MW-4-W-150617, 6/17/2015 5:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	**0.0027**	**mg/L**	**0.0010**		**RSK-175M**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	06/29/15	06/30/15 10:31	JH2	GC-V1	1	BYF2623

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID: 1514902-05 | **Client Sample Name:** 7124, MW-4-W-150617, 6/17/2015 5:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**210**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	ND	mg/L	0.44		EPA-300.0	ND		2
Sulfate	**51**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	**2100**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	**1.9**	**mg/L**	**1.0**		**EPA-415.1**	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	06/19/15	06/19/15 14:52	RML	MET-1	1	BYF1868
2	EPA-300.0	06/18/15	06/18/15 13:22	OLH	IC1	1	BYF1752
3	SM-3500-FeD	06/18/15	06/18/15 07:43	TDC	KONE-1	1	BYF1811
4	EPA-353.2	06/18/15	06/18/15 07:58	TDC	KONE-1	1	BYF1762
5	SM-4500SD	06/23/15	06/23/15 20:30	DIW	SPEC05	1	BYF2160
6	EPA-415.1	06/19/15	06/19/15 16:32	ALW	TOC2	1	BYF1786

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID: 1514902-05 | **Client Sample Name:** 7124, MW-4-W-150617, 6/17/2015 5:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**2400**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	06/19/15	06/22/15 16:17	ARD	PE-OP3	1	BYF1847
2	EPA-6010B	06/26/15	06/29/15 10:14	ARD	PE-OP2	1	BYF2482

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYF2071						
Benzene	BYF2071-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BYF2071-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BYF2071-BLK1	ND	ug/L	0.50		
Ethylbenzene	BYF2071-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BYF2071-BLK1	ND	ug/L	0.50		
Toluene	BYF2071-BLK1	ND	ug/L	0.50		
Total Xylenes	BYF2071-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BYF2071-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BYF2071-BLK1	ND	ug/L	10		
Diisopropyl ether	BYF2071-BLK1	ND	ug/L	0.50		
Ethanol	BYF2071-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BYF2071-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	**BYF2071-BLK1**	**88.0**	%	**75 - 125 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**BYF2071-BLK1**	**99.1**	%	**80 - 120 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**BYF2071-BLK1**	**101**	%	**80 - 120 (LCL - UCL)**		

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Project: 7124
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Volatile Organic Analysis (EPA Method 8260B)

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: BYF2071										
Benzene	BYF2071-BS1	LCS	20.470	25.000	ug/L	81.9		70 - 130		
Toluene	BYF2071-BS1	LCS	22.660	25.000	ug/L	90.6		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BYF2071-BS1	LCS	8.7000	10.000	ug/L	87.0		75 - 125		
Toluene-d8 (Surrogate)	BYF2071-BS1	LCS	9.7600	10.000	ug/L	97.6		80 - 120		
4-Bromofluorobenzene (Surrogate)	BYF2071-BS1	LCS	10.820	10.000	ug/L	108		80 - 120		

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Project: 7124
Project Number: 351638
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Volatile Organic Analysis (EPA Method 8260B)

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: BYF2071	Used client sample: N										
Benzene	MS	1514952-11	ND	22.560	25.000	ug/L		90.2		70 - 130	
	MSD	1514952-11	ND	22.760	25.000	ug/L	0.9	91.0	20	70 - 130	
Toluene	MS	1514952-11	ND	24.430	25.000	ug/L		97.7		70 - 130	
	MSD	1514952-11	ND	24.370	25.000	ug/L	0.2	97.5	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1514952-11	ND	8.9200	10.000	ug/L		89.2		75 - 125	
	MSD	1514952-11	ND	8.9700	10.000	ug/L	0.6	89.7		75 - 125	
Toluene-d8 (Surrogate)	MS	1514952-11	ND	9.6300	10.000	ug/L		96.3		80 - 120	
	MSD	1514952-11	ND	9.5900	10.000	ug/L	0.4	95.9		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1514952-11	ND	10.890	10.000	ug/L		109		80 - 120	
	MSD	1514952-11	ND	10.720	10.000	ug/L	1.6	107		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: BYF1571						
Gasoline Range Organics (C6 - C12)	BYF1571-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**BYF1571-BLK1**	**91.4**	%	**70 - 130 (LCL - UCL)**		
QC Batch ID: BYF1893						
Gasoline Range Organics (C6 - C12)	BYF1893-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**BYF1893-BLK1**	**102**	%	**70 - 130 (LCL - UCL)**		

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Project: 7124
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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: BYF1571										
Gasoline Range Organics (C6 - C12)	BYF1571-BS1	LCS	918.56	1000.0	ug/L	91.9		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BYF1571-BS1	LCS	37.420	40.000	ug/L	93.6		70 - 130		
QC Batch ID: BYF1893										
Gasoline Range Organics (C6 - C12)	BYF1893-BS1	LCS	1080.1	1000.0	ug/L	108		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BYF1893-BS1	LCS	40.151	40.000	ug/L	100		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: BYF1571	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1513811-43	ND	992.01	1000.0	ug/L		99.2		70 - 130	
	MSD	1513811-43	ND	961.90	1000.0	ug/L	3.1	96.2	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1513811-43	ND	40.327	40.000	ug/L		101		70 - 130	
	MSD	1513811-43	ND	39.165	40.000	ug/L	2.9	97.9		70 - 130	
QC Batch ID: BYF1893	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1513811-44	ND	1062.1	1000.0	ug/L		106		70 - 130	
	MSD	1513811-44	ND	1011.9	1000.0	ug/L	4.8	101	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1513811-44	ND	40.719	40.000	ug/L		102		70 - 130	
	MSD	1513811-44	ND	40.324	40.000	ug/L	1.0	101		70 - 130	

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Gas Testing in Water

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYF2548						
Methane	BYF2548-BLK1	ND	mg/L	0.0010		
QC Batch ID: BYF2623						
Methane	BYF2623-BLK1	ND	mg/L	0.0010		

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Project Number: 351638
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Gas Testing in Water

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: BYF2548										
Methane	BYF2548-BS1	LCS	0.0096112	0.010843	mg/L	88.6		80 - 120		
	BYF2548-BSD1	LCSD	0.0099853	0.010843	mg/L	92.1	3.8	80 - 120	20	
QC Batch ID: BYF2623										
Methane	BYF2623-BS1	LCS	0.0099680	0.010843	mg/L	91.9		80 - 120		
	BYF2623-BSD1	LCSD	0.010048	0.010843	mg/L	92.7	0.8	80 - 120	20	

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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: BYF1752						
Nitrate as NO3	BYF1752-BLK1	ND	mg/L	0.44		
Sulfate	BYF1752-BLK1	ND	mg/L	1.0		
QC Batch ID: BYF1762						
Nitrite as NO2	BYF1762-BLK1	ND	mg/L	0.17		
QC Batch ID: BYF1786						
Non-Volatile Organic Carbon	BYF1786-BLK1	ND	mg/L	1.0		
QC Batch ID: BYF1811						
Iron (II) Species	BYF1811-BLK1	ND	ug/L	100		
QC Batch ID: BYF1867						
Total Alkalinity as CaCO3	BYF1867-BLK1	ND	mg/L	4.1		
QC Batch ID: BYF1868						
Total Alkalinity as CaCO3	BYF1868-BLK1	ND	mg/L	4.1		
QC Batch ID: BYF2160						
Total Sulfide	BYF2160-BLK1	ND	mg/L	0.10		

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Project: 7124
Project Number: 351638
Project Manager: Kathy Brandt

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: BYF1752										
Nitrate as NO3	BYF1752-BS1	LCS	21.904	22.134	mg/L	99.0		90 - 110		
Sulfate	BYF1752-BS1	LCS	97.748	100.00	mg/L	97.7		90 - 110		
QC Batch ID: BYF1762										
Nitrite as NO2	BYF1762-BS1	LCS	1.7301	1.6425	mg/L	105		90 - 110		
QC Batch ID: BYF1786										
Non-Volatile Organic Carbon	BYF1786-BS1	LCS	5.1510	5.0000	mg/L	103		85 - 115		
QC Batch ID: BYF1811										
Iron (II) Species	BYF1811-BS1	LCS	2529.6	2500.0	ug/L	101		90 - 110		
QC Batch ID: BYF1867										
Total Alkalinity as CaCO3	BYF1867-BS3	LCS	102.08	100.00	mg/L	102		90 - 110		
QC Batch ID: BYF1868										
Total Alkalinity as CaCO3	BYF1868-BS3	LCS	100.71	100.00	mg/L	101		90 - 110		
QC Batch ID: BYF2160										
Total Sulfide	BYF2160-BS1	LCS	0.51549	0.50000	mg/L	103		90 - 110		

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Reported: 07/01/2015 16:39
Project: 7124
Project Number: 351638
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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: BYF1752	Used client sample: Y - Description: MW-1-W-150617, 06/17/2015 07:25										
Nitrate as NO3	DUP	1514902-02	28.239	28.216		mg/L	0.1		10		
	MS	1514902-02	28.239	50.009	22.358	mg/L		97.4		80 - 120	
	MSD	1514902-02	28.239	50.041	22.358	mg/L	0.1	97.5	10	80 - 120	
Sulfate	DUP	1514902-02	27.630	27.673		mg/L	0.2		10		
	MS	1514902-02	27.630	131.59	101.01	mg/L		103		80 - 120	
	MSD	1514902-02	27.630	131.17	101.01	mg/L	0.3	103	10	80 - 120	
QC Batch ID: BYF1762	Used client sample: N										
Nitrite as NO2	DUP	1514888-01	ND	ND		mg/L			10		
	MS	1514888-01	ND	1.7379	1.7289	mg/L		101		90 - 110	
	MSD	1514888-01	ND	1.7531	1.7289	mg/L	0.9	101	10	90 - 110	
QC Batch ID: BYF1786	Used client sample: N										
Non-Volatile Organic Carbon	DUP	1514575-02	0.54400	ND		mg/L			10		
	MS	1514575-02	0.54400	5.6854	5.0251	mg/L		102		80 - 120	
	MSD	1514575-02	0.54400	5.6935	5.0251	mg/L	0.1	102	10	80 - 120	
QC Batch ID: BYF1811	Used client sample: Y - Description: MW-1-W-150617, 06/17/2015 07:25										
Iron (II) Species	DUP	1514902-02	ND	ND		ug/L			10		
QC Batch ID: BYF1867	Used client sample: N										
Total Alkalinity as CaCO3	DUP	1514838-09	32.400	32.100		mg/L	0.9		10		
QC Batch ID: BYF1868	Used client sample: Y - Description: MW-4-W-150617, 06/17/2015 05:25										
Total Alkalinity as CaCO3	DUP	1514902-05	212.53	216.48		mg/L	1.8		10		
QC Batch ID: BYF2160	Used client sample: N										
Total Sulfide	DUP	1514851-01	ND	ND		mg/L			10		
	MS	1514851-01	ND	0.52974	0.50000	mg/L		106		80 - 120	
	MSD	1514851-01	ND	0.52617	0.50000	mg/L	0.7	105	10	80 - 120	

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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: BYF1847						
Dissolved Iron	BYF1847-BLK1	ND	ug/L	50		
QC Batch ID: BYF2482						
Total Manganese	BYF2482-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: BYF1847										
Dissolved Iron	BYF1847-BS1	LCS	1068.9	1000.0	ug/L	107		85 - 115		
QC Batch ID: BYF2482										
Total Manganese	BYF2482-BS1	LCS	541.28	500.00	ug/L	108		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: BYF1847	Used client sample: N										
Dissolved Iron	DUP	1514836-01	ND	ND		ug/L			20		
	MS	1514836-01	ND	1103.2	1020.4	ug/L		108		75 - 125	
	MSD	1514836-01	ND	1108.1	1020.4	ug/L	0.4	109	20	75 - 125	
QC Batch ID: BYF2482	Used client sample: N										
Total Manganese	DUP	1514838-01	4.3588	ND		ug/L			20		
	MS	1514838-01	4.3588	521.34	500.00	ug/L		103		75 - 125	
	MSD	1514838-01	4.3588	547.55	500.00	ug/L	4.9	109	20	75 - 125	

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Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.