September 22, 2015 Project No. 073-93368-06.09A

Harry Grant
Riddell Williams P.S.
1001 Fourth Avenue, Suite 4500
Seattle, WA 98154

RE: SEA-TAC DEVELOPMENT SITE (MASTERPARK LOT C) PERFORMANCE GROUNDWATER MONITORING REPORT – SECOND QUARTER 2015

Dear Harry:

Golder Associates Inc. (Golder) completed performance groundwater monitoring at the Sea-Tac Development Site (MasterPark Lot C) June 17, 18, and 25, 2015. Groundwater sampling was conducted in accordance with the Compliance Monitoring Plan, Sea-Tac Development Site (Golder 2011)[1]. Groundwater samples were collected from monitoring wells MW-06, MW-07, MW-09, MW-12, MW-13, MW-17A, MW-18, MW-19, MW-20, MW-21, MW-22, and PORT-MW-B (Figure 1). Monitoring wells MW-07, MW-09, MW-12, MW-13, MW-17A, MW-18, and MW-22 are completed to monitor the approximate groundwater plume boundary. Monitoring wells MW-06, MW-19, MW-20, MW-21, and PORT-MW-B are completed to monitor background concentrations. Static water elevations were collected at all site wells, which also include MW-01, MW-05, MW-08A, MW-10, MW-11, MW-14, MW-15, and MW-16.

1.0 SAMPLING PROTOCOL

Groundwater sampling was conducted in accordance with the Compliance Monitoring Plan, Sea-Tac Development Site (Golder 2011)[1], and included the following activities:

- Measurement of static water elevations at monitoring wells.
- Well purging to ensure sample representativeness with the newly installed dedicated submersible bladder pumping systems.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, and turbidity.
- Collection of all purge water in appropriate containers for on-site storage prior to disposal.
- Collection of representative and quality assurance / quality control (QA/QC) samples in appropriate containers.
- Analyses of groundwater for volatile organic compounds (VOCs, EPA Method 8260C): gasoline range hydrocarbons, benzene, toluene, ethylbenzene, xylene ethylene dibromide (EDB), naphthalene, and n-hexane; and for diesel and motor oil range Northwest Total Petroleum Hydrocarbons (Method NWTPH-D).

[1]Golder Associates Inc. (Golder). 2011. Attachment E: Compliance Monitoring Plan Sea-Tac Development Site, SeaTac Washington. November 2.

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Appendix A presents the laboratory analytical reports for all analyses. Sampling activities were documented on Sample Integrity Data Sheets (SIDS), which are provided in Appendix B. Appendix C presents the Data Validation Memorandum. Appendix D provides summary data tables and trend graphs for all sampling events. Table 1 presents water depth measurements and elevations that were collected from wells prior to sampling activities. Table 2 shows a summary of the field parameters and laboratory analytical results for each groundwater sample collected in June 2015.

2.0 SECOND QUARTER 2015 GROUNDWATER SAMPLING RESULTS

Following sample collection, all bottles were sealed, labeled, and placed in an iced cooler until delivery to the laboratory. All groundwater samples from monitoring wells were transported under chain-of-custody procedures to Analytical Resources Incorporated (ARI), of Tukwila, Washington, for analysis. Upon receipt of laboratory data reports, data underwent a data validation review. Results were compared to State of Washington Model Toxics Control Act (MTCA) Method A or B clean-up levels (CULs) and Secondary Maximum Containment Levels (MCLs), whichever value is more protective.

The analytical results indicate that groundwater conditions have improved significantly from those observed during the historical groundwater monitoring during the Remedial Investigation (RI) and since the startup of the In-situ Air Sparging (IAS)-Soil Vapor Extraction (SVE) system. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample collected in June 2015.

Results for NWTPH-Gasoline exceeded the MTCA Method A limit for groundwater when benzene is present (0.8 milligrams per liter [mg/L]) in wells MW-07, MW-09, MW-22, and the field duplicate at MW-22 (MW-22-DUP). NWTPH-Gx was non-detect in wells MW-06, MW-12, MW-13, MW-17A, MW-18, MW-19, MW-20, MW-21, and PORT-MW-B.

The MTCA standard for benzene (5 micrograms per liter [µg/L]) was exceeded in wells MW-07, MW-09, MW-22, and MW-22-DUP. Benzene was detected in MW-18, but was less than the MTCA standard. Benzene was non-detect in wells MW-06, MW-12, MW-13, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B.

There were detections of toluene and/or ethylbenzene in wells MW-07, MW-09, MW-12 (ethylbenzene only), MW-18, MW-22, and MW-22-DUP, but the values did not exceed the MTCA standard (640 µg/L for toluene and 700 µg/L for ethylbenzene) except for ethylbenzene in MW-22 and MW-22-DUP. Toluene and ethylbenzene were non-detect in wells MW-06, MW-12 (toluene only), MW-13, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B.

Results for total xylenes exceeded the MTCA Method A standard (1,000 µg/L) in wells MW-22, and MW-22-DUP. Xylenes were detected, but below the standard in MW-07, MW-09, MW-12, and MW-18, and were non-detect in wells MW-06, MW-13, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B.

Ethylene dibromide (EDB) results were non-detect for all samples. The reporting limits were raised for samples from MW-22 and MW-22-DUP due to high levels of BTEX. More information is provided in the Data Validation Memorandum in Appendix C. The method detection limits (MDLs) for EDB for all samples were greater than the MTCA CULs.

N-hexane was detected, and below the MTCA Method B level (480 µg/L) in wells MW-07, MW-12, MW-22, and MW-22-DUP. N-hexane was non-detect in wells MW-06, MW-09, MW-13, MW-17A, MW-18, MW-19, MW-20, MW-21, and PORT-MW-B.

Naphthalene was detected above the MTCA limit (160 µg/L) in wells MW-07, MW-22, and MW-22-DUP. Naphthalene was also detected, but below the MTCA limit, in wells MW-09, and MW-13. Naphthalene was non-detect in wells MW-06, MW-12, MW-17A, MW-18, MW-19, MW-20, MW-21, and PORT-MW-B.

Results for NWTPH-Diesel were detected above the MTCA Method A limit (0.5 mg/L) in wells MW-07, MW-09, MW-22, and MW-22-DUP. NWTPH-Diesel was detected, but below the MTCA limit in wells MW-12, MW-13, and MW-18. NWTPH-Diesel was non-detect in MW-06, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B. The highest concentrations of diesel were detected in groundwater from monitoring well MW-07 at 5.4 mg/L, while all other diesel concentrations were less than 1.5 mg/L or non-detect. Results for NWTPH-Motor Oil were non-detect at less than 0.20 mg/L for all samples except for sample MW-07, which was detected below the MTCA limit.

3.0 DATA QUALITY ASSURANCE / VALIDATION

Data underwent a data validation review and is presented in detail in Appendix C. In general, the data were acceptable, except for the following:

- Samples MW-07, MW-22, and MW-22-DUP had to be reanalyzed at a dilution due to high levels of analytes. The diluted results are reported and are detailed in Appendix C.
- The diluted reanalysis of MW-07 was analyzed out of hold and results were qualified as estimated (J).
- Diesel results for samples MW-22 and MW-22-DUP were qualified as estimated (J) due to unidentifiable hydrocarbons.
- The motor oil result for the initial analysis of MW-07 was qualified as estimated (J) due to unidentifiable hydrocarbons.
- Trip Blank-062515 contained detections of various analytes. Associated sample results were not affected. Refer to Appendix C for details.
- Results for QA/QC samples (field blanks, trip blanks, and field duplicate) were acceptable except as discussed above. No other issues were noted.

4.0 SUMMARY

The analytical results for the second quarter 2015 groundwater sampling indicate that there continues to be significant improvements to the groundwater conditions following the startup of the IAS-SVE system and since the first quarter (February 2014) groundwater sampling event. The first sampling event in February 2014 had 24 results that were greater than the MTCA CULs, while the most recent sampling event in June 2015 had only 12 results above MTCA CULs out of 120 results. Overall, concentrations are trending downward as shown in the historical data tables and graphs in Appendix D.

The only on-site wells containing compounds with results above MTCA CULs in June 2015 were MW-07 and MW-09. Wells MW-07 and MW-09 had significant decreases in concentrations for the June 2015 sampling, most likely due to the expanded IAS system with an additional IAS well installed in April 2015 located between MW-07 and MW-11. Petroleum concentrations in groundwater from MW-07 quickly responded to the expanded IAS system treatment. The only off-site well that was sampled and contained compounds with results above the MTCA CULs in June 2015 was MW-22; although, two off-site monitoring wells (MW-15 and MW-16) that had detected contaminants over MTCA CULs during the RI are not sampled for performance monitoring.

Wells MW-12 and MW-13 showed the greatest drop in concentrations since the startup of the IAS-SVE system with NWTPH-Gx levels going from 8.6 mg/L to <0.10 mg/L and 14 mg/L to <0.10 mg/L, respectively. Benzene in MW-12 went from 79 µg/L to <0.20 µg/L. Toluene, ethylbenzene, total xylenes, and naphthalene in MW-12 and MW-13 also showed significant decreases in concentrations. MW-18 that was in the source leak area is also showing significant improvements with all results being non-detects or detected much lower than the MTCA CULs.

The wells inside of the IAS and SVE system area have significant reductions and are almost meeting performance goals. Refer to Appendix D for summary data tables and trend graphs for comparisons of the March 2010 final RI monitoring event with the 2014-2015 performance monitoring results.

If you have any questions or require any additional information, please contact Douglas Morell at (425) 883-0777.

Sincerely,

GOLDER ASSOCIATES INC.

Jill Lamberts
Project Environmental Scientist

For

Douglas J. Morell, PhD, LHG
Principal

cc: Roger McCracken, McCracken Group
Tamarah Knapp-Hancock, Scarsella Bros. Inc.
Doug Rigoni, SeaTac Investments LLC

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JL/DJM/sb

TABLES

Table 1: Second Quarter 2015 Groundwater Elevation Data Sea-Tac Development Site, Seatac, Washington

Sample Location ID	Date/Time Sampled	Well Data			Water Levels		
		Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Casing Diameter (inches)	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-01[b]	6/17/2015 9:49	51.0	41-51	2	361.38	48.77	312.61
MW-05	6/17/2015 9:32	58.0	48-58	2	364.26	53.96	310.30
MW-06[b,c]	6/17/2015 9:28	60.0	50-60	2	369.68	-	-
MW-07[b]	6/17/2015 10:08	53.5	43.5-53.5	2	358.69	48.01	310.68
MW-08A	6/17/2015 9:23	54.0	44-54	2	359.16	48.66	310.50
MW-09	6/17/2015 9:37	57.0	47.5-57	2	362.13	51.67	310.46
MW-10	6/17/2015 9:55	90.0	80-90	2	360.18	50.22	309.96
MW-11[b]	6/17/2015 10:04	57.0	42-57	2	357.53	46.8	310.73
MW-12[b,d]	6/17/2015 10:12	67.0	52-67	2	364.83	-	-
MW-13[b]	6/17/2015 9:46	65.0	50-65	2	365.42	54.7	310.72
MW-14[b]	6/17/2015 9:41	65.0	50-65	2	363.76	53.1	310.66
MW-15	6/25/2015 11:15	65.0	50-65	2	364.67	54.15	310.52
MW-16	6/17/2015 13:16	73.7	64-74	2	377.63	67.35	310.28
MW-17A[a]	6/17/2015 12:18	95.0	80-95	2	394.00	84.16	309.84
MW-18[b]	6/17/2015 10:01	62.0	47-62	2	360.45	49.51	310.94
MW-19	6/17/2015 9:19	58.0	43-58	2	356.61	45.94	310.67
MW-20	6/17/2015 11:22	113.1	103-113	2	416.61	106.68	309.93
MW-21	6/17/2015 10:26	109.8	95-110	2	412.85	102.81	310.04
MW-22	6/25/2015 10:17	95.0	80-95	2	393.31	82.95	310.36
MW-23	6/25/2015 11:25	57.5	42.5-57.5	2	354.94	44.34	310.60
PORT-MW-B[a]	6/25/2015 11:47	99.0	79-99	2	400.00	89.67	310.33

Notes:

-	Not measured or not available
feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
TOC	Top of casing inside PVC well
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Blowing may be affecting WLs.
c	Top of pump is above water level - not measured.
d	WL fluctuating due to IAS/SVE - not measured.

Table 2: Second Quarter 2015 Groundwater Field Parameters and Analytical Data, Sea-Tac Development Site, Seatac, Washington

		Field Parameters								Analytical Data									
Sample Location ID	Date/Time Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
MW-06[j]	6/17/2015 14:10	369.7	-	-	6.32	14.9	331	3.96	0.75	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-07[b]	6/18/2015 11:20	358.7	48.0	310.7	6.64	16.1	371	0.25	1.57	15 J	6.4	28 J	110 J	533 J	< 0.07	93 J	96 J	5.4	0.24 J
MW-09[j]	6/17/2015 16:00	362.1	51.7	310.5	6.48	15.1	331	0.18	0.75	1.7	7.2	1.3	40	1.6	< 0.07	< 0.20	18	1.5	< 0.20
MW-12[b]	6/18/2015 12:10	364.8	-	-	8.09	16.3	208	9.90	2.44	< 0.25	< 0.20	< 0.20	0.10 J	2.1	< 0.07	0.26	< 0.50	0.45	< 0.20
MW-13[b]	6/18/2015 9:40	365.4	54.7	310.7	7.13	14.7	174	10.71	1.32	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	0.61	0.27	< 0.20
MW-17A[a]	6/17/2015 13:00	394.0	84.2	309.8	6.29	12.9	158	3.13	29.6	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-18[b]	6/18/2015 10:30	360.5	49.5	310.9	8.05	15.2	515	10.89	49.6	< 0.25	0.67	0.54	0.24	1.1	< 0.07	< 0.20	< 0.50	0.38	< 0.20
MW-19	6/17/2015 15:10	356.6	45.9	310.7	6.75	14.3	400	0.26	0.86	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-20	6/17/2015 12:00	416.6	106.7	309.9	6.77	13.3	350	7.41	1.06	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-21	6/17/2015 11:10	412.9	102.8	310.0	6.12	13.5	326	6.12	1.98	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-22	6/25/2015 10:50	393.3	83.0	310.4	6.82	13.6	354	0.52	3.34	19	5.9	7.4	750	1402	< 0.74	4.7	310	1.0 J	< 0.20
MW-22 Duplicate	6/25/2015 10:55	-	-	-	-	-	-	-	-	19	5.2	7.8	760	1402	< 0.74	10	320	1.1 J	< 0.20
PORT-MW-B[a]	6/25/2015 0:25	400.0	89.7	310.3	6.51	14.3	290	3.8	4.18	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level			MTCA Method A for Groundwater (unrestricted landuse)							0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
			MTCA Method B for Groundwater (unrestricted landuse)							NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

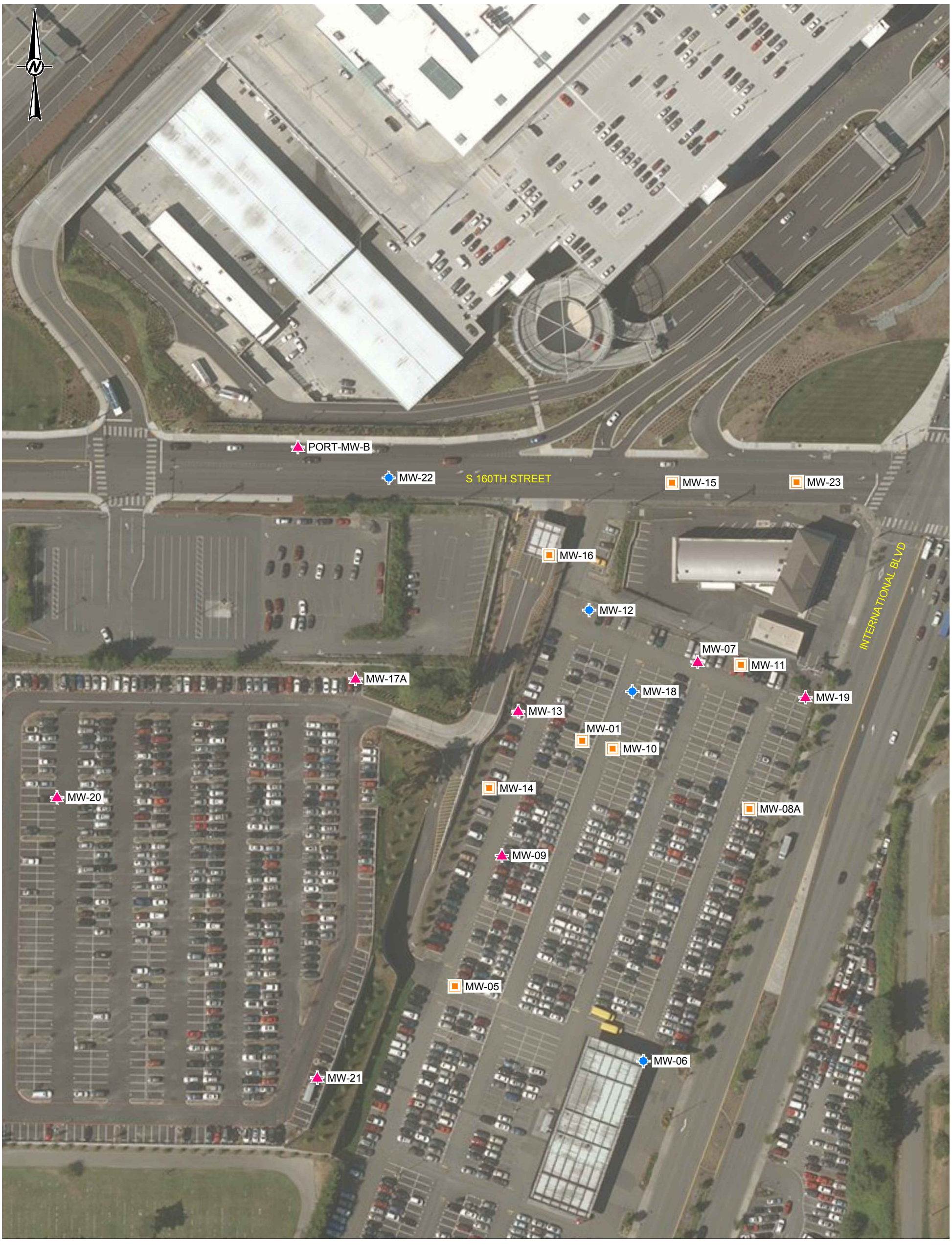
Notes:

feet bgs	Feet below ground surface	-	Not measured or not available
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)
feet msl	Feet above mean sea level	mg/L	Milligrams per liter
a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter
b	IAS/SVE in operation. Blowing may be affecting WLs.	NTU	Nephelometric Turbidity Unit
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter
d	When benzene is present.	<	Analyte not detected above the reporting limit shown
e	When benzene is not present.	MTCA	Model Toxics Control Act
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available
h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius
j	Top of pump is above water level - not measured.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.

Golder Associates

FIGURE

Path: \\redmond.golder.gds\geomat$\geomatics\RIDDELL-WILLIAMS\MASTER_PARK_C\99_PROJECTS\07393368-06-09A_MonitoringProgram\Monitoring_Wells\02_PRODUCTION\DWG\ | File Name: 07393364-06-09A_002.dwg



LEGEND

MW-14	MONITORING WELL - GROUNDWATER ELEVATIONS MEASURED
MW-09	MONITORING WELL - COMPLIANCE
MW-01	MONITORING WELL - NATURAL ATTENUATION

NOTES

1. MONITORING WELL LOCATIONS ARE APPROXIMATE.

REFERENCE

IMAGE COURTESY OF USGS EARTHSTAR GEOGRAPHICS

0 50 100
1" = 50' FEET

CLIENT
RIDDELL-WILLIAMS

CONSULTANT

Golder Associates

YYYY-MM-DD	2014-04-01
PREPARED	REDMOND
DESIGN	JL
REVIEW	DM
APPROVED	

PROJECT
SEATAC DEVELOPMENT SITE
MASTER PARK LOT C

TITLE
GROUNDWATER MONITORING LOCATIONS

PROJECT No.	\U+0000	Rev.	FIGURE
073-93368x06.09A		B	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
1 in
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APPENDIX A
LABORATORY ANALYTICAL RESULTS

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 9, 2015

Mr. Douglas Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052

Re: Project: Master Park Lot C
ARI Job Nos.: AII2

Dear Douglas:

Please find enclosed chain of custody records (COC) and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted three water samples and a trip blank in good condition on June 25, 2015.

The samples were analyzed for NWTPH-Dx VOCs and NWTPH-Gx plus BTEX, as requested on the COC. Quality control analyses are included for your review.

There were no anomalies associated with these analyses.

A copy of these reports and all associated raw data will remain electronically on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,
ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA between Golder + ARI

ARI Assigned Number: ARI2	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-094	Samplers: J. Lamberts, A. Rydecki

Page	of
1	1
Date: 6/25/15	Ice Present?
No of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	NW TPH-Gx BTEX	EDB by 8260 report to MDL	Naphthalene	N-Hexane	NW TPH-Dx				Notes/Comments
TripBlank-062515	6/25/15	—	W	3	X	X	X	X					
MPLOTC-MW-22-062515		1050		7	X	X	X	X	X				
MPLOTC-MW-22-DUP-062515		1055		7	X	X	X	X	X				
PORT-MW-B-062515		1225		7	X	X	X	X	X				
END OF SAMPLING EVENT													

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
Please include Ecology EIM EDD.				
Pls cc. dmorell + jlamberts@golder.com	Printed Name: J. Lamberts	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Golder	Company: ARI	Company	Company
	Date & Time: 6/25/2015 1330	Date & Time: 6/25/15 1330	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Golder

Project Name Maple Park Lot

COC No(s) _____ NA

Delivered by Fed-Ex UPS Courier Hand Delivered Other _____

Assigned ARI Job No ATT2

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 9-8

Time: 1330

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID# D02565

Cooler Accepted by CA Date: 6/25/15 Time 1330

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI. NA _____

Was Sample Split by ARI: NA YES Date/Time_____ Equipment _____ Split by _____

Samples Logged by CA Date 6-25-15 Time 1701

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

1 of 5 vials for PORT-MW-13-012515 has sm bubbles.
1 of 5 vials for MPLOTC-MW-22-DUP-012515 has sm bubbles

By CA Date 6-25-15

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	• • •

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

ATT2 : 000003

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#:	Temperature(°C): 9.8	
Sample ID	**Bottle Count**	**Bottle Type**
All samples received at 6 above		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by CA Date 6/25/15 Time 1332

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AII2
Client: Golder Associates
Project Event: 073-93368-06-094
Project Name: Master Park Lot C

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	TripBlank-062515	AII2A	15-11758	Water	06/25/15	06/25/15 13:30
2.	MPLOTC-MW-22-062515	AII2B	15-11759	Water	06/25/15 10:50	06/25/15 13:30
3.	MPLOTC-MW-22-DUP-062515	AII2C	15-11760	Water	06/25/15 10:55	06/25/15 13:30
4.	PORT-MW-B-062515	AII2D	15-11761	Water	06/25/15 12:25	06/25/15 13:30

AII2:00005

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U Indicates that the target analyte was not detected at the reported concentration

* Duplicate RPD is not within established control limits

B Reported value is less than the CRDL but ≥ the Reporting Limit

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U Indicates that the target analyte was not detected at the reported concentration

* Flagged value is not within established control limits

B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J Estimated concentration when the value is less than ARI's established reporting limits

D The spiked compound was not detected due to sample extract dilution

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

A12 0006

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

A112-00007

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

0112 00008

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TripBlank-062515**
 SAMPLE

Lab Sample ID: AII2A
LIMS ID: 15-11758
Matrix: Water
Data Release Authorized: MW
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:32

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.40**
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**1.9**
110-54-3	**Hexane**	**0.10**	**0.20**	**0.19 J**

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	104%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MPLOTC-MW-22-062515**
 SAMPLE

Lab Sample ID: AII2B
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized: MW
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 18:25

Sample Amount: 1.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.27**	**2.0**	**5.9**
108-88-3	**Toluene**	**0.40**	**2.0**	**7.1**
100-41-4	**Ethylbenzene**	**0.37**	**2.0**	**800 E**
179601-23-1	**m,p-Xylene**	**0.52**	**4.0**	**1,400 E**
95-47-6	**o-Xylene**	**0.35**	**2.0**	**2.0**
106-93-4	1,2-Dibromoethane	0.74	2.0	< 2.0 U
91-20-3	**Naphthalene**	**1.2**	**5.0**	**310**
110-54-3	**Hexane**	**0.95**	**2.0**	**4.7**

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**2.5**	**12**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	96.8%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MPLOTC-MW-22-062515**
 DILUTION

Lab Sample ID: AII2B
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/06/15 19:45

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.53**	**4.0**	**4.6**
108-88-3	**Toluene**	**0.80**	**4.0**	**7.4**
100-41-4	**Ethylbenzene**	**0.74**	**4.0**	**750**
179601-23-1	**m,p-Xylene**	**1.0**	**8.0**	**1,400**
95-47-6	o-Xylene	0.70	4.0	< 4.0 U
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	**Naphthalene**	**2.4**	**10**	**300**
110-54-3	Hexane	1.9	4.0	< 4.0 U

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**12**	**19**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	99.3%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	99.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MPLOTC-MW-22-DUP-062515**
 SAMPLE

Lab Sample ID: AII2C
LIMS ID: 15-11760
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 18:53

Sample Amount: 1.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.27**	**2.0**	**5.2**
108-88-3	**Toluene**	**0.40**	**2.0**	**7.3**
100-41-4	**Ethylbenzene**	**0.37**	**2.0**	**810 E**
179601-23-1	**m,p-Xylene**	**0.52**	**4.0**	**1,400 E**
95-47-6	**o-Xylene**	**0.35**	**2.0**	**2.3**
106-93-4	1,2-Dibromoethane	0.74	2.0	< 2.0 U
91-20-3	**Naphthalene**	**1.2**	**5.0**	**320**
110-54-3	**Hexane**	**0.95**	**4.0**	**10**

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**2.5**	**12**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	97.3%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	97.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MPLOTC-MW-22-DUP-062515**

DILUTION

Lab Sample ID: AII2C
LIMS ID: 15-11760
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/06/15 20:13

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.53**	**4.0**	**4.2**
108-88-3	**Toluene**	**0.80**	**4.0**	**7.8**
100-41-4	**Ethylbenzene**	**0.74**	**4.0**	**760**
179601-23-1	**m,p-Xylene**	**1.0**	**8.0**	**1,400**
95-47-6	o-Xylene	0.70	4.0	< 4.0 U
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	**Naphthalene**	**2.4**	**10**	**320**
110-54-3	**Hexane**	**1.9**	**4.0**	**4.4**

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**12**	**19**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: PORT-MW-B-062515**
 SAMPLE

Lab Sample ID: AII2D
LIMS ID: 15-11761
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:58

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in ug/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	98.4%
d4-1,2-Dichlorobenzene	98.5%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-063015A	Method Blank	10	NA	107%	97.8%	102%	0
LCS-063015A	Lab Control	10	NA	98.2%	104%	99.2%	0
LCSD-063015A	Lab Control Dup	10	NA	98.0%	102%	99.8%	0
AII2A	TripBlank-062515	10	NA	104%	100%	99.5%	0
MB-070615A	Method Blank	10	NA	107%	96.0%	98.7%	0
LCS-070615A	Lab Control	10	NA	100%	101%	102%	0
LCSD-070615A	Lab Control Dup	10	NA	98.3%	100%	98.6%	0
AII2B	MPLOTC-MW-22-062515	10	NA	96.8%	103%	102%	0
AII2BDL	MPLOTC-MW-22-062515	10	NA	99.3%	98.5%	99.9%	0
LCS-070615A	Lab Control	10	NA	97.7%	102%	97.9%	0
LCSD-070615A	Lab Control Dup	10	NA	94.5%	100%	97.6%	0
AII2C	MPLOTC-MW-22-DUP-062515	10	NA	97.3%	104%	97.2%	0
AII2CDL	MPLOTC-MW-22-DUP-062515	10	NA	100%	100%	99.5%	0
LCS-063015A	Lab Control	10	NA	96.6%	100%	97.6%	0
LCSD-063015A	Lab Control Dup	10	NA	93.2%	104%	102%	0
AII2D	PORT-MW-B-062515	10	NA	107%	98.4%	98.5%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-11758 to 15-11761

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-063015A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-063015A
LIMS ID: 15-11758
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 06/30/15 11:31
LCSD: 06/30/15 11:57

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	10.1	10.0	101%	9.91	10.0	99.1%	1.9%
Toluene	9.85	10.0	98.5%	9.52	10.0	95.2%	3.4%
Ethylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
m,p-Xylene	20.4	20.0	102%	20.4	20.0	102%	0.0%
o-Xylene	10.2	10.0	102%	10.2	10.0	102%	0.0%
1,2-Dibromoethane	10.2	10.0	102%	9.91	10.0	99.1%	2.9%
Naphthalene	9.89	10.0	98.9%	9.60	10.0	96.0%	3.0%
Hexane	10.5	10.0	105%	10.5	10.0	105%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	98.2%	98.0%
Bromofluorobenzene	104%	102%
d4-1,2-Dichlorobenzene	99.2%	99.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-070615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-070615A
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 07/06/15 12:19
LCSD: 07/06/15 12:45

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	10.0	10.0	100%	9.84	10.0	98.4%	1.6%
Toluene	11.6	10.0	116%	11.1	10.0	111%	4.4%
Ethylbenzene	9.67	10.0	96.7%	9.54	10.0	95.4%	1.4%
m,p-Xylene	19.5	20.0	97.5%	19.5	20.0	97.5%	0.0%
o-Xylene	9.62	10.0	96.2%	9.72	10.0	97.2%	1.0%
1,2-Dibromoethane	9.84	10.0	98.4%	9.83	10.0	98.3%	0.1%
Naphthalene	10.5	10.0	105%	10.4	10.0	104%	1.0%
Hexane	9.12	10.0	91.2%	8.74	10.0	87.4%	4.3%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	100%	98.3%
Bromofluorobenzene	101%	100%
d4-1,2-Dichlorobenzene	102%	98.6%

AII2 00017

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-070615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-070615A
LIMS ID: 15-11760
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 07/06/15 13:11
LCSD: 07/06/15 13:37

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.12	1.00	112%	1.10	1.00	110%	1.8%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	97.7%	94.5%
Bromofluorobenzene	102%	100%
d4-1,2-Dichlorobenzene	97.9%	97.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-063015A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-063015A
LIMS ID: 15-11761
Matrix: Water
Data Release Authorized: MW
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 06/30/15 12:23
LCSD: 06/30/15 12:49

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.97	1.00	97.0%	0.97	1.00	97.0%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	96.6%	93.2%
Bromofluorobenzene	100%	104%
d4-1,2-Dichlorobenzene	97.6%	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-063015A**
 METHOD BLANK

Lab Sample ID: MB-063015A
LIMS ID: 15-11758
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 13:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	97.8%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-070615A**
 METHOD BLANK

Lab Sample ID: MB-070615A
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized: MN
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/ML
Date Analyzed: 07/06/15 14:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	98.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094

Matrix: Water

Date Received: 06/25/15

Data Release Authorized:
Reported: 07/01/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
MB-063015	Method Blank	06/30/15	1.0	Diesel Range	< 0.10 U	0.10	0.02
15-11759		FID4A		Motor Oil Range	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	94.5%		
AII2B	MPLOTC-MW-22-062515	06/30/15	1.0	**Diesel**	**1.0**	0.10	0.02
15-11759		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DRO		
				o-Terphenyl	74.5%		
AII2C	MPLOTC-MW-22-DUP-06251506/30/15		1.0	**Diesel**	**1.1**	0.10	0.02
15-11760		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DRO		
				o-Terphenyl	75.4%		
AII2D	PORT-MW-B-062515	06/30/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11761		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	92.9%		

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094

Client ID	OTER	TOT OUT
MB-063015	94.5%	0
LCS-063015	92.2%	0
LCSD-063015	95.0%	0
MPLOTC-MW-22-062515	74.5%	0
MPLOTC-MW-22-DUP-062515	75.4%	0
PORT-MW-B-062515	92.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-11759 to 15-11761

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-063015
LCS/LCSD

Lab Sample ID: LCS-063015
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized:
Reported: 07/01/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 06/30/15

Date Analyzed LCS: 06/30/15 17:54
LCSD: 06/30/15 18:19
Instrument/Analyst LCS: FID4A/PKC
LCSD: FID4A/PKC

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.46	3.00	82.0%	2.50	3.00	83.3%	1.6%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	92.2%	95.0%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: AII2
Project: Master Park Lot C
073-93368-06-094

Matrix: Water
Date Received: 06/25/15

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-11759-063015MB1	Method Blank	500 mL	1.00 mL	06/30/15
15-11759-063015LCS1	Lab Control	500 mL	1.00 mL	06/30/15
15-11759-063015LCSD1	Lab Control Dup	500 mL	1.00 mL	06/30/15
15-11759-AII2B	MPLOTC-MW-22-062515	500 mL	1.00 mL	06/30/15
15-11760-AII2C	MPLOTC-MW-22-DUP-062	500 mL	1.00 mL	06/30/15
15-11761-AII2D	PORT-MW-B-062515	500 mL	1.00 mL	06/30/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 10, 2015

Mr. Douglas Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052

Re: Project: Master Park Lot C
ARI Job Nos.: AHZ5

Dear Douglas:

Please find enclosed chain of custody records (COC) and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted twelve water samples and a trip blank in good condition on June 18, 2015.

The samples were analyzed for NWTPH-Dx VOCs and NWTPH-Gx plus BTEX, as requested on the COC. Quality control analyses are included for your review.

The BTEX compounds were not spiked in the matrix spike and matrix spike duplicate due to an analyst error. All other spike recoveries are in control.

Sample MPLOTC-MW-07-061815 was originally analyzed within the method recommended holding time and required a dilution that was analyzed outside of the method recommended holding time. Both sets of data have been included for your review.

There were no other anomalies associated with these analyses.

A copy of these reports and all associated raw data will remain electronically on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,
ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Please analyze under current MSA betwn Golder + ARZ

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number: AHZ5	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425 883 0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 2
Date: 6/17/2015	Ice Present?
No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	NWTPH-Gx BTEX	EDB by 8260 report to MDL	N-hexane	Naphthalene	NWTPH-Dx				Notes/Comments
Trip Blanks-061715	6/17/15	–	W	3	X	X	X	X					
MPLOTC-MW-21-061715		11:10		7	X	X	X	X	X				
MPLOTC-MW-20-061715		12:00		7	X	X	X	X	X				
MPLOTC-MW-17A-061715		13:00		~~7~~ 21	X	X	X	X	X				MS/MSD volume
MPLOTC-MW-06-061715		14:10		7	X	X	X	X	X				
MPLOTC-MW-19-061715		15:10		7	X	X	X	X	X				
MPLOTC-MW-09-061715		16:00		7	X	X	X	X	X				
MPLOTC-MW-13-061815	6/18/15	09:40		7	X	X	X	X	X				
MPLOTC-MW-18-061815		10:30		7	X	X	X	X	X				
MPLOTC-FB-061815		11:00		7	X	X	X	X	X				

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
*Ecology EIM EDP	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
Pls cc. jlamberts + dmorell@golder.com	Printed Name: Jill Lamberts	Printed Name: Chris Amell	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 6/18/2015 1302	Date & Time: 6/18/15 1302	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number:	Turn-around Requested: Standard	Page: 2 of 2	
ARI Client Company: Golder	Phone: 425 883 0777	Date: 6/18/2015	Ice Present?
Client Contact: D.Morell, J.Lamberts		No. of Coolers:	Cooler Temps:
Client Project Name: Masterpark Lot C			
Client Project #: 073-93368-06-09A	Samplers: Lamberts		

Sample ID	Date	Time	Matrix	No. Containers	NWTPH-Dx BTEX	EPA by 8260 reportable	N-hexane	Naphthalene	NWTPH-Dx				Notes/Comments
MPLOTC-MW-07-061815	6/18/15	11:20	W	7	X	X	X	X	X				4 more samples to come next week
MPLOTC-MW-12-061815	↓	12:10	↓	7	X	X	X	X	X				

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
* Ecology EIM EDD Pls cc jlamberts and dmorell@golder.com	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: J. Lamberts	Printed Name: C. Mitchell	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 6/18/2015 1302	Date & Time: 6/18/15 1302	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Collier

COC No(s): _____ (NA)

Assigned ARI Job No: AHZ5

Project Name: Master Park Lot C

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? ..... (YES) NO

Were custody papers properly filled out (ink, signed, etc.) ..... (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.7 3.3 ___ ___ ___ ___

Time: 1302

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90477922

Cooler Accepted by: CA Date: 6/5/15 Time: 1302

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ..... YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? ..... NA (YES) NO

Were all bottles sealed in individual plastic bags? ..... YES (NO)

Did all bottles arrive in good condition (unbroken)? ..... (YES) NO

Were all bottle labels complete and legible? ..... (YES) NO

Did the number of containers listed on COC match with the number of containers received? ..... (YES) NO

Did all bottle labels and tags agree with custody papers? ..... (YES) NO

Were all bottles used correct for the requested analyses? ..... (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... (NA) YES NO

Were all VOC vials free of air bubbles? ..... NA (YES) NO

Was sufficient amount of sample sent in each bottle? ..... (YES) NO

Date VOC Trip Blank was made at ARI ..... NA 6-16-15

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

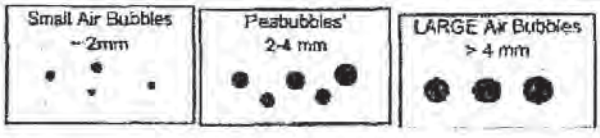
Samples Logged by: TB Date: 6-8-15 Time: 1520

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)	
Peabubbles → "pb" (2 to < 4 mm)	
Large → "lg" (4 to < 6 mm)	
Headspace → "hs" (> 6 mm)	

AHZ5 : 00001

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AHZ5
Client: Golder Associates
Project Event: 073-93368-06-09A
Project Name: Masterpark Lot C

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	Trip Blanks-061715	AHZ5A	15-11452	Water	06/17/15	06/18/15 13:02
2.	MPLOTC-MW-21-061715	AHZ5B	15-11453	Water	06/17/15 11:10	06/18/15 13:02
3.	MPLOTC-MW-20-061715	AHZ5C	15-11454	Water	06/17/15 12:00	06/18/15 13:02
4.	MPLOTC-MW-17A-061715	AHZ5D	15-11455	Water	06/17/15 13:00	06/18/15 13:02
5.	MPLOTC-MW-06-061715	AHZ5E	15-11456	Water	06/17/15 14:10	06/18/15 13:02
6.	MPLOTC-MW-19-061715	AHZ5F	15-11457	Water	06/17/15 15:10	06/18/15 13:02
7.	MPLOTC-MW-09-061715	AHZ5G	15-11458	Water	06/17/15 16:00	06/18/15 13:02
8.	MPLOTC-MW-13-061815	AHZ5H	15-11459	Water	06/18/15 09:40	06/18/15 13:02
9.	MPLOTC-MW-18-061815	AHZ5I	15-11460	Water	06/18/15 10:30	06/18/15 13:02
10.	MPLOTC-MW-FB-061815	AHZ5J	15-11461	Water	06/18/15 11:00	06/18/15 13:02
11.	MPLOTC-MW-07-061815	AHZ5K	15-11462	Water	06/18/15 11:20	06/18/15 13:02
12.	MPLOTC-MW-12-061815	AHZ5L	15-11463	Water	06/18/15 12:10	06/18/15 13:02

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: Trip Blanks-061715
SAMPLE

Lab Sample ID: AHZ5A
LIMS ID: 15-11452
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 13:19

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	103%
Bromofluorobenzene	99.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-21-061715
SAMPLE

Lab Sample ID: AHZ5B
LIMS ID: 15-11453
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 13:45

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	103%
Bromofluorobenzene	98.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-20-061715
SAMPLE

Lab Sample ID: AHZ5C
LIMS ID: 15-11454
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 14:10

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	98.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-17A-061715
SAMPLE

Lab Sample ID: AHZ5D
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 14:36

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	104%
Bromofluorobenzene	98.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-06-061715
SAMPLE

Lab Sample ID: AHZ5E
LIMS ID: 15-11456
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	99.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-19-061715
SAMPLE

Lab Sample ID: AHZ5F
LIMS ID: 15-11457
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	97.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-09-061715
SAMPLE

Lab Sample ID: AHZ5G
LIMS ID: 15-11458
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:53

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.03**	**0.20**	**7.2**
108-88-3	**Toluene**	**0.04**	**0.20**	**1.3**
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**40**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**1.1**
95-47-6	**o-Xylene**	**0.03**	**0.20**	**0.45**
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**18**
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**0.25**	**1.7**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	93.3%
Bromofluorobenzene	99.9%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-13-061815
SAMPLE

Lab Sample ID: AHZ5H
LIMS ID: 15-11459
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 16:19

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**0.61**
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	99.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-18-061815
SAMPLE

Lab Sample ID: AHZ5I
LIMS ID: 15-11460
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 16:45

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.03**	**0.20**	**0.67**
108-88-3	**Toluene**	**0.04**	**0.20**	**0.54**
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**0.24**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**1.1**
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-FB-061815
SAMPLE

Lab Sample ID: AHZ5J
LIMS ID: 15-11461
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 17:10

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	102%
Bromofluorobenzene	96.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-07-061815
SAMPLE

Lab Sample ID: AHZ5K
LIMS ID: 15-11462
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:06

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	6.4
108-88-3	Toluene	0.04	0.20	23
100-41-4	Ethylbenzene	0.04	0.20	100 E
179601-23-1	m,p-Xylene	0.05	0.40	300 E
95-47-6	o-Xylene	0.03	0.20	3.1
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	88 E
110-54-3	Hexane	0.10	0.20	140 E

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	9.8 E

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	99.9%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-07-061815
DILUTION

Lab Sample ID: AHZ5K
LIMS ID: 15-11462
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/07/15 14:08

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.53	4.0	6.4
108-88-3	Toluene	0.80	4.0	28
100-41-4	Ethylbenzene	0.74	4.0	110
179601-23-1	m,p-Xylene	1.0	8.0	530
95-47-6	o-Xylene	0.70	4.0	3.0 J
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	96
110-54-3	Hexane	1.9	4.0	93

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	12	15

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	99.1%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-12-061815
SAMPLE

Lab Sample ID: AHZ5L
LIMS ID: 15-11463
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 13:40

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**0.10 J**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.89**
95-47-6	**o-Xylene**	**0.03**	**0.20**	**1.2**
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	**Hexane**	**0.10**	**0.20**	**0.26**

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	98.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-062915A	Method Blank	10	NA	106%	98.0%	NA	0
LCS-062915A	Lab Control	10	NA	97.5%	105%	NA	0
LCSD-062915A	Lab Control Dup	10	NA	99.5%	99.1%	NA	0
AHZ5A	Trip Blanks-061715	10	NA	103%	99.6%	NA	0
LCS-062915A	Lab Control	10	NA	96.0%	99.7%	NA	0
LCSD-062915A	Lab Control Dup	10	NA	96.5%	102%	NA	0
AHZ5B	MPLOTC-MW-21-061715	10	NA	103%	98.5%	NA	0
MB-063015A	Method Blank	10	NA	107%	97.8%	NA	0
LCS-063015A	Lab Control	10	NA	98.2%	104%	NA	0
LCSD-063015A	Lab Control Dup	10	NA	98.0%	102%	NA	0
AHZ5C	MPLOTC-MW-20-061715	10	NA	107%	98.6%	NA	0
AHZ5D	MPLOTC-MW-17A-061715	10	NA	104%	98.2%	NA	0
AHZ5DMS	MPLOTC-MW-17A-061715	10	NA	95.7%	102%	NA	0
AHZ5DMSD	MPLOTC-MW-17A-061715	10	NA	95.4%	98.2%	NA	0
LCS-063015A	Lab Control	10	NA	96.6%	100%	NA	0
LCSD-063015A	Lab Control Dup	10	NA	93.2%	104%	NA	0
AHZ5E	MPLOTC-MW-06-061715	10	NA	106%	99.6%	NA	0
MB-070715A	Method Blank	10	NA	107%	94.3%	NA	0
LCS-070715A	Lab Control	10	NA	102%	102%	NA	0
LCSD-070715A	Lab Control Dup	10	NA	100%	99.1%	NA	0
AHZ5F	MPLOTC-MW-19-061715	10	NA	106%	97.2%	NA	0
LCS-070715A	Lab Control	10	NA	97.0%	101%	NA	0
LCSD-070715A	Lab Control Dup	10	NA	94.8%	100%	NA	0
AHZ5G	MPLOTC-MW-09-061715	10	NA	93.3%	99.9%	NA	0
AHZ5H	MPLOTC-MW-13-061815	10	NA	106%	99.2%	NA	0
AHZ5I	MPLOTC-MW-18-061815	10	NA	106%	100%	NA	0
AHZ5J	MPLOTC-MW-FB-061815	10	NA	102%	96.2%	NA	0
AHZ5K	MPLOTC-MW-07-061815	10	NA	100%	99.9%	NA	0
AHZ5KRE	MPLOTC-MW-07-061815	10	NA	100%	99.1%	NA	0
AHZ5L	MPLOTC-MW-12-061815	10	NA	106%	98.8%	NA	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-11452 to 15-11463

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: LCS-062915A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-062915A
LIMS ID: 15-11452
Matrix: Water
Data Release Authorized:
Reported: 07/10/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 06/29/15 10:58
LCSD: 06/29/15 11:24

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	9.84	10.0	98.4%	9.83	10.0	98.3%	0.1%
Toluene	9.56	10.0	95.6%	9.66	10.0	96.6%	1.0%
Ethylbenzene	10.2	10.0	102%	9.78	10.0	97.8%	4.2%
m,p-Xylene	20.8	20.0	104%	19.7	20.0	98.5%	5.4%
o-Xylene	10.1	10.0	101%	9.70	10.0	97.0%	4.0%
1,2-Dibromoethane	9.98	10.0	99.8%	9.96	10.0	99.6%	0.2%
Naphthalene	9.31	10.0	93.1%	9.73	10.0	97.3%	4.4%
Hexane	9.55	10.0	95.5%	8.97	10.0	89.7%	6.3%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	97.5%	99.5%
Bromofluorobenzene	105%	99.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: LCS-062915A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-062915A
LIMS ID: 15-11453
Matrix: Water
Data Release Authorized: VB
Reported: 07/10/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 06/29/15 11:50
LCSD: 06/29/15 12:16

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.92	1.00	92.0%	0.92	1.00	92.0%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	96.0%	96.5%
Bromofluorobenzene	99.7%	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: LCS-063015A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-063015A
LIMS ID: 15-11454
Matrix: Water
Data Release Authorized: VD
Reported: 07/10/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/ML
LCSD: NT3/ML
Date Analyzed LCS: 06/30/15 11:31
LCSD: 06/30/15 11:57

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	10.1	10.0	101%	9.91	10.0	99.1%	1.9%
Toluene	9.85	10.0	98.5%	9.52	10.0	95.2%	3.4%
Ethylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
m,p-Xylene	20.4	20.0	102%	20.4	20.0	102%	0.0%
o-Xylene	10.2	10.0	102%	10.2	10.0	102%	0.0%
1,2-Dibromoethane	10.2	10.0	102%	9.91	10.0	99.1%	2.9%
Naphthalene	9.89	10.0	98.9%	9.60	10.0	96.0%	3.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d8-Toluene	98.2%	98.0%
Bromofluorobenzene	104%	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-17A-061715
MATRIX SPIKE

Lab Sample ID: AHZ5D
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 17:36

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
	Reported in µg/L (ppb)			
86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	---
	Reported in mg/L (ppm)			

Volatile Surrogate Recovery

d8-Toluene	95.7%
Bromofluorobenzene	102%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-17A-061715
MATRIX SPIKE DUPLICATE

Lab Sample ID: AHZ5D
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 18:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
	Reported in µg/L (ppb)			
86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	---
	Reported in mg/L (ppm)			

Volatile Surrogate Recovery

d8-Toluene	95.4%
Bromofluorobenzene	98.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MB-062915A
METHOD BLANK

Lab Sample ID: MB-062915A
LIMS ID: 15-11452
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 12:42

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	98.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MB-063015A
METHOD BLANK

Lab Sample ID: MB-063015A
LIMS ID: 15-11454
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 13:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	97.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MB-070715A
METHOD BLANK

Lab Sample ID: MB-070715A
LIMS ID: 15-11457
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/ML
Date Analyzed: 07/07/15 12:26

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	94.3%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

Matrix: Water

Date Received: 06/18/15

Data Release Authorized:
Reported: 07/13/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
AHZ5B	MPLOTC-MW-21-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11453		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	82.5%		
AHZ5C	MPLOTC-MW-20-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11454		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	51.0%		
MB-061915	Method Blank	06/26/15	1.0	Diesel Range	< 0.10 U	0.10	0.02
15-11455		FID4A		Motor Oil Range	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	94.4%		
AHZ5D	MPLOTC-MW-17A-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11455		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	99.4%		
AHZ5E	MPLOTC-MW-06-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11456		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	94.6%		
AHZ5F	MPLOTC-MW-19-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11457		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	95.0%		
AHZ5G	MPLOTC-MW-09-061715	06/26/15	1.0	**Diesel**	**1.5**	0.10	0.02
15-11458		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DIESEL		
				o-Terphenyl	68.2%		
AHZ5H	MPLOTC-MW-13-061815	06/26/15	1.0	**Diesel**	**0.27**	0.10	0.02
15-11459		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DIESEL		
				o-Terphenyl	64.2%		
AHZ5I	MPLOTC-MW-18-061815	06/26/15	1.0	**Diesel**	**0.38**	0.10	0.02
15-11460		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DIESEL		
				o-Terphenyl	74.7%		
AHZ5J	MPLOTC-MW-FB-061815	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-11461		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	94.1%		
AHZ5K	MPLOTC-MW-07-061815	06/26/15	1.0	**Diesel**	**6.0 E**	0.10	0.02
15-11462		FID4A		**Motor Oil**	**0.24**	0.20	0.04
				HC ID	DIESEL/RRO		
				o-Terphenyl	64.4%		

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

Matrix: Water

Date Received: 06/18/15

Data Release Authorized:
Reported: 07/13/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
AHZ5K DL	MPLOTC-MW-07-061815	06/26/15	10	**Diesel**	**5.4**	1.0	0.22
15-11462		FID4A		Motor Oil	< 2.0 U	2.0	0.44
				HC ID	DIESEL		
				o-Terphenyl	87.6%		
AHZ5L	MPLOTC-MW-12-061815	06/26/15	1.0	**Diesel**	**0.45**	0.10	0.02
15-11463		FID4A		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	DIESEL		
				o-Terphenyl	82.2%		

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

FORM I

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

Client ID	OTER	TOT OUT
MPLOTC-MW-21-061715	82.5%	0
MPLOTC-MW-20-061715	51.0%	0
MB-061915	94.4%	0
LCS-061915	95.4%	0
LCSD-061915	96.6%	0
MPLOTC-MW-17A-061715	99.4%	0
MPLOTC-MW-17A-061715 MS	91.9%	0
MPLOTC-MW-17A-061715 MSD	84.9%	0
MPLOTC-MW-06-061715	94.6%	0
MPLOTC-MW-19-061715	95.0%	0
MPLOTC-MW-09-061715	68.2%	0
MPLOTC-MW-13-061815	64.2%	0
MPLOTC-MW-18-061815	74.7%	0
MPLOTC-MW-FB-061815	94.1%	0
MPLOTC-MW-07-061815	64.4%	0
MPLOTC-MW-07-061815 DL	87.6%	0
MPLOTC-MW-12-061815	82.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-11453 to 15-11463

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: MPLOTC-MW-17A-061715
MS/MSD

Lab Sample ID: AHZ5D
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 06/29/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Date Extracted MS/MSD: 06/19/15

Date Analyzed MS: 06/26/15 05:08
MSD: 06/26/15 05:32
Instrument/Analyst MS: FID4A/JLW
MSD: FID4A/JLW

Sample Amount MS: 500 mL
MSD: 500 mL
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 1.00
MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 0.10 U	2.46	3.00	82.0%	2.32	3.00	77.3%	5.9%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	91.9%	84.9%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-061915
LCS/LCSD

Lab Sample ID: LCS-061915
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 06/29/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 06/19/15

Date Analyzed LCS: 06/26/15 02:23
LCSD: 06/26/15 02:47
Instrument/Analyst LCS: FID4A/JLW
LCSD: FID4A/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.45	3.00	81.7%	2.52	3.00	84.0%	2.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	95.4%	96.6%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 06/18/15

ARI Job: AHZ5
Project: Masterpark Lot C
073-93368-06-09A

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-11453-AHZ5B	MPLOTC-MW-21-061715	500 mL	1.00 mL	06/19/15
15-11454-AHZ5C	MPLOTC-MW-20-061715	500 mL	1.00 mL	06/19/15
15-11455-061915MB1	Method Blank	500 mL	1.00 mL	06/19/15
15-11455-061915LCS1	Lab Control	500 mL	1.00 mL	06/19/15
15-11455-061915LCSD1	Lab Control Dup	500 mL	1.00 mL	06/19/15
15-11455-AHZ5D	MPLOTC-MW-17A-061715	500 mL	1.00 mL	06/19/15
15-11455-AHZ5DMS	MPLOTC-MW-17A-061715	500 mL	1.00 mL	06/19/15
15-11455-AHZ5DMSD	MPLOTC-MW-17A-061715	500 mL	1.00 mL	06/19/15
15-11456-AHZ5E	MPLOTC-MW-06-061715	500 mL	1.00 mL	06/19/15
15-11457-AHZ5F	MPLOTC-MW-19-061715	500 mL	1.00 mL	06/19/15
15-11458-AHZ5G	MPLOTC-MW-09-061715	500 mL	1.00 mL	06/19/15
15-11459-AHZ5H	MPLOTC-MW-13-061815	500 mL	1.00 mL	06/19/15
15-11460-AHZ5I	MPLOTC-MW-18-061815	500 mL	1.00 mL	06/19/15
15-11461-AHZ5J	MPLOTC-MW-FB-061815	500 mL	1.00 mL	06/19/15
15-11462-AHZ5K	MPLOTC-MW-07-061815	500 mL	1.00 mL	06/19/15
15-11463-AHZ5L	MPLOTC-MW-12-061815	500 mL	1.00 mL	06/19/15

APPENDIX B
SAMPLE INTEGRITY DATA SHEETS (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-93368-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-~~6~~ 06 - 061715

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/2015 **Time** 1410

Media Water **Station** MW-6

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: — Free Product Thickness: none

Date & Time of Measurement: 6/17/15 @ 928 - top of pump above WL.

Measurements are in feet below top of well casing.

Sample Intake Point: 60 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

(7)

Sampler (signature) [signature] **Date** 6/17/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID ~~MW-06~~ js1 MW-06
Date 6/8/2015
Time Begin Purge 1333
Time Collect Sample 1410

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1343		6.29	328	14.8	4.21	6.00
	1348		6.30	328	14.7	4.13	3.16
	1353		6.31	329	14.8	4.08	2.04
	1358		6.31	329	14.8	4.03	1.43
	1403		6.31	330	14.8	3.99	0.92
	1408		6.32	331	14.9	3.96	0.75

Comments:

Nitrogen Tank: 110 psi
Throttle: 50 psi
Cycle ID: 103 (10s/55)
CPM: 4
Purge Rate: ~200 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials js1

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-~~07~~ 06 - 061815

Sampling Location At end of sample tubing MPLOTC-FB- 061815

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/18/2015 **Time** 1120 (FB @ 11:00)

Media Water **Station** MW-7

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 48.01' Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 10:08

Measurements are in feet below top of well casing.

Sample Intake Point: 52 ft below top of well casing

Sample Description Clear, TPH odor, black specks

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
2x (5) 40 mL (2x (for FB))	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
2x (2) 500 mL (7) + (7)	NWTPH-Dx	Amber Glass	none

Sampler (signature) [signature] **Date** 6/18/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-07
Date 6/18/2015
Time Begin Purge 1040
Time Collect Sample 1120

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1050		6.51	371	16.1	0.48	3.85
	1055		6.57	371	16.1	0.33	2.57
	1100		6.60	370	16.2	0.28	2.21
	1105		6.62	370	16.2	0.26	1.89
	1110		6.62	371	16.2	0.25	1.79
	1115		6.63	371	16.1	0.25	1.57

Comments:

-TPH odor

-Collected FB @ MW-7 @ 11:00 by pouring lab-provided DI into bottle set MPLOTC-FB-061815

Nitrogen Tank: 110 psi
Throttle: 40 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~250 mL/min
PID: 46.3 ppm peak

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-~~8~~ 06/7/15 09

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/2015 **Time** 16:00

Media Water **Station** MW-9

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 51.67' Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 9:37

Measurements are in feet below top of well casing.

Sample Intake Point: 54 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

7

Sampler (signature) Jill Larell **Date** 6/17/2015

Supervisor (signature) **Date**

FIELD PARAMETERS SHEET

Well ID MW-09
Date 6/17/2015
Time Begin Purge 1520
Time Collect Sample 16:00

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1530		6.45	325	15.0	0.50	12.3
	1535		6.46	326	15.0	0.31	5.21
	1540		6.48	327	15.0	0.25	1.37
	1545		6.48	329	15.0	0.22	1.20
	1550		6.48	330	15.0	0.20	0.91
	1555		6.48	331	15.1	0.18	0.75

Comments:

Nitrogen Tank: 110 psi
Throttle: 60 psi
Cycle ID: 103 (10/5)
CPM: 4
Purge Rate: ~240 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-12- 061815

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/18/2015 **Time** ~~1205~~ 1210 JSI

Media Water **Station** MW-12

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: – Free Product Thickness: none

Date & Time of Measurement: 6/17/15 10:12 - Not collected - Not stable due to IAS/SVE

Measurements are in feet below top of well casing.

Sample Intake Point: 59 ft below top of well casing

Sample Description clear, rust color + specks

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

Sampler (signature) [signature] **Date** 6/18/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-12
Date 6/18/2015
Time Begin Purge 1126
Time Collect Sample ~~1205~~ 1210 jsl

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1136		7.95	216.3	17.5	12.60	25.7
	1141		8.02	211.4	16.7	12.50	11.2
	1146		8.04	208.1	16.2	11.09	5.84
	1151		7.94	207.1	16.2	12.47	5.26
	1156		8.06	210.8	16.3	12.57	5.99
	1201		8.08	210.9	16.3	9.93	5.61
	1206		8.08	209.8	16.3	9.89	3.53
	1210		8.09	208.2	16.3	9.90	2.44

Comments:

Nitrogen Tank: 110 psi
Throttle: 40 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~~2260~~ mL/min
PID: 0.0 ppm

jsl ~100

- TPH odor, rusty brown, turbid.
- Installed pump for sampling, removed after for cleaning
- air / SVE / IAS in operation - fluctuating water levels.
- Lots of air in sample tubing

Water level fluctuation with pump cycle: n/a

Sampler's Initials jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-13- 061815

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/18/2015 **Time** 09:40

Media Water **Station** MW-13

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 54.70' Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 9:46

Measurements are in feet below top of well casing.

Sample Intake Point: 60 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

7

Sampler (signature) [signature] **Date** 6/18/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-13
Date 6/18/2015
Time Begin Purge 0858
Time Collect Sample 0940

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	0908		7.13	178.1	14.7	10.35	1.47
	0913		7.17	172.5	14.7	10.91	0.77
	0918		7.21	169.3	14.7	11.61	0.93
	0923		7.04	185.2	14.8	10.41	0.89
	0928		7.02	183.0	14.7	9.57	0.77
	0933		7.09	179.4	14.7	10.19	0.27
	0938		7.13	173.7	14.7	10.71	1.32

Comments:

Nitrogen Tank: 110 psi
Throttle: 56 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~300 mL/min
PID: 0.0 ppm

Readings stable but jumping around a bit. Likely due to IAS/SVE system in operation.

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSP

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-17A- ~~061715~~ -061715

Sampling Location At end of sample tubing

Low Flow Sampling x MS/MSD Volume

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/15 **Time** 1300

Media Water **Station** MW-17A

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 84.16 Free Product Thickness: none

Date & Time of Measurement: 6/17/15 @ 12:18

Measurements are in feet below top of well casing.

Sample Intake Point: 90 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
3 x (5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
3 x (2) 500 mL	NWTPH-Dx	Amber Glass	none

3x (7)
(21)

Sampler (signature) [signature] **Date** 6/17/2015

Supervisor (signature) [signature] **Date** 6/19/2015

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Golder Associates Inc.

FIELD PARAMETERS SHEET

Well ID MW-17A
Date 6/17/2015
Time Begin Purge 1220
Time Collect Sample 1300

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1230		6.20	155.7	13.1	3.91	171
	1235		6.25	155.4	13.0	3.72	78.9
	1240		6.26	155.0	12.9	3.74	50.8
	1245		6.27	155.8	12.9	3.53	41.0
	1250		6.28	156.6	12.9	3.31	33.8
	1255		6.29	157.7	12.9	3.13	29.6

(pH)

Comments: -collected MS/MSD volume

Nitrogen Tank: 110 psi
Throttle: 60 psi
Cycle ID: 50 (20s/10s)
CPM: 2
Purge Rate: ~300 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSP

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-18-~~06~~ 1815

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/18/15 **Time** 1030

Media Water **Station** MW-18

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 49.51' Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 10:01

Measurements are in feet below top of well casing.

Sample Intake Point: 54 ft below top of well casing

Sample Description ~~clear,~~ slight TPH odor, slightly turbid

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

(7)

Sampler (signature) [signature] **Date** 6/18/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-18
Date 6/18/2015
Time Begin Purge 0951
Time Collect Sample 1030

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1001		8.04	511	16.0	10.96	45.6
	1006		8.05	513	15.4	10.90	49.1
	1011		8.02	517	15.2	10.87	42.4
	1016		8.04	515	15.2	11.06	49.1
	1021		8.07	514	15.2	11.04	66.8
	1026		8.05	515	15.2	10.89	49.6

Comments:

Nitrogen Tank: 110 psi
Throttle: 40 psi
Cycle ID: 50 (20/10)
CPM: .2
Purge Rate: ~200 mL/min
PID: ~~9.4~~ 20.0 ppm (peak) jsl

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-19-Ø617/5

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/2015 **Time** 15:1Ø

Media Water **Station** MW-19

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 45.94 Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 09:19

Measurements are in feet below top of well casing.

Sample Intake Point: 50 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

7

Sampler (signature) [signature] **Date** 6/17/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-19
Date 6/17/2015
Time Begin Purge 1436
Time Collect Sample 1510

144
JSI

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1440		6.73	401	14.3	1.05	5.90
	1445		6.74	401	14.4	0.80	3.89
	1450		6.74	401		0.66	2.00
	1455		6.73	401	14.3	0.50	2.51
	1500		6.74	400	14.3	0.35	1.48
	1505		6.75	400	14.3	0.26	0.86

Comments:

Nitrogen Tank: 110 psi
Throttle: 50 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~280 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-20- 061715

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/2015 **Time** 12:00

Media Water **Station** MW-20

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 106.68 Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 11:22

Measurements are in feet below top of well casing.

Sample Intake Point: 111 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

7

Sampler (signature) [signature] **Date** 6/17/2015

Supervisor (signature) [signature] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-20
Date 6/17/2015
Time Begin Purge 1124
Time Collect Sample 1200

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1134		6.80	356	13.6	7.70	5.06
	1139		6.79	350	13.5	7.56	2.06
	1144		6.78	360	13.5	7.42	5.76
	1149		6.77	349	13.4	7.41	5.17
	1154		6.78	349	13.4	7.42	2.02
	1159		6.77	350	13.3	7.41	1.06

Comments:

Nitrogen Tank: 110 psi
Throttle: 70 psi
Cycle ID: 50 (20s/10s)
CPM: 2
Purge Rate: ~300 mL/min
PID: 00 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-21- Ø61715

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/17/2015 **Time** 11:10

Media Water **Station** MW-21

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 102.81 Free Product Thickness: none

Date & Time of Measurement: 6/17/2015 @ 10:26

Measurements are in feet below top of well casing.

Sample Intake Point: 107 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

7

Sampler (signature) Jill Lewell **Date** 6/17/2015

Supervisor (signature) [illegible] **Date** 6/19/2015

FIELD PARAMETERS SHEET

Well ID MW-21
Date 6/17/2015
Time Begin Purge 10:32
Time Collect Sample 11:10

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	10:42		6.10	321	14.3	7.17	8.63
	10:47		6.08	320	14.1	6.79	5.56
	10:52		6.10	322	13.6	6.52	4.26
	10:57		6.13	325	13.4	6.37	2.71
	11:02		6.12	327	13.5	6.27	2.28
	11:07		~~6.12~~ JSI	326	13.5	6.12	1.98
			6.12				

Comments:

Nitrogen Tank: 110 psi
Throttle: 60 psi
Cycle ID: 50 (20s/10s)
CPM: 2
Purge Rate: ~200 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** MPLOTC-MW-22- 062515

Sampling Location At end of sample tubing MPLOTC-MW-22-DUP- 062515

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/25/2015 **Time** 1050/1055 (DUP)

Media Water **Station** MW-22

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 82.95' Free Product Thickness: none

Date & Time of Measurement: 6/25/2015 @ 10:17

Measurements are in feet below top of well casing.

Sample Intake Point: 89 ft below top of well casing

Sample Description clear, TPH odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5 x 2) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
2x (2) 500 mL	NWTPH-Dx	Amber Glass	none

Sampler (signature) [signature] **Date** 6/25/2015

Supervisor (signature) [signature] **Date** 6/26/2015

FIELD PARAMETERS SHEET

Well ID MW-22-~~062515~~
Date 6/25/2015
Time Begin Purge 1020
Time Collect Sample 1050/1055 (D.p)

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1025		6.76	223.8	14.3	1.39	45.1
	1030		6.73	231.8	14.0	0.93	21.6
	1035		6.77	283.6	13.6	0.72	7.77
	1040		6.81	328	13.6	0.65	7.12
	1045		6.82	342	13.8	0.57	6.90
	1050		6.82	354	13.6	0.52	3.34

Comments:

Nitrogen Tank: 110 psi
Throttle: 65 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~300 mL/min
PID: 00 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JKL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C **Project No.** 073-96668-06.09A

Site Location SeaTac, WA **Sample ID** PORT-MW-B- 062515

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 6/25/15 **Time** 1225

Media Water **Station** PORT-MW-B

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 89.67 Free Product Thickness: none

Date & Time of Measurement: 6/25/15 @ 11:47

Measurements are in feet below top of well casing.

Sample Intake Point: 89 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

Aliquot Amount	Analysis	Container	Preservative
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NWTPH-Dx	Amber Glass	none

Sampler (signature) [signature] **Date** 6/25/15

Supervisor (signature) [signature] **Date** 6/26/2015

FIELD PARAMETERS SHEET

Well ID PORT-MW-B
Date 6/25/15
Time Begin Purge 1155
Time Collect Sample 1225

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1200		6.50	284.3	15.1	4.91	118
	1205		6.49	285.9	14.5	4.49	38.8
	1210		6.50	288.0	14.3	4.15	12.8
	1215		6.51	288.7	14.3	4.00	6.39
	1220		6.51	289.4	14.4	3.89	4.59
	1225		6.51	290.1	14.3	3.80	4.18

Comments:

Nitrogen Tank: 110 psi
Throttle: 70 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~300 mL/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSR

APPENDIX C
DATA VALIDATION MEMORANDUM

DATA VALIDATION CHECKLIST

Project Name:	Masterpark Lot C – Seatac Development Site
Project Number:	073-93368.06.09A
Sample Identification(s):	Trip Blank-061715, MPLOTC-MW-06-061715, MPLOTC-MW-21-061715, MPLOTC-MW-17A-061715, MPLOTC-MW-19-061715, MPLOTC-MW-09-061715, MPLOTC-MW-13-061815, MPLOTC-MW-18-061815, MPLOTC-FB-061815, MPLOTC-MW-07-061815, MPLOTC-MW-12-061815, Trip Blank-062515, MPLOTC-MW-20-061715, MPLOTC-MW-22-062515, MPLOTC-MW-22-DUP-062515, PORT-MW-B-062515
Sample Date(s):	6/17/2015, 6/18/2015, and 6/25/2015
Sample Team:	Jill Lamberts, Aaron Rydecki, Golder Associates
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources Inc. (ARI) – Tukwila WA
Analyses:	EPA 8260C (Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes, EDB, N-hexane, Naphthalene), NWPTH-Dx (Diesel and Motor Oil)
Laboratory Report No.:	AHZ5 and AII2

FIELD DATA PACKAGE DOCUMENTATION

	Reported		**Performance Acceptable**		**Not Required**
Field Sampling Logs:	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Collection technique (bailer, pump, etc.)		X		X	
6. Sample container type		X		X	
7. Preservation methods		X		X	
8. Chain-of-custody form completed		X		X	
9. Required analytical methods requested		X		X	
10.Field sample logs completed properly and signed		X		X	
11. Number and type of field QC samples collected		X		X	
12. Field equipment calibration		X		X	
13. Field equipment decontamination		X		X	

QC – quality control

COMMENTS:

Performance was acceptable.

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X	X		
4. Reporting limits of analysis		X		X	
5. Sample collection date		X		X	
6. Laboratory sample received date		X		X	
7. Sample preparation/extraction date		X		X	
8. Sample analysis date		X		X	
9. Copy of chain-of-custody form signed by lab sample custodian		X		X	
10. Narrative summary of QA or sample problems provided		X	X		

QA – quality assurance

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- Cooler temperatures were all 4 ± 2°C, except for samples from SDG AII2 which was received with a cooler temperature of 9.8°C. Water temperature at the time of sample collection was 13.6°C for the sample from MPLOTC-MW-22 and 14.3°C for the sample from PORT-MW-B. No action was taken as there was not enough time for samples to cool since the samples were received at the lab with 2 hours of sampling. The temperature reduction from time of sampling to submittal at the lab shows that cooling had begun.
- 2 Trip Blanks, 12 samples, 1 field duplicate, and 1 field blank submitted per work plan.
- Lab reported Gasoline, Benzene, Toluene, Ethylbenzene, and Xylenes from EPA method 8260C rather than using the NWTPH-Gx/BTEX method as was used in previous events. The lab was contacted for clarification and the lab stated that the previously utilized method (8021) had been discontinued and method EPA 8260C will be used going forward. Reporting limits and results were similar to previous events so no action is required.
- For SDG AII2, 1 of 5 vials for PORT-MW-B-062515 and PORT-MW-22-DUP-062515 had small bubbles. No action was taken. Lab defaults to using vials with no bubbles for analysis.

ORGANIC ANALYSES

Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes, EDB, N-hexane, Naphthalene (EPA 8260C)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X	X		
2. Reporting limits		X		X	
3. Blanks					
a. Method blanks		X		X	
b. Field blanks and Trip Blanks		X	X		
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X	X		
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X	X		
8. MS / MSD RPD		X	X		
9. LCS / LCSD RPD		X		X	
10. Surrogate %R		X		X	
11. Laboratory Duplicate RPD	X				X
12. Field duplicate comparison		X		X	

%R – percent recovery RPD – relative percent difference

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- SDG AHZ5: MPLOTC-MW-07-061815 was initially analyzed within hold time but had multiple analytes (toluene, ethylbenzene, m,p-xylene, naphthalene, hexane, and gasoline) that were outside of the calibration range and qualified "E" by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis at a 20X dilution was analyzed out of the hold time at 19 days from sampling date. Results were comparable to the initial analysis. Out of hold results were qualified as **estimated (J/UJ)**. The validator selected the results to report and qualified the results not to be reported as **DNR** (do not report). In general, if the result was a non-detect, the lower detection limit was selected for reporting (i.e. EDB). If the result was within the calibration range and was a detected result, the higher of the two results were selected for reporting (i.e. benzene, o-xylene in initial result, and toluene for diluted result). If the initial result was qualified as "E" by the lab, the diluted result was reported (i.e. ethylbenzene, m,p-xylene, naphthalene, hexane, and gasoline).
- SDG AHZ5: The BTEX compounds were not spiked in the matrix spike (MS) and matrix spike duplicate (MSD) due to analyst error for sample MPLOTC-MW-17A-061715. The gasoline MS/MSD result was in control. No further action taken other than to note. The laboratory control spike (LCS) and the laboratory control spike duplicate (LCSD) suffices for precision and accuracy evaluation.
- Trip Blank-061715 and Field Blank MPLOTC-MW-FB-061815 had no detections. Trip Blank-062515 had detections of m,p-xylene, naphthalene, and hexane at 0.40, 1.9, and 0.19 J µg/L, respectively. No action was taken for detections in the Trip Blank-062515 since associated sample results either had detections of these analytes much greater than 10X the blank contamination or were non-detect in the sample.
- SDG AII2: A field duplicate was collected and sample IDs were MPLOTC-MW-22-062515 and MPLOTC-MW-22-DUP-062515. Relative percent differences were <20% for all analytes or results were < 5X Limit of Quantification (LOQ).

- SDG AII5: Samples MPLOTC-MW-22-062515 and MPLOTC-MW-22-DUP-062515 had multiple analytes (ethylbenzene and m,p-xylene) that were outside of the calibration range and qualified "E" by the lab. The reanalysis was performed at a 2X dilution. Results were comparable to the initial analysis. The validator selected the results to report and qualified the results not to be reported as **DNR** (do not report). In general, if the result was a non-detect, the lower detection limit was selected for reporting (i.e. EDB). If the result was within the calibration range and was a detected result, the higher of the two results were selected for reporting (i.e. benzene, o-xylene, naphthalene, and hexane in initial result, and toluene and gasoline for diluted result). If the initial result was qualified as "E" by the lab, the diluted result was reported (i.e. ethylbenzene and m,p-xylene).
- SDG AHZ5 and AII2: Reporting limits were raised for EDB in samples MPLOTC-MW-22-062515, and MPLOTC-MW-22-DUP-062515. Lab was contacted for more information and reported that the samples were analyzed at a dilution due to the presence of other non-target compounds. High levels of volatiles made a 10X and 20X dilutions necessary to prevent instrument damage. No further action was taken other than to note.

ORGANIC ANALYSES

NWTPH-Dx (Diesel and Motor Oil)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
a. Method blanks		X		X	
b. Field blanks		X		X	
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X		X	
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X		X	
8. MS / MSD RPD		X		X	
9. LCS / LCSD RPD		X		X	
10. Surrogate %R		X		X	
11. Laboratory Duplicate RPD	X				X
12. Field duplicate comparison		X		X	

%R – percent recovery RPD – relative percent difference

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- SDG AHZ5: MPLOTC-FB-061815 field blank (FB) had no detections.
- SDG AHZ5: Diesel for MPLOTC-MW-07-061815 had to be analyzed at a dilution because initial analysis was qualified E by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis was within the instrument calibration range and is the result that should be reported. The initial result is qualified as **DNR** (do not report). The diluted result for Motor Oil is also qualified as **DNR** to select the result with the lower detection limit.
- SDG AHZ5: The motor oil result for samples MPLOTC-MW-07-061815 (initial result) was qualified by the lab as RRO (*indicates results of organics or additional hydrocarbons in ranges are not identifiable*). Qualify motor oil results as **estimated (J)**.
- SDG AII2: The diesel result for samples MPLOTC-MW-22-062515 and MPLOTC-MW-22-DUP-062515 was qualified by the lab as DRO (*indicates results of organics or additional hydrocarbons in ranges are not identifiable*). Qualify diesel results as **estimated (J)**.
- SDG ZN59: A field duplicate was collected and sample IDs were MPLOTC-MW-22-120514 and MPLOTC-MW-22-DUP-120514. Relative percent differences (RPDs) were <20% or results were <5X RL for all analytes.

DATA VALIDATION CHECKLIST
SUMMARY AND DATA QUALIFIER CODES

Project Name:	Masterpark Lot C – Seatac Development Site
Project Number:	073-93368.06.09A
Sample Identification(s):	Trip Blank-061715, MPLOTC-MW-06-061715, MPLOTC-MW-21-061715, MPLOTC-MW-17A-061715, MPLOTC-MW-19-061715, MPLOTC-MW-09-061715, MPLOTC-MW-13-061815, MPLOTC-MW-18-061815, MPLOTC-FB-061815, MPLOTC-MW-07-061815, MPLOTC-MW-12-061815, Trip Blank-062515, MPLOTC-MW-20-061715, MPLOTC-MW-22-062515, MPLOTC-MW-22-DUP-062515, PORT-MW-B-062515
Sample Date(s):	6/17/2015, 6/18/2015, and 6/25/2015
Sample Team:	Jill Lamberts, Aaron Rydecki, Golder Associates
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources Inc. (ARI) – Tukwila WA
Analyses:	EPA 8260C (Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes, EDB, N-hexane, Naphthalene), NWPTH-Dx (Diesel and Motor Oil)
Laboratory Report No.:	AHZ5 and AII2

Reference

United States Environmental Protection Agency (USEPA). 2014. USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. OSWER 9355.0-132.EPA-540-R-014-002, August.

Data Qualifier Definitions

U	The constituent was analyzed for, but was not detected above the reported sample quantitation limit.
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
J-	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased low.
UJ	The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met.
R	Data are rejected due to significant exceedance of quality control criteria. The analyte may or may not be present. Additional sampling and analysis may be required to determine the presence or absence of the constituent. For statistical reasons, rejected values are not included in the database.
UR	The constituent is rejected at the reported quantitation limit.
DNR	Do Not Report. More than one set of results are reported due to re-analyses or re-reporting (below reporting level). This result should not be reported.

Data Qualifier Summary

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
MPLOTC-MW-07-061815	Diesel	6.0 E µg/L	DNR	Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOTC-MW-07-061815 DL	Motor Oil	< 2.0 U µg/L	DNR	Report initial analysis for this analyte.

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
MPLOTC-MW-07-061815 MPLOTC-MW-22-062515 MPLOTC-MW-22-DUP-062515	Motor Oil Diesel Diesel	0.24 mg/L 1.0 mg/L 1.1 mg/L	J J J	Laboratory identified results as organics or additional hydrocarbons in ranges that are not identifiable. Results are estimated.
MPLOTC-MW-07-061815	Toluene Ethylbenzene m,p-Xylene Naphthalene Hexane Gasoline	23 µg/L 100 E µg/L 300 E µg/L 88 E µg/L 140 E µg/L 9.8 E mg/L	DNR DNR DNR DNR DNR DNR	Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOTC-MW-07-061815 DL	Benzene o-Xylene 1,2-Dibromomethane	6.4 µg/L 3.0 J µg/L < 4.0 U µg/L	DNR DNR DNR	Report initial analysis for this analyte.
MPLOTC-MW-07-061815 DL	Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene 1,2-Dibromomethane Naphthalene Hexane Gasoline	6.4 µg/L 28 µg/L 110 µg/L 530 µg/L 3.0 J µg/L < 4.0 U µg/L 96 µg/L 93 µg/L 15 mg/L	J J J J J UJ J J J	Diluted result was analyzed out of hold time. Results are qualified as estimated.
MPLOTC-MW-22-062515	Toluene Ethylbenzene m,p-Xylene Gasoline	7.1 µg/L 800 E µg/L 1400 E µg/L 12 mg/L	DNR DNR DNR DNR	Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOTC-MW-22-062515 DL	Benzene o-Xylene 1,2-Dibromomethane Naphthalene Hexane	4.6 µg/L < 4.0 µg/L < 4.0 µg/L 300 µg/L < 4.0 µg/L	DNR DNR DNR DNR DNR	Report initial analysis for this analyte.
MPLOTC-MW-22-DUP-062515	Toluene Ethylbenzene m,p-Xylene Gasoline	7.3 µg/L 810 E µg/L 1400 E µg/L 12 mg/L	DNR DNR DNR DNR	Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOTC-MW-22-DUP-062515 DL	Benzene o-Xylene 1,2-Dibromomethane Naphthalene Hexane	4.2 µg/L < 4.0 U µg/L < 4.0 U µg/L 320 µg/L 4.4 µg/L	DNR DNR DNR DNR DNR	Report initial analysis for this analyte.

VALIDATION PERFORMED BY:	Jill Lamberts, Golder Associates
VALIDATOR'S SIGNATURE:	
DATE:	July 13, 2015
REVIEWED BY:	Gary Zimmerman, Golder Associates
REVIEWER'S SIGNATURE	
DATE:	August 3, 2015

Please analyze under current MSA betwn Golder + ARZ

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number: AHZ5	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425 883 0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 2
Date: 6/17/2015	Ice Present?
No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	NWTPH-Gx BTEX	EDB by 8260 report to MDL	n-hexane	Naphthalene	NWTPH-Dx				Notes/Comments
Trip Blanks-061715	6/17/15	–	W	3	X	X	X	X					
MPLOTC-MW-21-061715		11:10		7	X	X	X	X	X				
MPLOTC-MW-20-061715		12:00		7	X	X	X	X	X				
MPLOTC-MW-17A-061715		13:00		~~7~~ 21	X	X	X	X	X				MS/MSD volume
MPLOTC-MW-06-061715		14:10		7	X	X	X	X	X				
MPLOTC-MW-19-061715		15:10		7	X	X	X	X	X				
MPLOTC-MW-09-061715		16:00		7	X	X	X	X	X				
MPLOTC-MW-13-061815	6/18/15	09:40		7	X	X	X	X	X				
MPLOTC-MW-18-061815		10:30		7	X	X	X	X	X				
MPLOTC-FB-061815		11:00		7	X	X	X	X	X				

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
*Ecology Elm EDP	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
Pls cc. jlamberts + dmorell@golder.com	Printed Name: Jill Lamberts	Printed Name: Chris Arnold	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 6/18/2015 1302	Date & Time: 6/18/15 1322	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

QA/QC J. Lamberts 7/27/2015

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number:	
Turn-around Requested:	Standard
Page:	2 of 2
ARI Client Company:	Golder
Phone:	425 883 0777
Date:	6/18/2015
Ice Present?	
Client Contact:	D. Morell, J. Lamberts
No. of Coolers:	
Cooler Temps:	
Client Project Name:	Masterpark Lot C
Client Project #:	073-93368-06-09A
Samplers:	Lamberts

Sample ID	Date	Time	Matrix	No. Containers	NWTPH-Dx BTEX	EDB by 8260 reportable	N-hexane	Naphthalene	NWTPH-Dx				Notes/Comments
MPLOTC-MW-07-061815	6/18/15	11:20	W	7	X	X	X	X	X				4 more samples to come next week
MPLOTC-MW-12-061815	↓	12:10	↓	7	X	X	X	X	X				

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
* Ecology EIM EDD Pls cc jlamberts and dmorell@golder.com	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Jill Lamberts	Printed Name: C. Mitchell	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 6/18/2015 1202	Date & Time: 6/18/15 1302	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

QA/QC J. Lamberts 7/27/2015

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: Trip Blanks-061715
SAMPLE

Lab Sample ID: AHZ5A
LIMS ID: 15-11452
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 13:19

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	103%
Bromofluorobenzene	99.6%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-21-061715
SAMPLE

Lab Sample ID: AHZ5B
LIMS ID: 15-11453
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 13:45

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	103%
Bromofluorobenzene	98.5%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-20-061715
SAMPLE

Lab Sample ID: AHZ5C
LIMS ID: 15-11454
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 14:10

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	98.6%

FORM I

AHZ5 : 000005

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-17A-061715
SAMPLE

Lab Sample ID: AHZ5D
LIMS ID: 15-11455
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 14:36

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	104%
Bromofluorobenzene	98.2%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-06-061715
SAMPLE

Lab Sample ID: AHZ5E
LIMS ID: 15-11456
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	99.6%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-19-061715
SAMPLE

Lab Sample ID: AHZ5F
LIMS ID: 15-11457
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	97.2%

FORM I

AHZ5 : 000011

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-09-061715
SAMPLE

Lab Sample ID: AHZ5G
LIMS ID: 15-11458
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/17/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 15:53

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.03**	**0.20**	**7.2**
108-88-3	**Toluene**	**0.04**	**0.20**	**1.3**
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**40**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**1.1**
95-47-6	**o-Xylene**	**0.03**	**0.20**	**0.45**
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**18**
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**0.25**	**1.7**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	93.3%
Bromofluorobenzene	99.9%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-13-061815
SAMPLE

Lab Sample ID: AHZ5H
LIMS ID: 15-11459
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 16:19

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**0.61**
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	99.2%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-18-061815
SAMPLE

Lab Sample ID: AHZ5I
LIMS ID: 15-11460
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 16:45

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	**Benzene**	**0.03**	**0.20**	**0.67**
108-88-3	**Toluene**	**0.04**	**0.20**	**0.54**
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**0.24**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**1.1**
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	100%

FORM I

AHZ5 : 88814

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample ID: MPLOTC-MW-FB-061815
SAMPLE

Lab Sample ID: AHZ5J
LIMS ID: 15-11461
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/29/15 17:10

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	102%
Bromofluorobenzene	96.2%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-07-061815
SAMPLE

Lab Sample ID: AHZ5K
LIMS ID: 15-11462
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:06

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	Benzene	0.03	0.20	6.4	
108-88-3	Toluene	0.04	0.20	23	DNR
100-41-4	Ethylbenzene	0.04	0.20	100 E	DNR
179601-23-1	m,p-Xylene	0.05	0.40	300 E	DNR
95-47-6	o-Xylene	0.03	0.20	3.1	
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U	
91-20-3	Naphthalene	0.12	0.50	88 E	DNR
110-54-3	Hexane	0.10	0.20	140 E	DNR

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	9.8 E	DNR

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	99.9%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-07-061815
DILUTION

Lab Sample ID: AHZ5K
LIMS ID: 15-11462
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/07/15 14:08

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result		
71-43-2	Benzene	0.53	4.0	6.4	J	DNR
108-88-3	Toluene	0.80	4.0	28	J	
100-41-4	Ethylbenzene	0.74	4.0	110	J	
179601-23-1	m,p-Xylene	1.0	8.0	530	J	
95-47-6	o-Xylene	0.70	4.0	3.0 J	J	DNR
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U	UJ	DNR
91-20-3	Naphthalene	2.4	10	96	J	
110-54-3	Hexane	1.9	4.0	93	J	

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	12	15	J

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	99.1%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS
Page 1 of 1

Sample ID: MPLOTC-MW-12-061815
SAMPLE

Lab Sample ID: AHZ5L
LIMS ID: 15-11463
Matrix: Water
Data Release Authorized:
Reported: 07/13/15

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A
Date Sampled: 06/18/15
Date Received: 06/18/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 13:40

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	**Ethylbenzene**	**0.04**	**0.20**	**0.10 J**
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.89**
95-47-6	**o-Xylene**	**0.03**	**0.20**	**1.2**
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	**Hexane**	**0.10**	**0.20**	**0.26**

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	106%
Bromofluorobenzene	98.8%

FORM I

AHZ5 : 000113

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 2

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

Matrix: Water

Date Received: 06/18/15

Data Release Authorized:
Reported: 07/13/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL	
AHZ5B	MPLOTC-MW-21-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11453		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	82.5%			
AHZ5C	MPLOTC-MW-20-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11454		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	51.0%			
MB-061915	Method Blank	06/26/15	1.0	Diesel Range	< 0.10 U	0.10	0.02	
15-11455		FID4A		Motor Oil Range	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	94.4%			
AHZ5D	MPLOTC-MW-17A-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11455		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	99.4%			
AHZ5E	MPLOTC-MW-06-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11456		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	94.6%			
AHZ5F	MPLOTC-MW-19-061715	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11457		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	95.0%			
AHZ5G	MPLOTC-MW-09-061715	06/26/15	1.0	**Diesel**	**1.5**	0.10	0.02	
15-11458		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DIESEL			
				o-Terphenyl	68.2%			
AHZ5H	MPLOTC-MW-13-061815	06/26/15	1.0	**Diesel**	**0.27**	0.10	0.02	
15-11459		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DIESEL			
				o-Terphenyl	64.2%			
AHZ5I	MPLOTC-MW-18-061815	06/26/15	1.0	**Diesel**	**0.38**	0.10	0.02	
15-11460		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DIESEL			
				o-Terphenyl	74.7%			
AHZ5J	MPLOTC-MW-FB-061815	06/26/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11461		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	94.1%			
AHZ5K	MPLOTC-MW-07-061815	06/26/15	1.0	**Diesel**	**6.0 E**	0.10	0.02	DNR
15-11462		FID4A		**Motor Oil**	**0.24**	0.20	0.04	J
				HC ID	DIESEL/RRO			
				o-Terphenyl	64.4%			

FORM I

AHZ5 : 000021

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 2 of 2

QC Report No: AHZ5-Golder Associates
Project: Masterpark Lot C
073-93368-06-09A

Matrix: Water

Date Received: 06/18/15

Data Release Authorized:
Reported: 07/13/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL	
AHZ5K DL	MPLOTC-MW-07-061815	06/26/15	10	**Diesel**	**5.4**	1.0	0.22	
15-11462		FID4A		Motor Oil	< 2.0 U	2.0	0.44	DNR
				HC ID	DIESEL			
				o-Terphenyl	87.6%			
AHZ5L	MPLOTC-MW-12-061815	06/26/15	1.0	**Diesel**	**0.45**	0.10	0.02	
15-11463		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DIESEL			
				o-Terphenyl	82.2%			

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

FORM I

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA between Golder + ARI

ARI Assigned Number: ATI2	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-094	Samplers: J. Lamberts, A. Rydecki

Page 1 of 1	
Date: 6/25/15	Ice Present?
No of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	NW TPH-Gx BTEX	EDB by 8260 report to MDL	Naphthalene	N-Hexane	NW TPH-Dx				Notes/Comments
TripBlank-062515	6/25/15	↓	W	3	X	X	X	X					
MPLOTC-MW-22-062515		1050		7	X	X	X	X	X				
MPLOTC-MW-22-DUP-062515		1055		7	X	X	X	X	X				
PORT-MW-B-062515		1225		7	X	X	X	X	X				
END OF SAMPLING EVENT													

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
Please include Ecology EIM EDD. Pls cc. dmorell + jlamberts@golder.com	[signature]	[signature]		
	Printed Name: J. Lamberts	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Golder	Company: ARI	Company	Company
	Date & Time: 6/25/2015 1330	Date & Time: 6/25/15 1330	Date & Time	Date & Time

QA/QC J. Lamberts 7/27/2015

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TripBlank-062515**
 SAMPLE

Lab Sample ID: AII2A
LIMS ID: 15-11758
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:32

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.40**
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	**Naphthalene**	**0.12**	**0.50**	**1.9**
110-54-3	**Hexane**	**0.10**	**0.20**	**0.19 J**

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	104%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTC-MW-22-062515
SAMPLE

Lab Sample ID: AII2B
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 18:25

Sample Amount: 1.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	**Benzene**	**0.27**	**2.0**	**5.9**	
108-88-3	**Toluene**	**0.40**	**2.0**	**7.1**	DNR
100-41-4	**Ethylbenzene**	**0.37**	**2.0**	**800 E**	DNR
179601-23-1	**m,p-Xylene**	**0.52**	**4.0**	**1,400 E**	DNR
95-47-6	**o-Xylene**	**0.35**	**2.0**	**2.0**	
106-93-4	1,2-Dibromoethane	0.74	2.0	< 2.0 U	
91-20-3	**Naphthalene**	**1.2**	**5.0**	**310**	
110-54-3	**Hexane**	**0.95**	**2.0**	**4.7**	

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**2.5**	**12**	DNR

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	96.8%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	102%

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MPLOTC-MW-22-062515**
Page 1 of 1 **DILUTION**

Lab Sample ID: AII2B
LIMS ID: 15-11759
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/06/15 19:45

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	**Benzene**	**0.53**	**4.0**	**4.6**	DNR
108-88-3	**Toluene**	**0.80**	**4.0**	**7.4**	
100-41-4	**Ethylbenzene**	**0.74**	**4.0**	**750**	
179601-23-1	**m,p-Xylene**	**1.0**	**8.0**	**1,400**	
95-47-6	o-Xylene	0.70	4.0	< 4.0 U	DNR
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U	DNR
91-20-3	**Naphthalene**	**2.4**	**10**	**300**	DNR
110-54-3	Hexane	1.9	4.0	< 4.0 U	DNR

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**12**	**19**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	99.3%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	99.9%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTC-MW-22-DUP-062515
SAMPLE

Lab Sample ID: AII2C
LIMS ID: 15-11760
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 18:53

Sample Amount: 1.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	Benzene	0.27	2.0	5.2	
108-88-3	Toluene	0.40	2.0	7.3	DNR
100-41-4	Ethylbenzene	0.37	2.0	810 E	DNR
179601-23-1	m,p-Xylene	0.52	4.0	1,400 E	DNR
95-47-6	o-Xylene	0.35	2.0	2.3	
106-93-4	1,2-Dibromoethane	0.74	2.0	< 2.0 U	
91-20-3	Naphthalene	1.2	5.0	320	
110-54-3	Hexane	0.95	4.0	10	

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	2.5	12	DNR

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	97.3%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	97.2%

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: MPLOTC-MW-22-DUP-062515
DILUTION

Lab Sample ID: AII2C
LIMS ID: 15-11760
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 07/06/15 20:13

Sample Amount: 0.50 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	**Benzene**	**0.53**	**4.0**	**4.2**	DNR
108-88-3	**Toluene**	**0.80**	**4.0**	**7.8**	
100-41-4	**Ethylbenzene**	**0.74**	**4.0**	**760**	
179601-23-1	**m,p-Xylene**	**1.0**	**8.0**	**1,400**	
95-47-6	o-Xylene	0.70	4.0	< 4.0 U	DNR
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U	DNR
91-20-3	**Naphthalene**	**2.4**	**10**	**320**	DNR
110-54-3	**Hexane**	**1.9**	**4.0**	**4.4**	DNR

Reported in µg/L (ppb)

86290-81-5	**Gasoline Range Hydrocarbons**	**0.03**	**12**	**19**

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: PORT-MW-B-062515**
Page 1 of 1 **SAMPLE**

Lab Sample ID: AII2D
LIMS ID: 15-11761
Matrix: Water
Data Release Authorized:
Reported: 07/08/15

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094
Date Sampled: 06/25/15
Date Received: 06/25/15

Instrument/Analyst: NT3/ML
Date Analyzed: 06/30/15 14:58

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.03	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

86290-81-5	Gasoline Range Hydrocarbons	0.03	0.25	< 0.25 U

Reported in mg/L (ppm)

Volatile Surrogate Recovery

d8-Toluene	107%
Bromofluorobenzene	98.4%
d4-1,2-Dichlorobenzene	98.5%

FORM I

QA/QC J. Lamberts 7/27/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: AII2-Golder Associates
Project: Master Park Lot C
073-93368-06-094

Matrix: Water

Date Received: 06/25/15

Data Release Authorized:
Reported: 07/01/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL	
MB-063015	Method Blank	06/30/15	1.0	Diesel Range	< 0.10 U	0.10	0.02	
15-11759		FID4A		Motor Oil Range	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	94.5%			
AII2B	MPLOTC-MW-22-062515	06/30/15	1.0	**Diesel**	**1.0**	0.10	0.02	J
15-11759		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DRO			
				o-Terphenyl	74.5%			
AII2C	MPLOTC-MW-22-DUP-062515	06/30/15	1.0	**Diesel**	**1.1**	0.10	0.02	J
15-11760		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	DRO			
				o-Terphenyl	75.4%			
AII2D	PORT-MW-B-062515	06/30/15	1.0	Diesel	< 0.10 U	0.10	0.02	
15-11761		FID4A		Motor Oil	< 0.20 U	0.20	0.04	
				HC ID	---			
				o-Terphenyl	92.9%			

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

APPENDIX D
SUMMARY DATA TABLES AND TREND GRAPHS

SUMMARY DATA TABLES

Table D-1: Summary of Groundwater Sampling Results - Well MW-06
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	**TOC Elevation (feet msl)**	**Depth to Water (feet btoc)**	**Groundwater Elevation (feet msl)**	**pH (standard units)**	**Temperature (°C)**	**Conductivity (µmhos/cm)**	**Dissolved Oxygen (mg/L)**	**Turbidity (NTU)**	**NWTPH-Gasoline (mg/L)**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**	**EDB (ethylene dibromide) (µg/L)[f]**	**N-hexane (µg/L)**	**Naphthalene (µg/L)**	**NWTPH-Diesel (mg/L)**	**NWTPH-Motor Oil (mg/L)**
19-Mar-10	369.68	60.03	309.65	5.96	13.5	409	0.87	3.75	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0096	< 1.0	< 5.0	-	-
11-Feb-14	369.68	59.03	310.65	6.13	12.1	139	0.91	16.4	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	< 0.50	< 0.10	< 0.20
28-May-14	369.68	-	-	6.14	14.3	454	1.03	3.71	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20 UJ	< 0.50	< 0.10	< 0.20
10-Sep-14	369.68	-	-	6.27	15.9	312.0	1.52	11.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
3-Dec-14	369.68	-	-	6.27	13.6	314.0	2.14	6.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
17-Jun-15	369.68	-	-	6.32	14.9	331	3.96	0.75	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f,*	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.

-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-2: Summary of Groundwater Sampling Results - Well MW-07
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	358.70	48.69	310.01	6.61	13.3	354	1.41	5.18	26	230	1,100	360	4630	0.010	160	210	-	-
13-Feb-14	358.69	47.72	310.97	6.56	14.3	131	0.35	3.87	29	25	110	180	2022	< 3.8	190	220	11 J	< 0.20
29-May-14	358.69	47.65	311.04	6.65	16.4	379	0.13	2.84	27	14	80	190	1811	< 1.5	140	210 B	11 J	< 0.20
11-Sep-14	358.69	47.95	310.74	6.73	16.5	373	0.35	2.28	36	17	81	260	2110	< 0.028	280	300 B J	11	0.41 J
4-Dec-14	358.69	47.95	310.74	6.70	15.7	333	0.20	2.95	26	21	66	200	1507	< 0.07	170	180	11 J	0.32 J
18-Jun-15	358.69	48.01	310.68	6.64	16.1	371	0.25	1.57	15 J	6.4	28 J	110 J	533 J	< 0.07	93 J	96 J	5.4	0.24 J
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.

-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-3: Summary of Groundwater Sampling Results - Well MW-09
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
19-Mar-10	362.14	52.30	309.84	6.19	14.2	294	0.13	7.18	16	170	65	400	1434	0.016	100	160	-	-
12-Feb-14	362.13	51.45	310.68	6.49	12.6	99.5	0.28	3.10	7.5	30	8.1	150	98.0	< 0.08	16	120	1.6 J	< 0.20
29-May-14	362.13	51.41	310.72	6.44	15.0	295	0.14	1.01	7.8	32	9.4	170	111.6	< 0.37	5.60	92 B	2.3 J	< 0.20
10-Sep-14	362.13	-	-	6.49	15.7	310	0.20	3.85	5.6	17	4.6	100	47.2	< 0.010*	< 0.20	74	2.8	< 0.20
3-Dec-14	362.13	51.68	310.45	6.47	13.6	307	0.18	2.37	4.1	14	2.8	76	8.8	< 0.07	< 0.20	44	1.9	< 0.20
17-Jun-15	362.13	51.67	310.46	6.48	15.1	331	0.18	0.75	1.7	7.2	1.3	40	1.6	< 0.07	< 0.20	18	1.5	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-4: Summary of Groundwater Sampling Results - Well MW-12
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
15-Mar-10	364.88	54.99	309.89	6.38	14.5	472	0.03	40.8	36	230	2,400	1,300	5140	0.16	210	520	-	-
13-Feb-14	364.83	55.02	309.81	7.76	14.1	125	10.50	3.43	8.6	79	410	79	970	< 3.8	< 10	25	1.1 J	< 0.20
29-May-14	364.83	51.58	313.25	7.87	16.7	252	11.77	5.99	0.12	2.0	4.3	1.6	4.2	< 0.07	< 0.20	< 0.50	0.34 J	< 0.20
11-Sep-14	364.83	54.87	309.96	8.04	18.1	255	11.80	38.8	0.11	2.5	2.6	1.5	5.3	< 0.010*	0.78	0.53 B J+	0.35	< 0.20
4-Dec-14	364.83	54.87	309.96	8.04	15.1	258	11.51	153	< 0.10	< 0.25	< 0.25	0.73	6.0	< 0.07	0.18 J	0.68	0.20	< 0.20
18-Jun-15	364.83	-	-	8.09	16.3	208	9.90	2.44	< 0.25	< 0.20	< 0.20	0.10 J	2.1	< 0.07	0.26	< 0.50	0.45	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-5: Summary of Groundwater Sampling Results - Well MW-13
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
19-Mar-10	365.42	55.66	309.76	6.28	12.8	271	0.16	72.1	33	14	230	890	4500	0.029	130	410	-	-
12-Feb-14	365.42	54.35	311.07	6.57	13.2	73.3	1.41	4.28	14	< 0.25	3.90	240	2070	< 0.08	< 0.20	33	1.4 J	< 0.20
29-May-14	365.42	55.62	309.80	6.84	14.7	182	10.59	4.24	0.14	< 0.25	< 0.25	0.85	18.54	< 0.07	0.11 J	< 0.50	0.32	< 0.20
10-Sep-14	365.42	54.86	310.56	7.06	14.9	137	11.06	2.41	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.010*	< 0.20	< 0.50	0.29	< 0.20
4-Dec-14	365.42	54.86	310.56	7.06	13.9	163	10.10	2.32	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	0.31	< 0.20
18-Jun-15	365.42	54.70	310.72	7.13	14.7	174	10.71	1.32	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	0.61	0.27	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-6: Summary of Groundwater Sampling Results - Well MW-17A
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	385.81	76.29	309.52	6.51	9.3	145	0.52	142.0	1.70	< 1.0	< 1.0	4	27	< 0.0095	< 1.0	63	-	-
11-Feb-14	394.00	83.80	310.20	6.36	11.3	82.5	1.06	137.0	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	0.74	< 0.10	< 0.20
29-May-14	394.00	84.00	310.00	6.22	12.2	175	2.06	39.7	< 0.10	0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	0.62 J+	< 0.10	< 0.20
10-Sep-14	394.00	84.18	309.82	6.28	12.4	162	1.42	18.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	0.64 J	< 0.10	< 0.20
5-Dec-14	394.00	84.18	309.82	6.42	11.7	167	1.09	31.8	< 0.10 UJ	0.54 J	< 0.25 UJ	< 0.25 UJ	0.63 J	< 0.07	< 0.20 UJ	2.8	< 0.10	< 0.20
17-Jun-15	394.00	84.16	309.84	6.29	12.9	158	3.13	29.6	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-7: Summary of Groundwater Sampling Results - Well MW-18
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	360.45	50.58	309.87	6.69	14.2	586	0.11	5.39	52	2,600	6,000	1,700	6690	2.5	350	420	-	-
12-Feb-14	360.45	49.01	311.44	7.62	13.8	175	8.11	2.89	1.0	27	13	17	91.3	< 0.08	1.1	4.0	0.77 J	<0.20
29-May-14	360.45	49.75	310.70	7.98	15.2	369	10.60	7.95	0.14	6.6	1.5	4.7	9.2	< 0.07	0.64	0.84 J+	0.33 J	<0.20
11-Sep-14	360.45	49.83	310.62	8.23	15.2	498	11.23	13.1	< 0.10	0.72	0.27	0.40	0.72	< 0.010*	< 0.20	< 0.50	0.14	< 0.20
4-Dec-14	360.45	49.83	310.62	7.84	14.4	470	10.78	81.6	< 0.10	0.69	< 0.25	0.63	0.93	< 0.07	0.10 J	< 0.50	0.24	< 0.20
18-Jun-15	360.45	49.51	310.94	8.05	15.2	515	10.89	49.6	< 0.25	0.67	0.54	0.24	1.1	< 0.07	< 0.20	< 0.50	0.38	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-8: Summary of Groundwater Sampling Results - Well MW-19
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	356.61	46.60	310.01	7.04	12.5	275	0.07	84.0	1.3	8.90	1.8	43	6.0	< 0.0096	2.8	< 5.0	-	-
11-Feb-14	356.61	45.46	311.15	6.98	12.7	105	0.15	3.20	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	4.3	< 0.50	< 0.10	< 0.20
29-May-14	356.61	45.74	310.87	6.96	13.7	290	0.04	0.42	< 0.10	< 0.25	0.40	< 0.25	0.58	< 0.07	0.3	< 0.50	< 0.10	< 0.20
10-Sep-14	356.61	45.73	310.88	6.93	14.5	379	0.16	0.30	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
3-Dec-14	356.61	45.73	310.88	6.82	13.3	380	0.20	0.86	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
17-Jun-15	356.61	45.94	310.67	6.75	14.3	400	0.26	0.86	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.

-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-9: Summary of Groundwater Sampling Results - Well MW-20
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	430.98	121.79	309.19	6.63	10.8	359	4.82	4.37	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0095	< 1.0	< 5.0	-	-
20-Mar-14	416.61	106.13	310.48	6.74	11.4	377	7.82	3.32	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50 UJ	< 0.10	< 0.20
29-May-14	416.61	106.66	309.95	6.73	12.3	257	6.37	0.82	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
10-Sep-14	416.61	106.53	310.08	6.83	13.2	355	7.55	0.69	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
3-Dec-14	416.61	106.53	310.08	6.79	12.4	355	7.67	1.30	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
17-Jun-15	416.61	106.68	309.93	6.77	13.3	350	7.41	1.06	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.

-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-10: Summary of Groundwater Sampling Results - Well MW-21
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	390.79	81.26	309.53	5.97	11.5	257	3.21	5.13	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0096	< 1.0	< 5.0	-	-
11-Feb-14	412.85	102.34	310.51	6.09	11.9	110	6.31	11.2	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	< 0.50	< 0.10	< 0.20
29-May-14	412.85	102.61	310.24	6.15	12.5	277	6.28	1.71	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
10-Sep-14	412.85	102.66	310.19	6.15	13.5	283	6.25	1.95	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
3-Dec-14	412.85	102.66	310.19	6.20	12.3	304	5.54	13.1	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
17-Jun-15	412.85	102.81	310.04	6.12	13.5	326	6.12	1.98	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

Table D-11: Summary of Groundwater Sampling Results - Well MW-22
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
16-Mar-10	393.31	83.63	309.68	6.65	12.5	586	0.25	82.0	15	23	74	1400	2420	< 0.0095	15	380	-	-
20-Mar-14	393.31	82.93	310.38	6.68	12.2	381	0.87	64.8	17	5.7	12	990	1503	< 0.07	7.8	400 J	1.2 J	< 0.20
28-May-14	393.31	82.72	310.59	6.73	13.2	383	0.30	2.26	18	3.9	9.7	940	1900	< 0.07	8.6	420 B	1.7 J	< 0.20
12-Sep-14	393.31	82.98	310.33	6.81	13.7	423	0.29	1.03	16	4.8	9.3	690	1103	< 1.5	9.8	460 B J	1.1 J	< 0.20
5-Dec-14	393.31	82.98	310.33	6.81	12.8	378	0.26	3.71	16	8.7	11	740	1103	< 1.5	7.2	380	0.86 J	< 0.20
25-Jun-15	393.31	82.95	310.36	6.82	13.6	354	0.52	3.34	19	5.9	7.4	750	1402	< 0.74	4.7	310	1.0 J	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

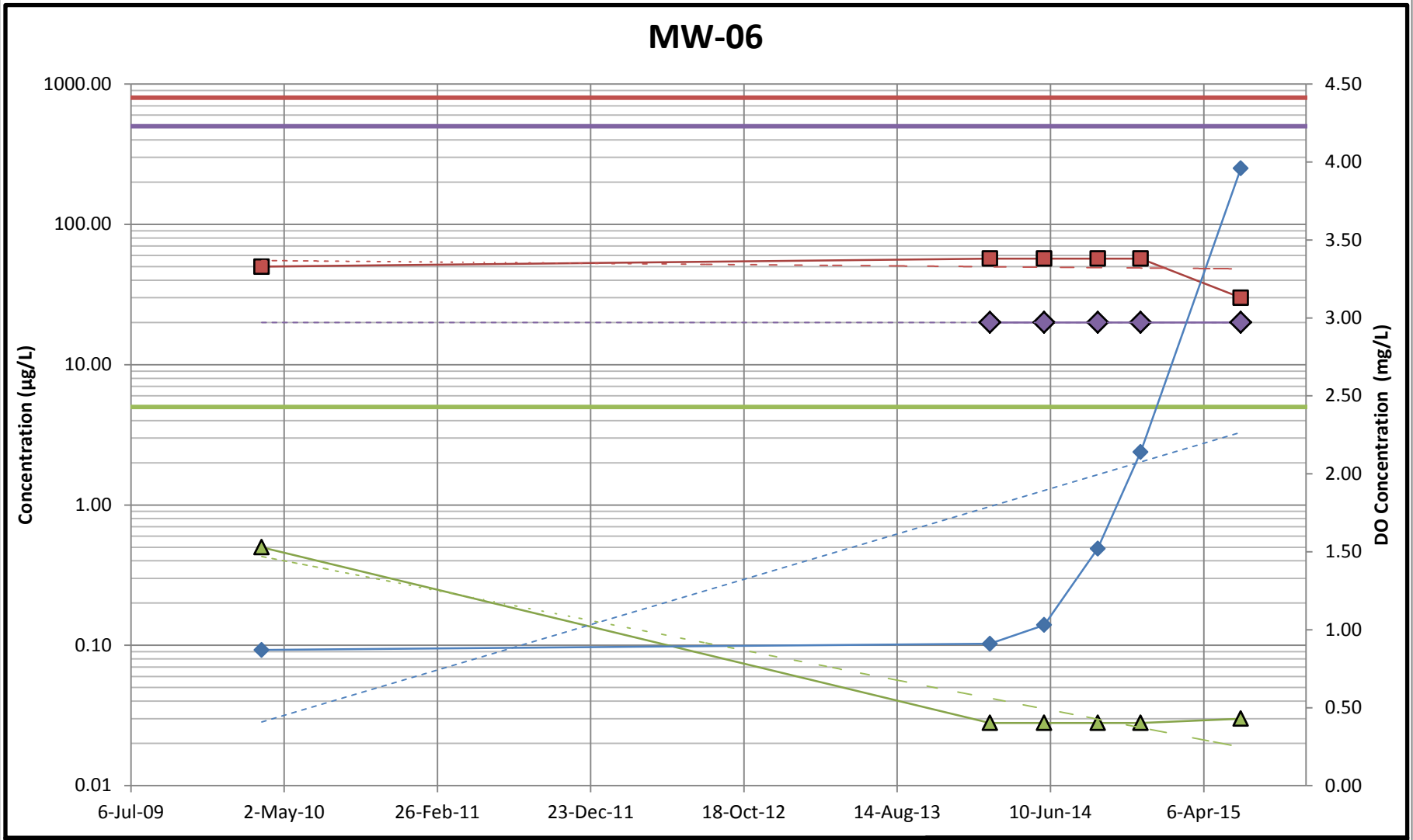
Table D-12: Summary of Groundwater Sampling Results - Well PORT-MW-B
Sea-Tac Development Site, Seatac WA

	Field Parameters								Analytical Data									
Date Sampled[c]	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L)[f]	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
3-Aug-11	400.00	-	-	-	-	-	-	-	0.20	1.3	< 1.0	13	3.4	< 0.01	< 1.0	13	0.28	< 0.25
20-Mar-14	400.00	89.70	310.30	6.55	12.3	267	6.16	--[j]	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50 UJ	< 0.10	< 0.20
28-May-14	400.00	89.50	310.50	6.50	14.2	317	4.63	98.3	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
12-Sep-14	400.00	89.71	310.29	6.56	14.0	266	3.56	6.18	< 0.10	< 0.25	< 0.25	1.1	1.9	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
5-Dec-14	400.00	89.71	310.29	6.57	12.6	265	4.07	84.1	0.11	< 0.25	< 0.25	1.1	1.0	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
25-Jun-15	400.00	89.67	310.33	6.51	14.3	290	3.80	4.18	< 0.25	< 0.20	< 0.20	< 0.20	< 0.40	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8[d]/1.0[e]	5[g]	1000[g]	700[g]	1000[h]	0.01[h]	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5[i]	640	800	1600	0.022	480	160	NSA	NSA

Notes:

feet bgs	Feet below ground surface
feet bmp	Feet below measuring point
feet msl	Feet above mean sea level
a	Well not surveyed, elevation estimated.
b	IAS/SVE in operation. Suction may be affecting WLs.
c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.
d	When benzene is present.
e	When benzene is not present.
f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.
g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs
h	Value is more protective than Federal MCLs.
i	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.
j	Turbidity out of range. Well was purged using a bailer.
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.
-	Not measured or not available
	Result exceeds Clean-up Level (CUL)
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NTU	Nephelometric Turbidity Unit
µmhos/cm	Micromhos per centimeter
<	Analyte not detected above the reporting limit shown
MTCA	Model Toxics Control Act
MCL	Maximum Containment Level
NSA	No Standard Available
TOC	Top of casing inside PVC well
°C	Degrees Celsius
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

SUMMARY TREND GRAPHS



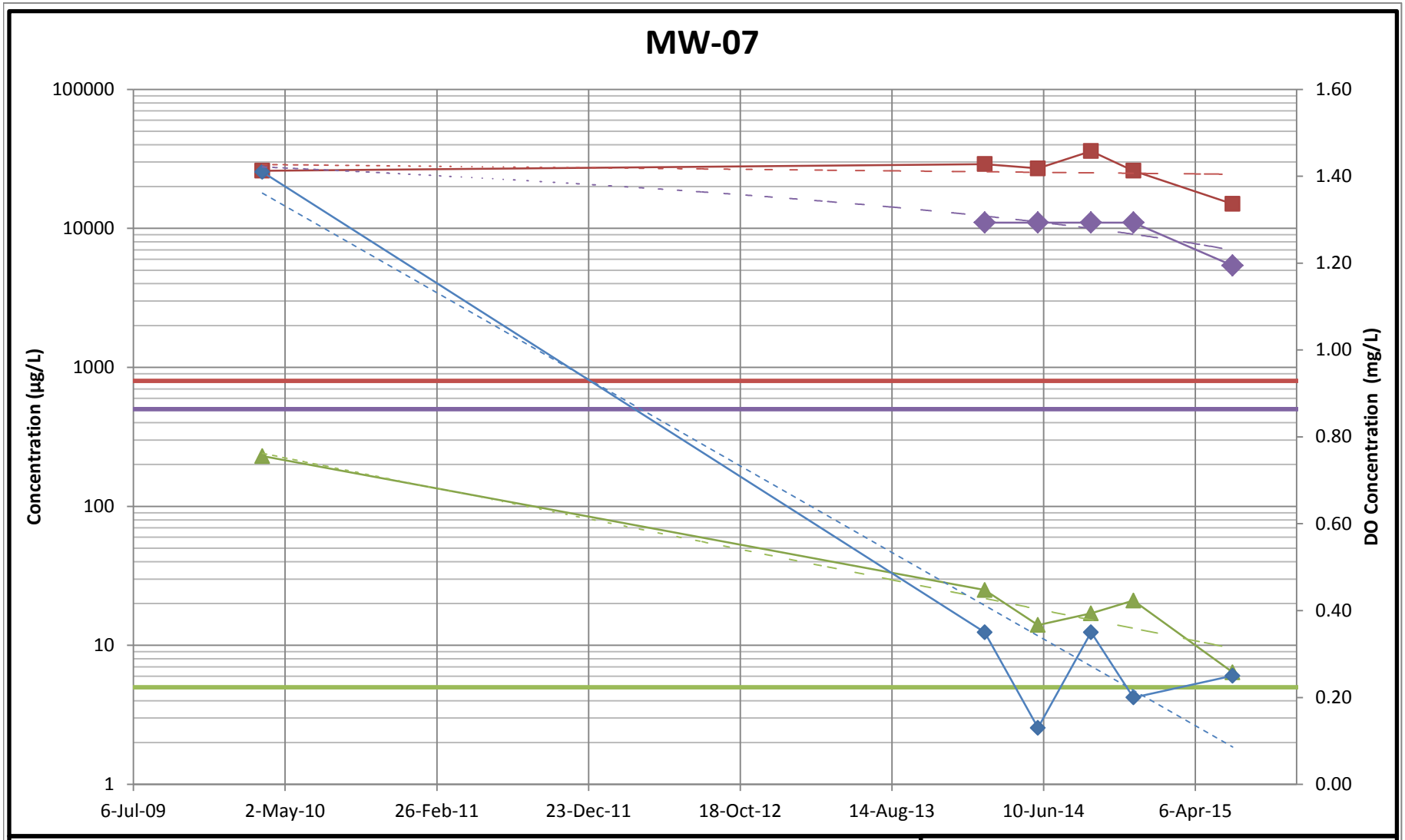
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Non-Detects
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-1
Gasoline, Benzene, & Diesel Concentrations in MW-06
Seatac Development Site Masterpark Lot C

Golder Associates



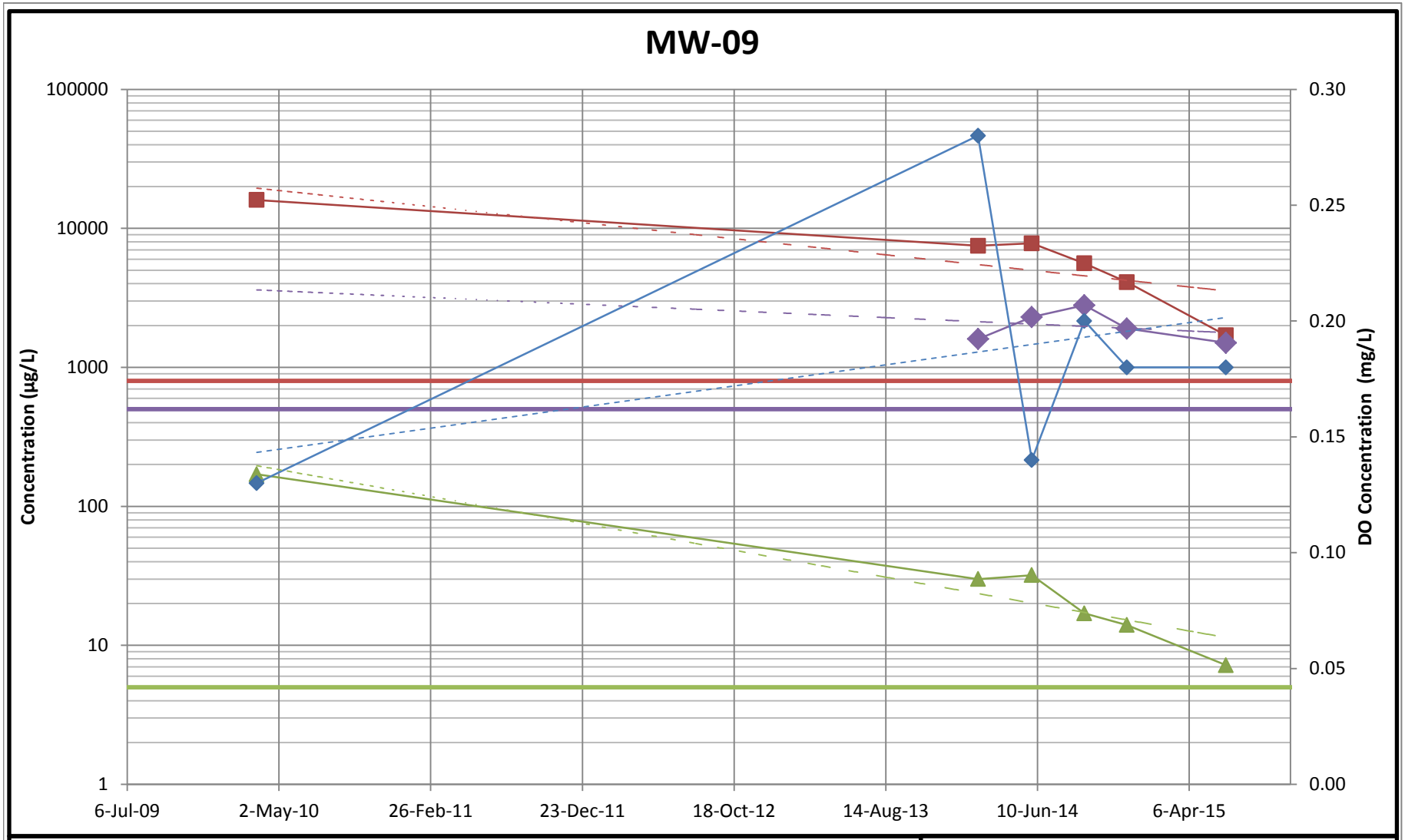
Legend

- Gasoline Concentrations
- Benzene Concentrations
- Diesel Concentrations
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline
- Gasoline Cleanup Level (800 ug/L)
- Benzene Cleanup Level (5 ug/L)
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-2
Gasoline, Benzene, & Diesel Concentrations in MW-07
Seatac Development Site Masterpark Lot C

Golder Associates



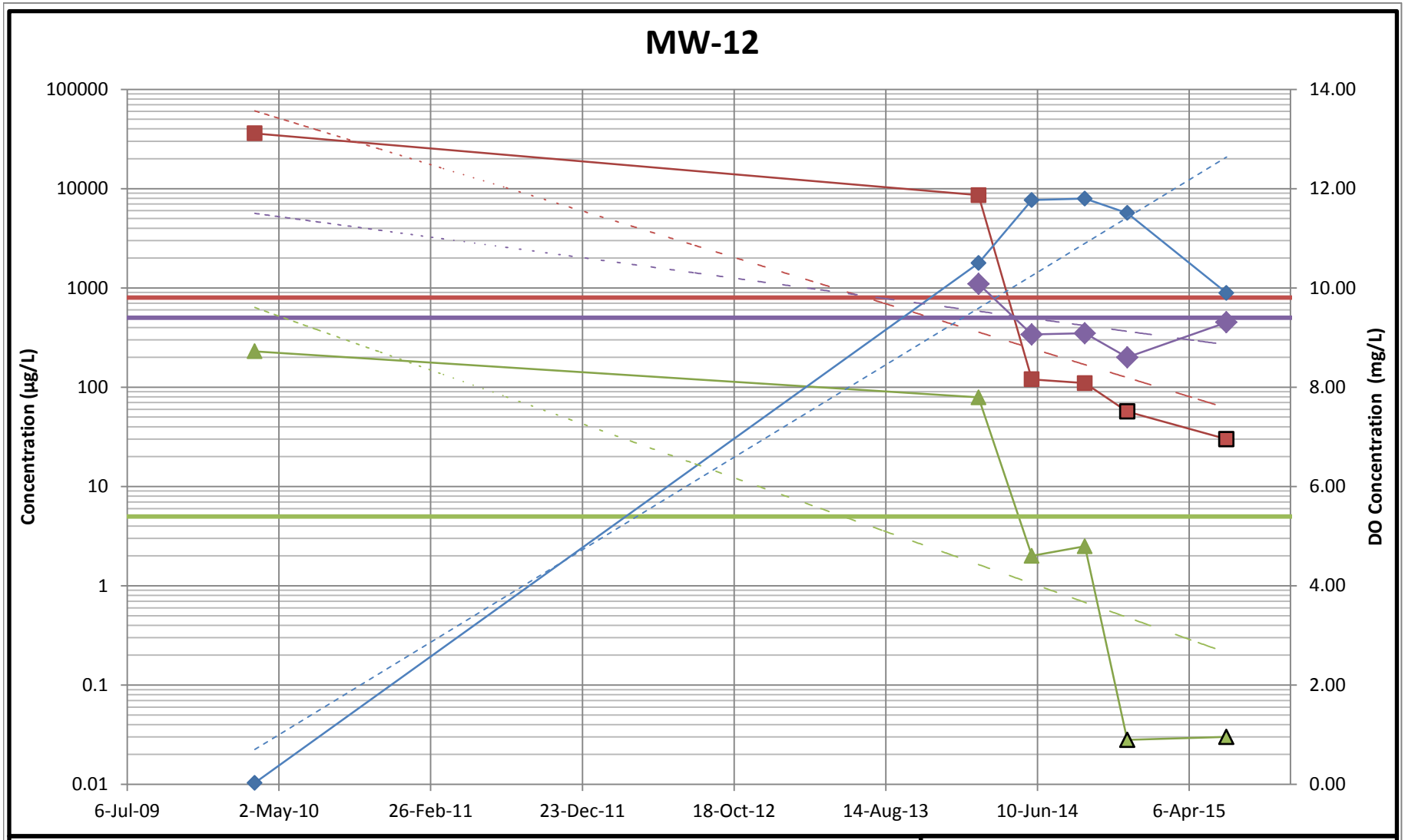
Legend

- Gasoline Concentrations
- Benzene Concentrations
- Diesel Concentrations
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline
- Gasoline Cleanup Level (800 ug/L)
- Benzene Cleanup Level (5 ug/L)
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-3
Gasoline, Benzene, & Diesel Concentrations in MW-09
Seatac Development Site Masterpark Lot C

Golder Associates



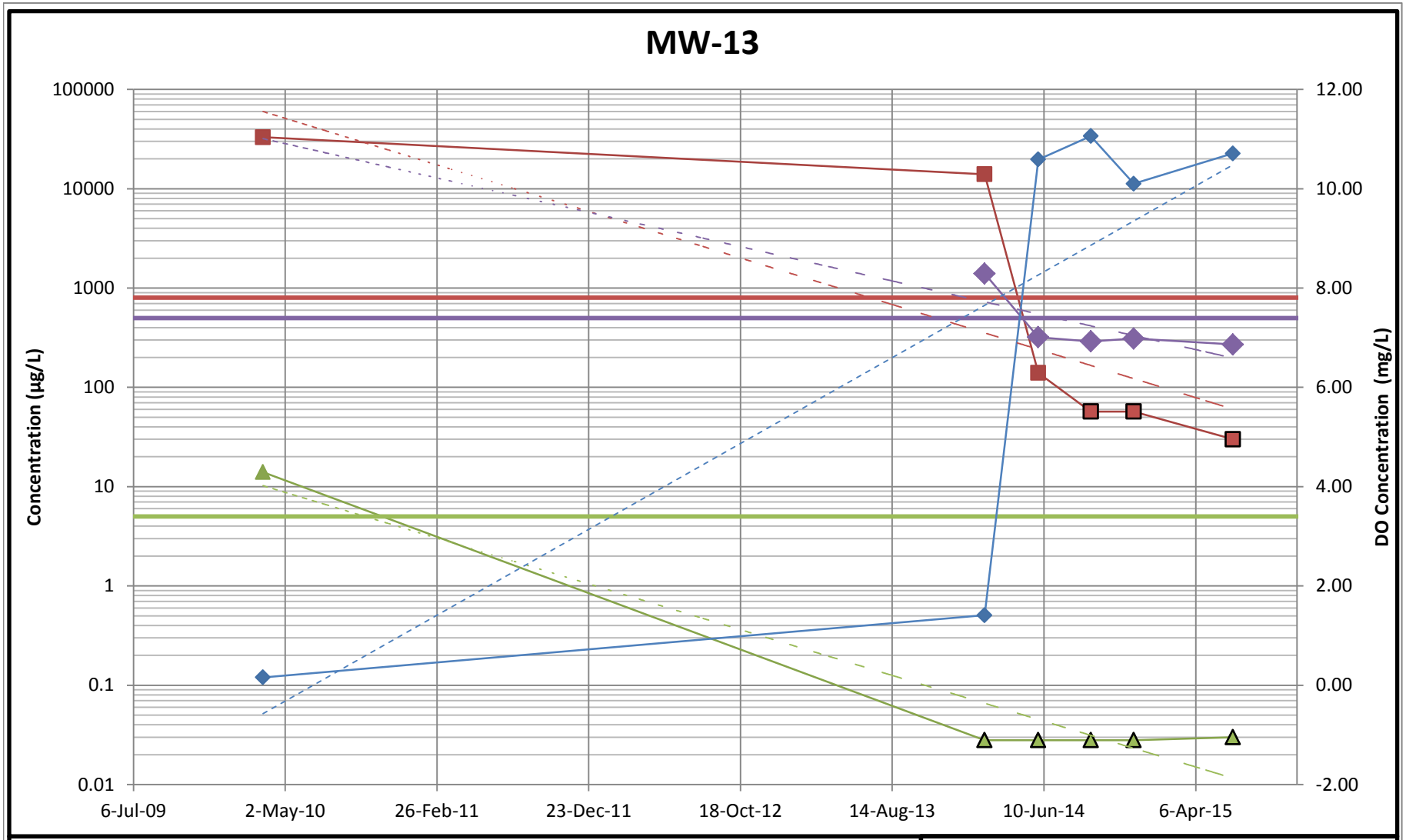
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-4
Gasoline, Benzene, and Diesel Concentrations in MW-12
Seatac Development Site Masterpark Lot C

Golder Associates



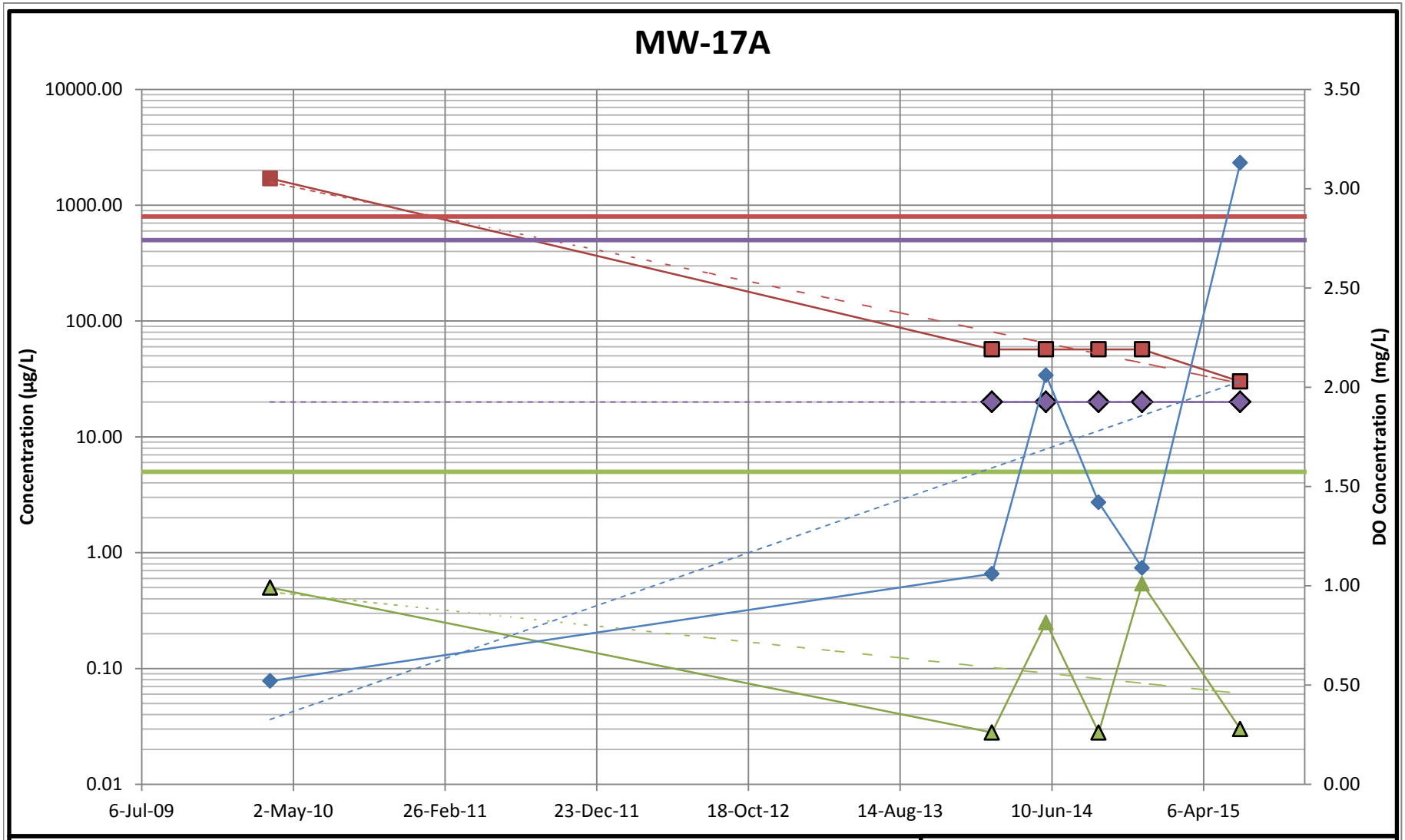
Legend

- Gasoline Concentrations
- Gasoline Non-Detects
- Gasoline Cleanup Level (800 ug/L)
- Benzene Concentrations
- Benzene Non-Detects
- Benzene Cleanup Level (5 ug/L)
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Dissolved Oxygen Concentrations
- Gasoline Trendline
- Benzene Trendline
- Diesel Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-5
Gasoline, Benzene, & Diesel Concentrations in MW-13
Seatac Development Site Masterpark Lot C

Golder Associates



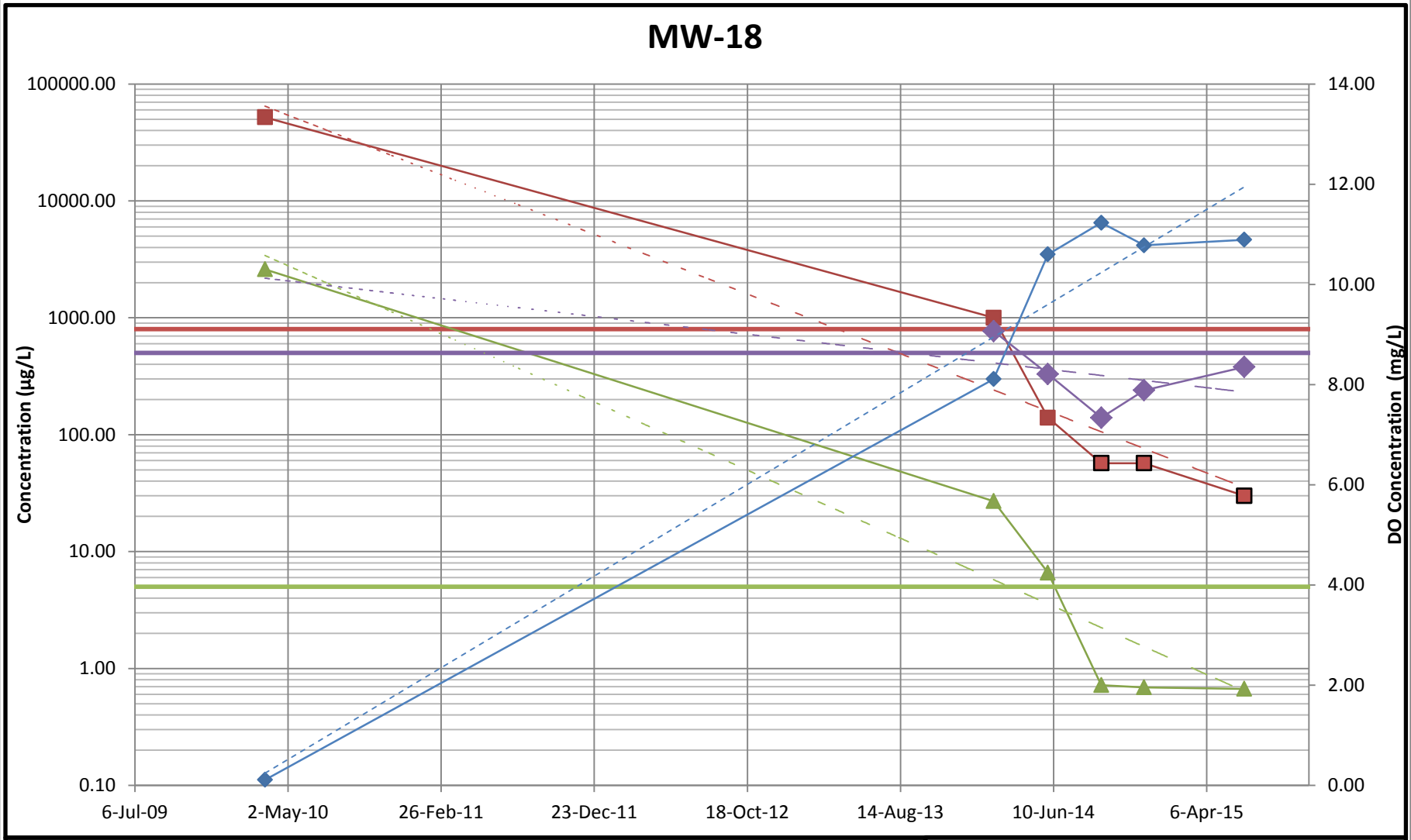
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Non-Detects
- Dissolved Oxygen Concentrations
- Benzene Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-6
Gasoline, Benzene, & Diesel Concentrations in MW-17A
Seatac Development Site Masterpark Lot C

Golder Associates



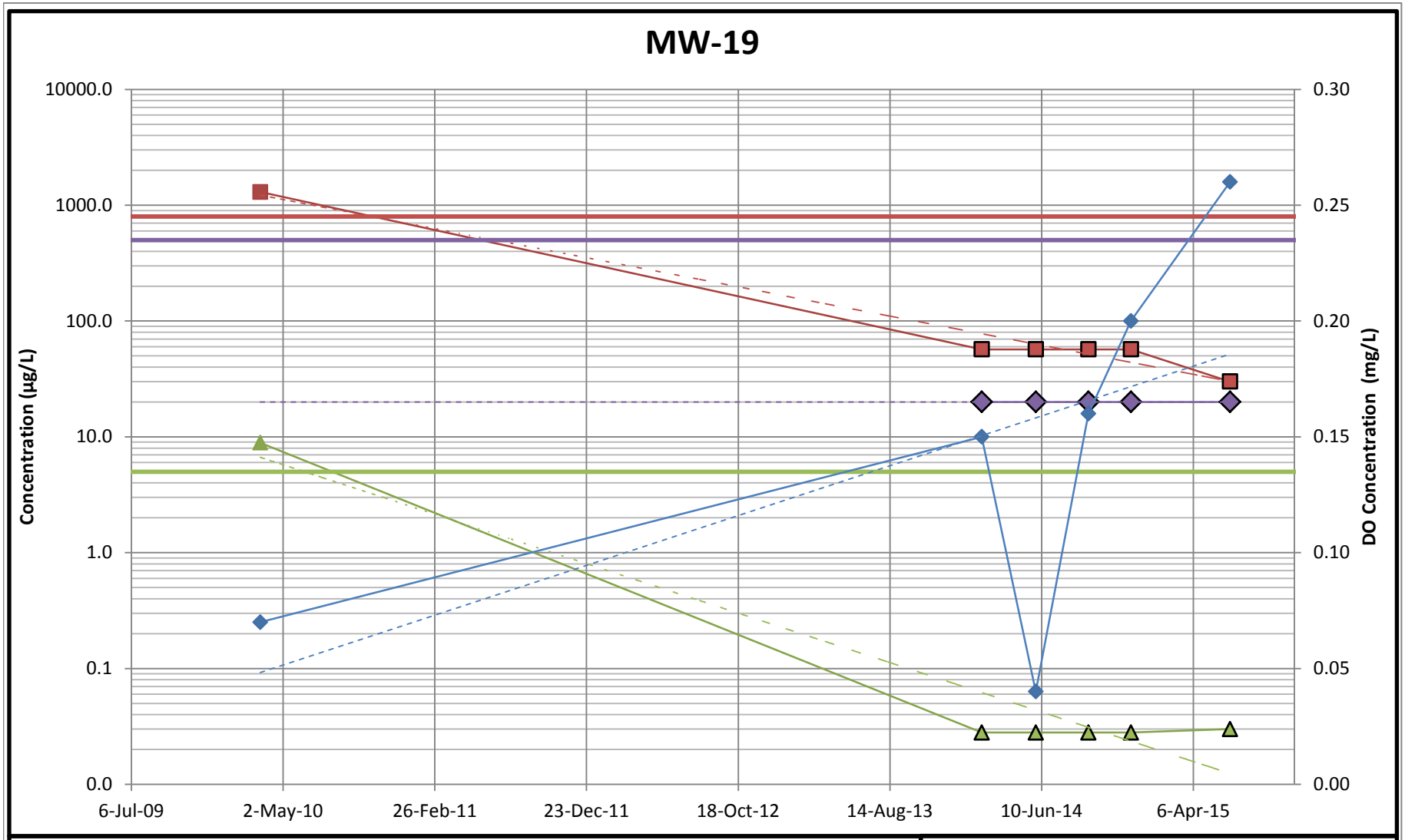
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Cleanup Level (5 ug/L)
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Diesel Concentrations
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-7
Gasoline, Benzene, & Diesel Concentrations in MW-18
Seatac Development Site Masterpark Lot C

Golder Associates



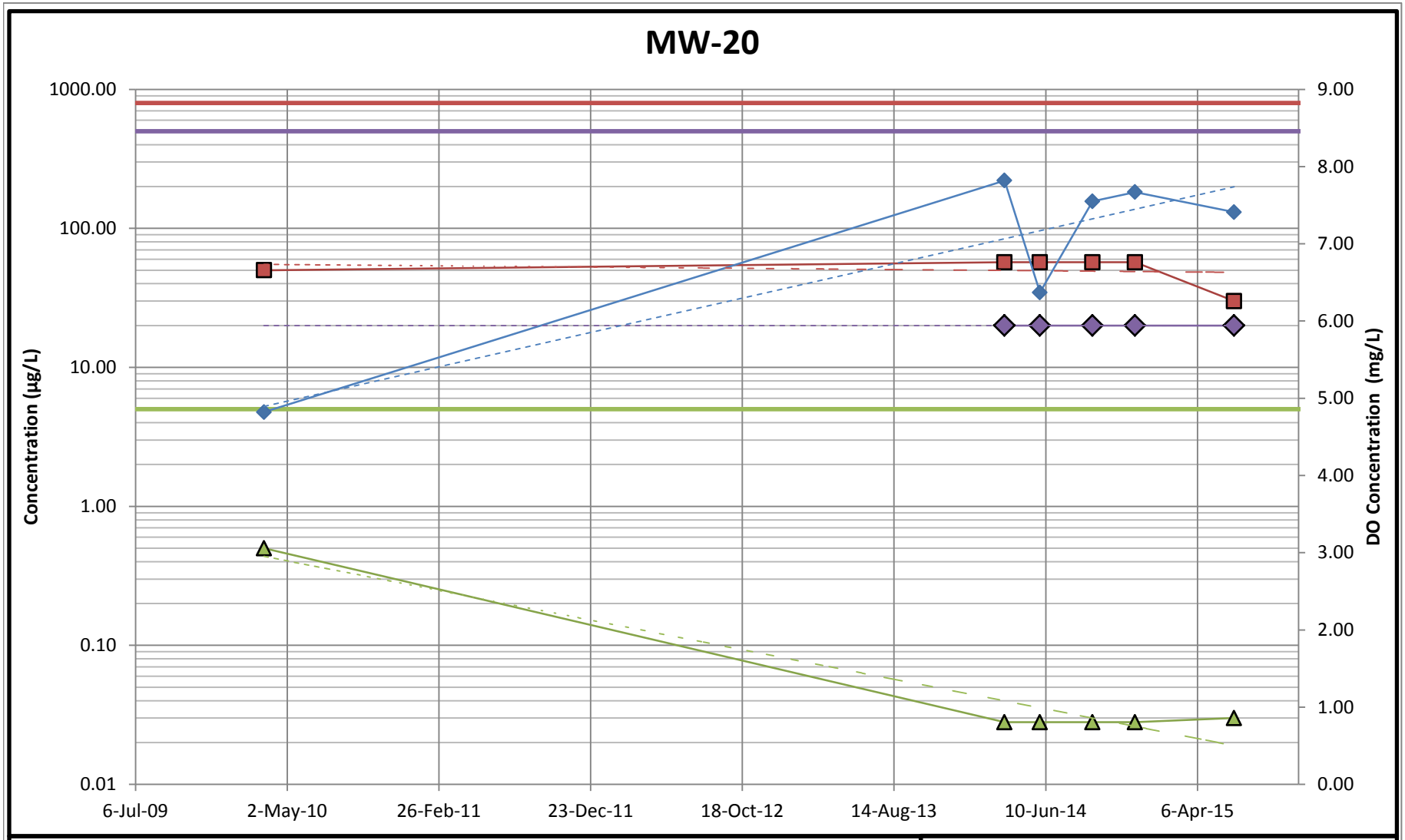
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Non-Detects
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-8
Gasoline, Benzene, & Diesel Concentrations in MW-19
Seatac Development Site Masterpark Lot C

Golder Associates



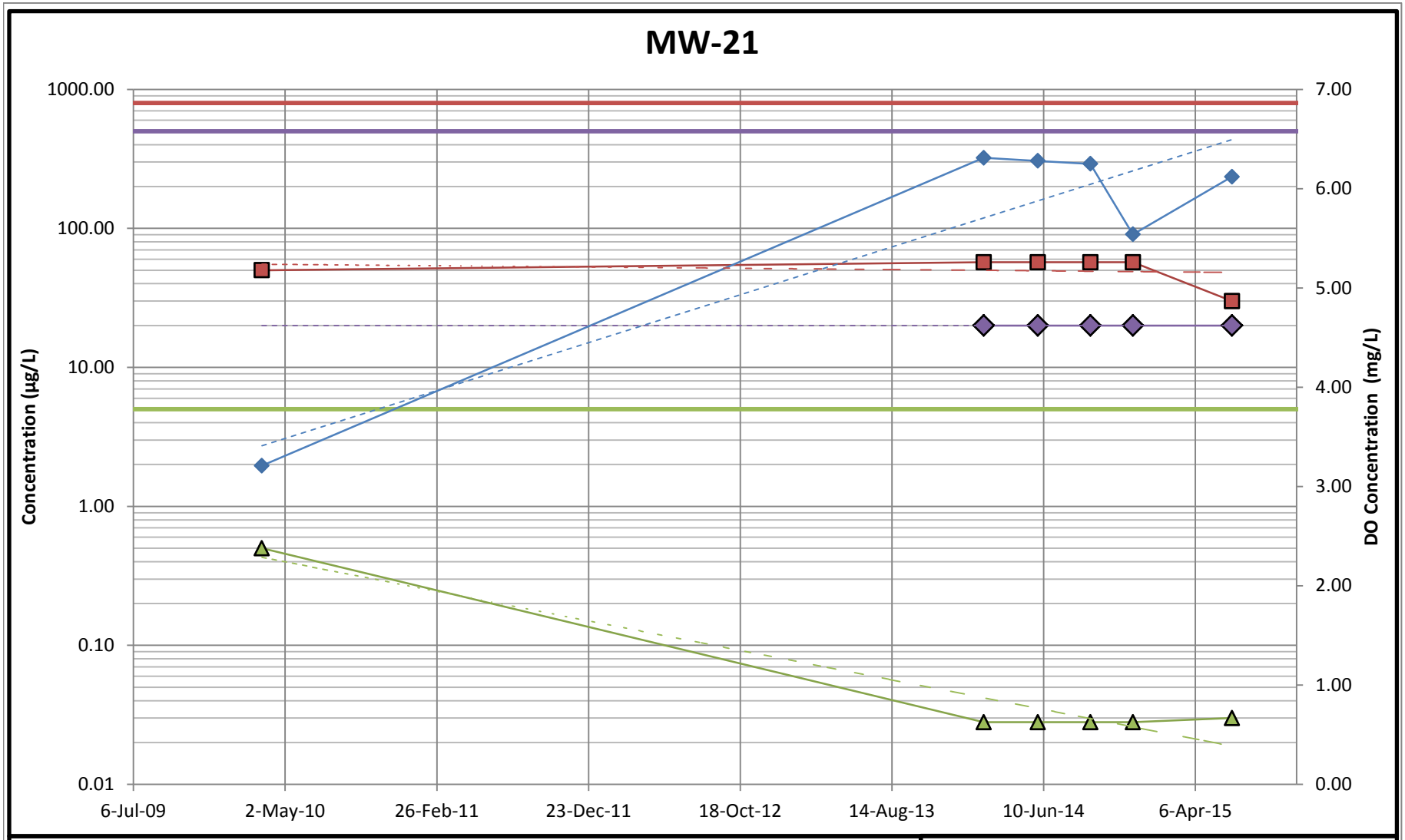
Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Non-Detects
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-9
Gasoline, Benzene, & Diesel Concentrations in MW-20
Seatac Development Site Masterpark Lot C

Golder Associates



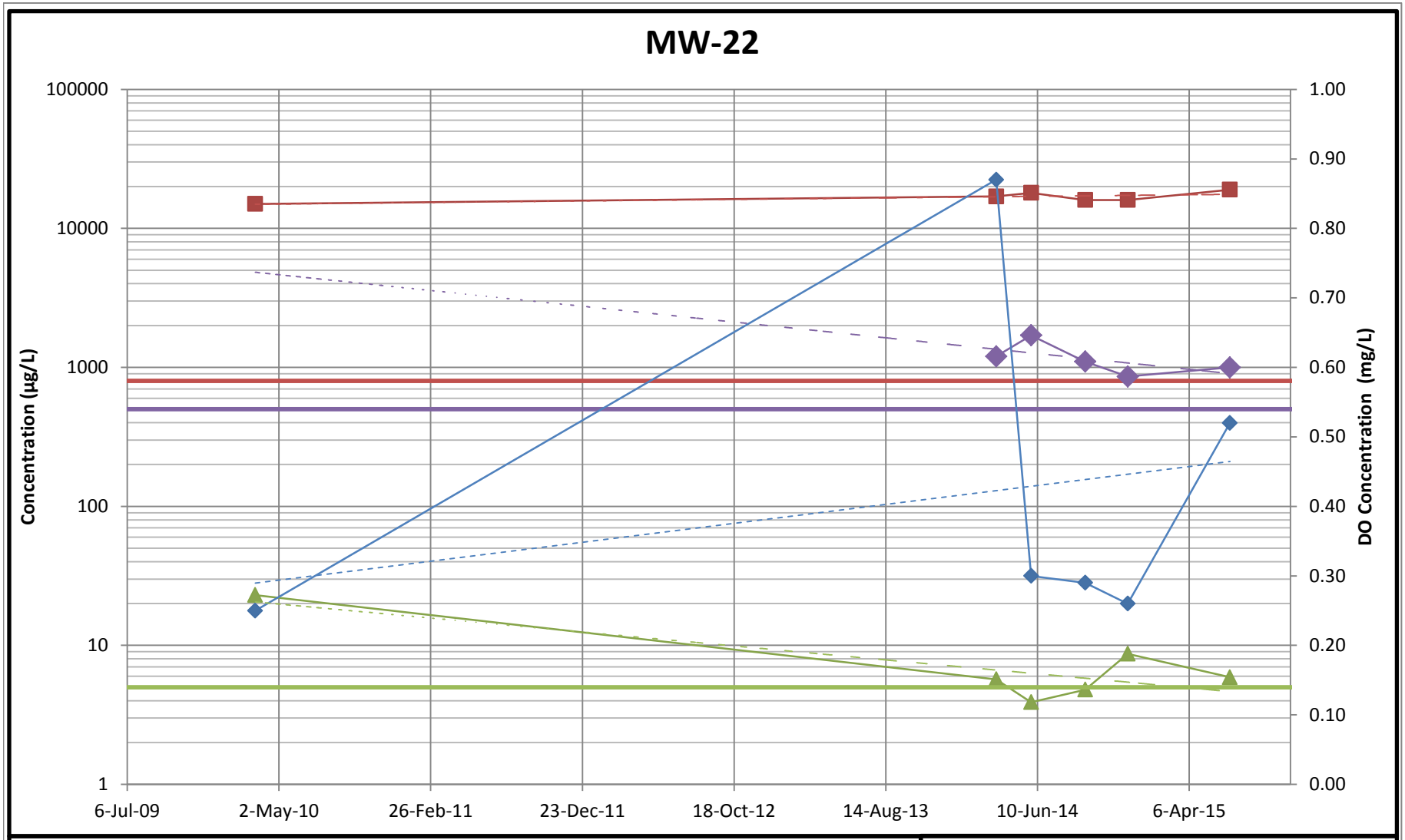
Legend

- Gasoline Concentrations
- Gasoline Non-Detects
- Gasoline Cleanup Level (800 ug/L)
- Benzene Concentrations
- Benzene Non-Detects
- Benzene Cleanup Level (5 ug/L)
- Diesel Concentrations
- Diesel Non-Detects
- Diesel Cleanup Level (500 ug/L)
- Dissolved Oxygen Concentrations
- Gasoline Trendline
- Benzene Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-10
Gasoline, Benzene, & Diesel Concentrations in MW-21
Seatac Development Site Masterpark Lot C

Golder Associates



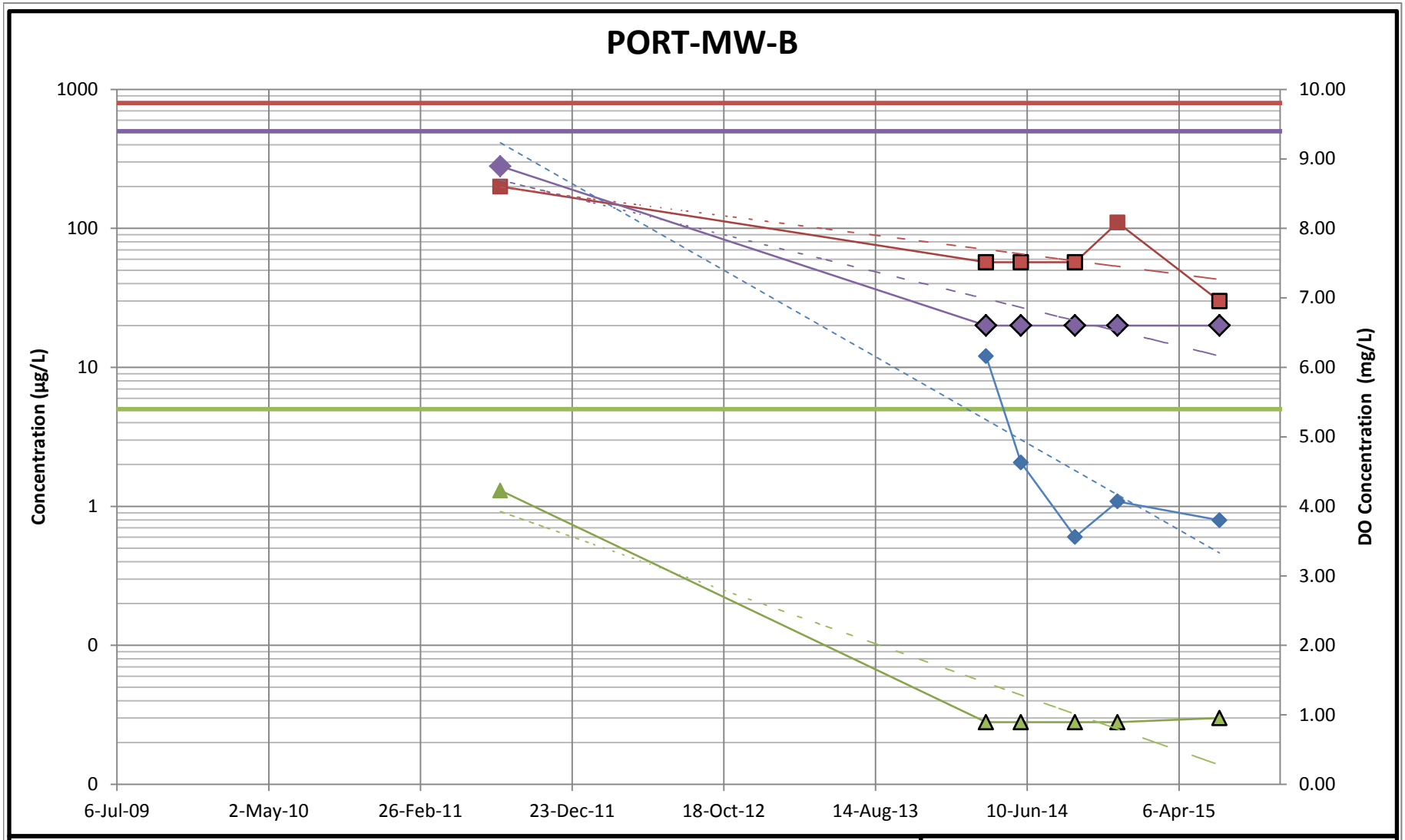
Legend

- Gasoline Concentrations
- Benzene Concentrations
- Diesel Concentrations
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline
- Gasoline Cleanup Level (800 ug/L)
- Benzene Cleanup Level (5 ug/L)
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-11
Gasoline, Benzene, & Diesel Concentrations in MW-22
Seatac Development Site Masterpark Lot C

Golder Associates



Legend

- Gasoline Concentrations
- Gasoline Cleanup Level (800 ug/L)
- Benzene Non-Detects
- Diesel Concentrations
- Diesel Cleanup Level (500 ug/L)
- Gasoline Trendline
- Diesel Trendline
- Gasoline Non-Detects
- Benzene Concentrations
- Benzene Cleanup Level (5 ug/L)
- Diesel Non-Detects
- Dissolved Oxygen Concentrations
- Benzene Trendline
- DO Trendline

Note: Cleanup levels are based on MTCA Method A. Non-detects are plotted at MDL or 1/2 LOQ value.

FIGURE D-12
Gasoline, Benzene, & Diesel Concentrations in PORT-MW-B
Seatac Development Site Masterpark Lot C

Golder Associates