2013 ANNUAL GROUNDWATER MONITORING REPC
FLINT HILLS RESOURCES FUEL TERMIN
FAIRBANKS INTERNATIONAL AIRPC

March 2

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31-1-11661

2013 ANNUAL GROUNDWATER MONITORING REPORT
FLINT HILLS RESOURCES ALASKA FUEL TERMINAL
FAIRBANKS INTERNATIONAL AIRPORT

March 2015

Prepared by:

SHANNON & WILSON, INC.
2355 Hill Road
Fairbanks, Alaska 99709-5326

Kristen Freiburger 2015.03.20 09:32:55 -08'00'

Project Manager: Kristen Freiburger
Environmental Chemist

Digitally signed by Jon Lindstrom
DN: cn=Jon Lindstrom, o=Shannon & Wilson, Inc., ou=Fairbanks, email=jel@shanwil.com, c=US
Date: 2015.03.20 09:46:06 -08'00'

Reviewed by: Jon Lindstrom, Ph.D.
Senior Associate

Shannon & Wilson Project Number: 31-1-11661-003

Prepared for:

Flint Hills Resources Alaska, LLC
1100 H&H Lane
North Pole, Alaska 99705

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2013 Annual Groundwater Monitoring Report
Flint Hills Resources Alaska Fuel Terminal
Fairbanks International Airport

This report describes the 2013 field work conducted at the Flint Hills Resources Alaska (FHRA) Fairbanks International Airport (FIA) fuel terminal. Our scope of services for this effort included collecting groundwater samples from each monitoring well associated with the FHRA FIA fuel terminal (Figure 1) and preparing this summary report.

1.0 FIELD ACTIVITIES

Shannon & Wilson personnel collected groundwater samples from monitoring wells on and surrounding the fuel terminal on September 17-20, 2013 (Figure 1).

1.1 Monitoring-Well Observations

Our observations on monitoring well conditions made in September 2013 are summarized in Appendix A.

1.2 Monitoring-Well Sampling

Shannon & Wilson sampled the monitoring wells September 17-20, 2013, using our standard procedures, generally as described in the Alaska Department of Environmental Conservation (ADEC) *Draft* Field Sampling Guidance. We checked for the presence of light, non-aqueous phase liquid (LNAPL) in wells MW-1R, MW-18R, and MW-24 (Figure 1) using our oil-water interface probe and noted the presence of LNAPL in all three wells. LNAPL thicknesses were 0.06 foot in MW-1R and 0.38 foot in MW-24. Due to the presence of LNAPL on the water table, we did not collect groundwater samples from MW-1R and MW-24. Shannon & Wilson personnel developed well MW-18R before attempting to sample it. There was a visible sheen on the development water's surface, so the well was not sampled.

Prior to purging the wells, we measured the depth to groundwater to a precision of 0.01 foot from the top of the well casings in each well to allow us to determine the groundwater gradient at the site. We sampled the monitoring wells using a battery-powered, variable-speed submersible pump decontaminated before collecting each sample. Prior to collecting samples, we purged the wells by pumping until water temperature, conductivity, pH, and oxidation-reduction potential stabilized over three consecutive readings on a field meter. We then reduced the pump-flow rate to allow collection of water samples into the appropriate laboratory-prepared containers for analysis.

1.3 Laboratory Analysis

We submitted samples from each well for analysis of diesel range organics (DRO) by Alaska Method AK102, gasoline range organics (GRO) by Alaska Method AK101, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260B. Samples from wells MW-6R, MW-10, MW-17A, and MW-17B were analyzed for the full set of volatile organic compounds (VOCs) using EPA Method 8260B in addition to BTEX.

We submitted the water samples, quality assurance (QA) duplicates, an equipment blank, and trip blanks to SGS North America, Inc. (SGS) for analysis. We collected duplicate VOC samples from well MW-10 (samples *MW-10* and *MW-100*) and duplicate BTEX samples from well MW-3 (samples *MW-3* and *MW-30*). We collected an equipment blank sample after we sampled MW-2 (sample *EB-2*).

1.4 Investigation-Derived Wastes

Well-development water from MW-18R and purge water from each well was discharged into the on-site oil-water separator, which is routed via the sewer line to the Golden Heart Utilities (GHU) wastewater treatment plant (WWTP). Purge water from the wells at the site has historically been discharged into the sewer in compliance with Section 82-206 (Prohibited Discharge Standards) of the City of Fairbanks Code of Ordinances, which controls the types of wastewater that may be treated by the GHU WWTP.

2.0 RESULTS

We estimated the groundwater gradient from our depth-to-water measurements, and summarize the results below. We also summarize analytical laboratory test results below. The SGS laboratory data report for the groundwater samples from the September 2013 sampling event is provided in Appendix B, along with the associated ADEC Data Review Checklist. Our data-quality review of the laboratory results is provided in the following section of this report.

2.1 Groundwater Elevations and Gradient

Table 1 presents the depth-to-water measurements from the top of the well casings, measured LNAPL thickness, and calculated groundwater surface elevations.

Based on the 2013 depth-to-groundwater measurements taken at the time of fall sampling, the groundwater-surface elevation within our sampling area ranged from 416.85 feet to 418.27 feet above Mean Sea Level. Using the elevation data and EPA's online calculator (http://www.epa.gov/athens/learn2model/part-two/onsite/gradient4plus-ns.html), the

groundwater flow direction was generally to the northwest at the time of sampling, with a slope of about 1 foot per 1,000 feet.

2.2 Cleanup Levels

To evaluate groundwater analytical data, we compared the results to ADEC groundwater-cleanup levels presented in 18 AAC 75.345 Table C. We present the groundwater-cleanup levels in Table 2 (DRO, GRO, and BTEX), Table 3 (VOCs), and Table 4 (historical DRO, GRO, and BTEX concentrations) for comparison.

2.3 Groundwater-Sample Results

Table 2 and Figure 2 summarize the DRO, GRO, and BTEX results for each monitoring well sampled in 2013. Except for DRO in well MW-10, all target analyte concentrations were less than their ADEC groundwater-cleanup levels.

Table 3 summarizes VOCs detected (and limits of detection [LODs]) in samples collected from wells MW-6R, MW-10, MW-17A, and MW-17B. None of the detected analyte concentrations exceeded their ADEC groundwater-cleanup levels. Because LODs for 1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane, and 1,2-dibromoethane exceeded their respective ADEC groundwater-cleanup levels, we were unable to determine whether these analytes are present in the groundwater at concentrations between groundwater-cleanup levels and their LODs. A summary of historical DRO, GRO, and BTEX sample results from the facility's monitoring-well network is presented in Table 4.

3.0 QUALITY ASSURANCE AND QUALITY CONTROL

QA/Quality Control (QC) procedures assist in producing data of acceptable quality and reliability. We reviewed the analytical results for laboratory QC samples, and also conducted our own QA assessment for this project. Our QA-review procedures allowed us to document the accuracy and precision of the analytical data, and check that the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards.

For this report, we reviewed the groundwater-sample data report for SGS work order (WO) 1138498. The laboratory report contains a case narrative and forms documenting sample-receipt conditions. Details regarding the results of our QA review are presented below.

3.1 Sample Handling

We hand-delivered the groundwater samples to the SGS sample-receiving facility in Fairbanks on September 23, 2013. SGS then shipped them to their analytical laboratory in Anchorage,

where they arrived in good condition, following proper chain-of-custody (COC) procedures. We reviewed the COC records and laboratory sample-receipt forms and found the samples were kept properly chilled during shipping from Fairbanks to Anchorage. The laboratory noted samples *MW-17A* and *MW-30* had one broken vial each for GRO analysis, but they still had two vials to use and data quality and usability were unaffected. There were no other sample-handling anomalies identified that would adversely affect data quality for this project.

3.2 Analytical Sensitivity

LODs for the project samples were less than the ADEC groundwater-cleanup levels for DRO, GRO, and BTEX analyses. LODs for VOCs 1,2-dibromoethane and 1,2,3-trichloropropane exceeded ADEC Table C groundwater-cleanup levels for each sample; likewise, the LOD for VOC 1,2-dibromo-3-chloropropane exceeded its EPA Maximum Contaminant Level (MCL) for drinking water (no ADEC groundwater-cleanup level has been established for this analyte). We cannot determine whether these VOC analytes may have been present in the samples at concentrations between regulatory limits and analytical reporting limits.

Laboratory method blanks were analyzed in association with samples collected for this project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. No analytes were detected in the method blanks.

No analytes were detected in the equipment blank (sample *EB-2*) collected during this sampling event.

We submitted trip blanks with water samples for analysis of GRO and VOCs (including BTEX) to determine if cross-contamination among samples or contamination from an outside source may have occurred during shipment or storage. No analytes were detected in the trip blanks.

3.3 Accuracy

The laboratory assessed the accuracy of their analytical procedure by analyzing laboratory control samples (LCSs) and LCS duplicates (LCSDs). These QC samples allow the laboratory to evaluate their ability to recover analytes added to clean aqueous matrices. LCS and LCSD recoveries were within laboratory-control limits for DRO, GRO, and VOC (including BTEX) analyses.

Accuracy was also evaluated for BTEX analysis by assessing the recovery of matrix spike (MS) and MS duplicate (MSD) samples. These QC samples allow the laboratory to evaluate their ability to recover analytes added to matrices similar to the project samples. MS/MSD recoveries were within limits for the BTEX analyses.

Accuracy was also evaluated for each sample by assessing the recovery of analyte surrogates added to individual project samples. There were no QC-sample or surrogate-recovery failures associated with the project samples. The sample results for the September 2013 sampling event are considered accurate, based on LCS/LCSD, MS/MSD and surrogate recoveries.

3.4 Precision

We collected field-duplicate samples at a frequency of 10 percent of the total samples to evaluate the precision of analytical measurements and reproducibility of our sampling technique. To evaluate the precision of the data, we calculated the relative percent difference (RPD; difference between the sample and its duplicate divided by the mean of the two). RPD is evaluated only if the results of the analyses for both the sample and its duplicate are above the limit of quantitation (LOQ).

The field-duplicate samples were *MW-3* and *MW-30* (DRO, GRO, and BTEX) and *MW-10* and *MW-100* (DRO, GRO, and VOCs). RPDs were within QC goals (less than 30 percent) for each analyte, where calculable.

Laboratory analytical precision can also be evaluated by RPD calculations. The LCS/LCSD and MS/MSD RPDs provide information regarding the reproducibility of laboratory procedures, and are therefore a measure of analytical precision. The RPDs associated with the GRO, DRO, BTEX, and VOC analyses were within laboratory-control limits.

The sample results for the September 2013 sampling event are considered precise based on LCS/LCSD and/or field-duplicate RPD calculations.

3.5 Data Quality Summary

By working in general accordance with our scope of services, we consider the samples we collected to represent site conditions at the locations and times they were obtained. Based on our QA review, no samples were rejected as unusable due to QC failures. Our QA review indicates the analytical results are sensitive, accurate, precise, and complete, with exceptions noted above.

In general, the quality of the analytical data for this project does not appear to have been compromised by analytical irregularities, and the results are valid for interpreting groundwater quality at the FHRA FIA fuel terminal site at the time of sample collection. The laboratory report and ADEC data-review checklist for project samples collected in September 2013 are provided in Appendix B.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our 2013 groundwater-sampling activities, we present the following conclusions. We offer recommendations for additional sampling and other site activities following our conclusions.

4.1 Conclusions

- LNAPL was measured in MW-1R and MW-24 and petroleum sheen was noted in MW-18R during the 2013 sampling event. These observations are consistent with historical site conditions.
- BTEX was not detected above ADEC cleanup levels in monitoring wells where samples were collected, with the exception of MW-6R.
- In April 2006 approximately 475 tons of contaminated soil was excavated and removed from an on-site area east of MW-16. Since 2009-2013 samples collected from MW-16 suggest water quality is improving in that area. Concentrations of analytes in samples from MW-15, MW-16, and MW-25 did not exceed ADEC groundwater-cleanup levels and have decreasing trends (Table 4).
- Samples collected in 2013 from off-site monitoring wells did not contain detectable BTEX compounds. These results and the overall trend in the off-site wells have generally been below ADEC groundwater-cleanup standards as far back as 2007. Concentrations of VOCs in MW-6R and MW-10 do not exceed groundwater-cleanup levels. Additionally, the absence of VOCs above LOQs in 2013 samples from wells MW-17A and MW-17B (Figure 1) indicates the historical impact of the former dry well at the facility was limited in extent.

4.2 Recommendations

- In 2008, the ADEC approved annual sampling at the site beginning in 2009. We recommend continued annual sampling efforts at the site, occurring in the late summer or early autumn to be consistent with past sampling efforts. Sampling in 2014 should be similar to the 2013 sampling effort, and analyses should include DRO, GRO, and BTEX. Select wells (i.e., MW-6R, MW-10, MW-17A, and MW-17B) should be sampled for VOC analyses to continue monitoring for possible contamination from the site's former injection well until it is formally closed.
- We suggest checking wells MW-1R, MW-18R, and MW-24 during the 2014 groundwater-sampling event for LNAPL. If LNAPL is absent, groundwater samples should be collected for GRO, DRO, and BTEX analysis, and the results compared to historical concentrations.

5.0 LIMITATIONS

The data presented in this report are based on the sampling and analysis we performed; they should not be construed as a guarantee of the water quality at the site. Our sampling was intended to detect the presence or absence of selected contaminants at the sampled locations. It is possible our subsurface tests do not represent the highest levels of contamination. In addition, conclusions cannot be drawn on the presence or absence of contaminants for which laboratory analyses were not performed. As a result, the sampling and analysis performed can only provide you with our judgment as to the environmental characteristics of the site, and in no way guarantees an agency or its staff will reach the same conclusions.

Changes due to natural forces or human activity can occur on the site. The data presented in this report should be considered representative only of the time the samples were collected. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

This report was prepared for the exclusive use of our client. All documents prepared by Shannon & Wilson are instruments of service with respect to the project for the sole use of our client. Only our client shall have the right to rely upon such documents. Such documents are not intended or represented to be suitable for reuse by our client or others after the passage of time, on extensions of the project, or on any other project. Any such reuse without written verification or adaptation by Shannon & Wilson, as appropriate for the specific purpose intended, shall be at the user's sole risk.

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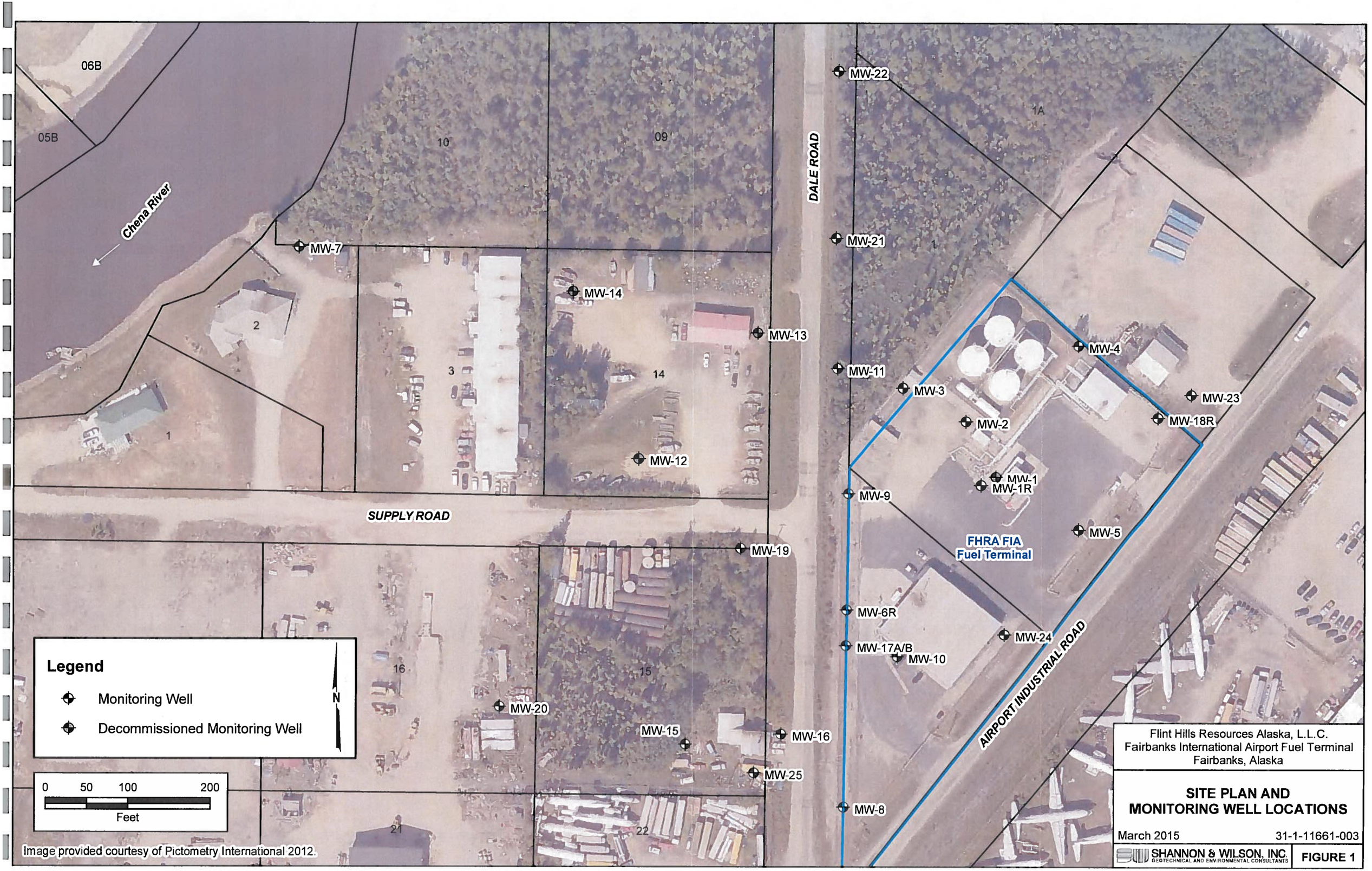

Flint Hills Resources Alaska, L.L.C.
Fairbanks International Airport Fuel Terminal
Fairbanks, Alaska

SITE PLAN AND MONITORING WELL LOCATIONS

March 2015 31-1-11661-003

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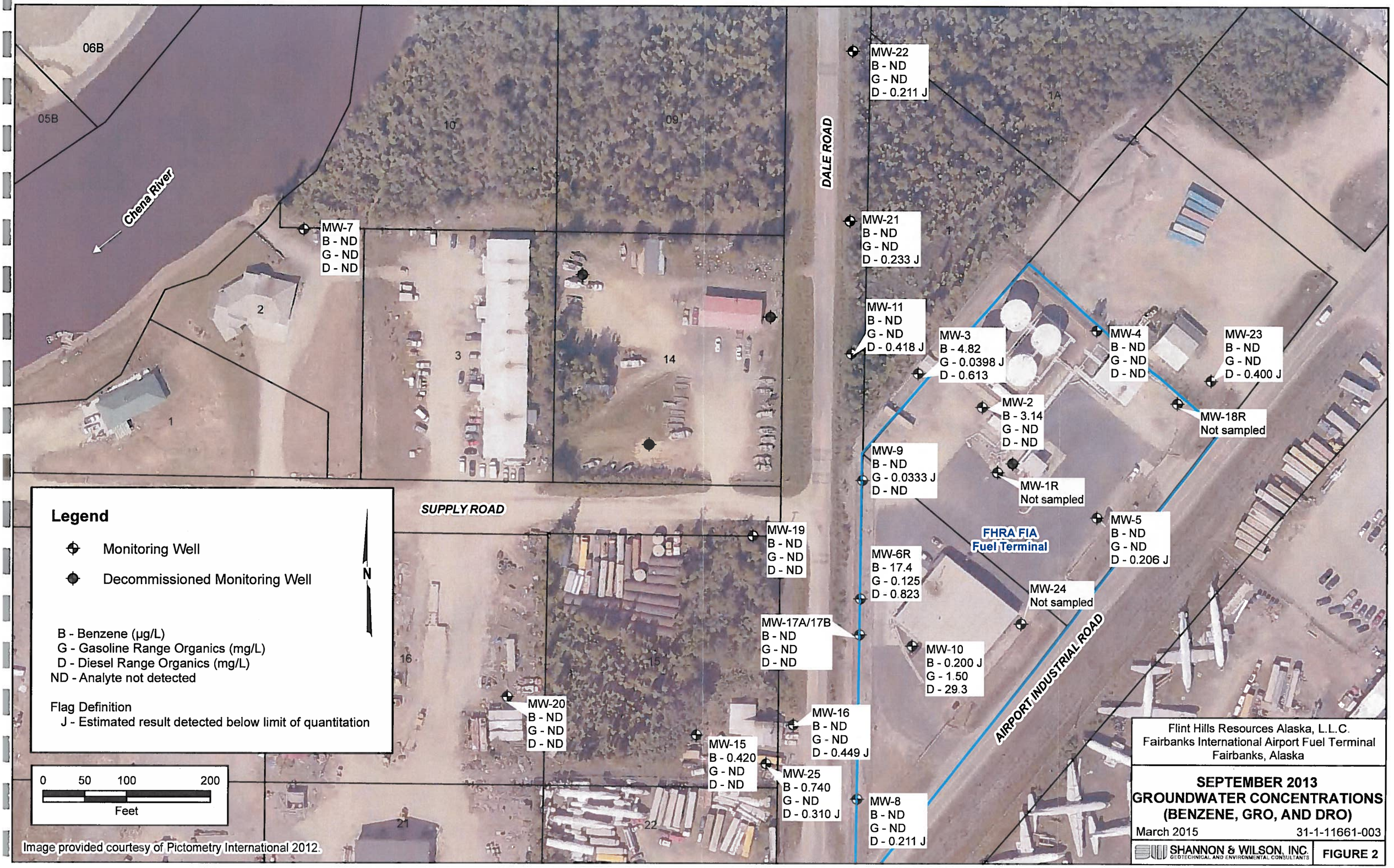
FIGURE 1



Flint Hills Resources Alaska, L.L.C.
Fairbanks International Airport Fuel Terminal
Fairbanks, Alaska

SEPTEMBER 2013
GROUNDWATER CONCENTRATIONS
(BENZENE, GRO, AND DRO)

March 2015 31-1-11661-003

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIGURE 2

Table 1
September 2013 Groundwater Elevation Measurements
Flint Hills Resources Alaska FIA Fuel Terminal

Monitoring Well	Date Checked	Depth to LNAPL (ft below TOC)	LNAPL Thickness (feet)	Depth to Water Below TOC (feet)	Measured Depth of Well Below TOC (feet)	TOC Elevation (feet above MSL)	Ground Surface Elevation (feet above MSL)	Groundwater Elevation (feet above MSL)
MW-1R	9/20/2013	10.55	0.06	10.61	23.79	428.37	428.8	417.76
MW-2	9/19/2013	—	—	15.77	32.98	433.68	430.0	417.91
MW-3	9/19/2013	—	—	16.54	30.71	434.36	430.8	417.82
MW-4	9/19/2013	—	—	15.45	24.98	433.72	430.4	418.27
MW-5	9/19/2013	—	—	8.52	16.53	426.45	426.8	417.93
MW-6R	9/18/2013	—	—	8.33	20.95	426.34	426.7	418.01
MW-7	9/17/2013	—	—	11.47	27.15	428.32	425.2	416.85
MW-8	9/18/2013	—	—	11.55	20.12	429.53	426.1	417.98
MW-9	9/19/2013	—	—	12.07	19.91	429.92	426.8	417.85
MW-10	9/19/2013	—	—	9.54	15.87	427.44	427.8	417.90
MW-11	9/18/2013	—	—	8.95	18.35	426.82	424.1	417.87
MW-15	9/17/2013	—	—	9.42	16.89	427.24	424.6	417.82
MW-16	9/17/2013	—	—	6.20	14.51	424.19	424.6	417.99
MW-17A*	9/18/2013	—	—	7.93	30.18	425.98	426.3	418.05
MW-17B*	9/18/2013	—	—	7.93	30.18	425.98	426.3	418.05
MW-18R	9/20/2013	11.13	sheen	11.13	20.07	429.18	429.4	418.05
MW-19	9/17/2013	—	—	7.68	18.05	425.66	422.5	417.98
MW-20	9/17/2013	—	—	9.80	16.72	427.47	424.9	417.67
MW-21	9/18/2013	—	—	9.66	18.04	427.34	424.4	417.68
MW-22	9/18/2013	—	—	7.82	16.63	425.62	423.7	417.80
MW-23	9/20/2013	—	—	8.97	15.27	426.99	427.5	418.02
MW-24	9/19/2013	8.39	0.38	8.77	13.82	426.40	426.9	417.63
MW-25	9/17/2013	—	—	6.65	13.98	424.75	425.2	418.10

Notes:
* The casing for monitoring well MW-17A/B contains two screened intervals.
LNAPL Light non-aqueous phase liquid
TOC Top of casing
MSL Mean sea level
ft feet
— Not checked

Table 2
Summary of 2013 Monitoring-Well Results (DRO, GRO, and BTEX)
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Well Screen (ft. bgs)	Sample ID	GRO (mg/L)	DRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			2.2	1.5	5	1,000	700	10,000 (total)	
MW-1R	3.9 - 23.3	No sample collected; monitoring well contained product layer of 0.06 feet thick.							
MW-2	8.4 - 27.8	*MW-2*	<0.0620	<0.360	3.14	<0.620	<0.620	<1.24	<0.620
Equipment Blank		*EB-2*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-3	8.9 - 28.2	*MW-3*	0.0398 J	0.613	4.82	<0.620	<0.620	<1.24	<0.620
MW-3	8.9 - 28.2	*MW-30*†	0.0389 J	0.590 J	4.6	<0.620	<0.620	<1.24	<0.620
MW-4	8.7 - 18.1	*MW-4*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-5	12.3 - 21.7	*MW-5*	<0.0620	0.206 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-6R	5.0 - 19.8	*MW-6R*	0.125	0.823	**17.4**	<0.620	0.310 J	1.84 J	1.81
MW-7	5.1 - 24.1	*MW-7*	<0.0620	<0.372	<0.240	<0.620	<0.620	<1.24	<0.620
MW-8	7 - 17	*MW-8*	<0.0620	0.211 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-9	7 - 17	*MW-9*	0.0333 J	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-10	6.3 - 15.9	*MW-10*	1.50	**29.3**	0.200 J	0.430 J	10.3	96.9	197
MW-10	6.3 - 15.9	*MW-100*†	1.42	**25.4**	0.170 J	0.450 J	9.65	79.1	160
MW-11	6.0 - 16.0	*MW-11*	<0.0620	0.418 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-15	5.0 - 14.5	*MW-15*	<0.0620	<0.376	0.420	<0.620	<0.620	<1.24	<0.620
MW-16	5.0 - 14.5	*MW-16*	<0.0620	0.449 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-17A	5 - 15	*MW-17A*	<0.0620	<0.360	<0.240	0.310J	<0.620	<1.24	<0.620
MW-17B	25 - 30	*MW-17B*	<0.0620	<0.372	<0.240	<0.620	<0.620	<1.24	<0.620
MW-18R	4.0 - 19.0	No sample collected; sheen present on groundwater.							
MW-19	6.8 - 15.9	*MW-19*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-20	5 - 14.9	*MW-20*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-21	5 - 14.5	*MW-21*	<0.0620	0.233 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-22	4.5 - 14.5	*MW-22*	<0.0620	0.211 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-23	4.5 - 14.5	*MW-23*	<0.0620	0.400 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-24	5 - 14	No sample collected; monitoring well contained product layer 0.38 feet thick.							
MW-25	4.5 - 14.5	*MW-25*	<0.0620	0.310J	0.740	<0.620	<0.620	<1.24	<0.620

Notes: BTEX results for samples *MW-6R*, *MW-10*, *MW-100*, *MW-17A*, and *MW-17B* from VOC analysis by EPA 8260B.
< Analyte not reported above specified limit of detection (LOD).
ft. bgs feet below ground surface
mg/L milligrams per liter
µg/L micrograms per liter
† Sample is a duplicate of preceding sample.
J Estimated result, detected below the limit of quantitation (LOQ).
Bold Result detected above ADEC cleanup level

Table 3
Summary of 2013 Monitoring-Well VOC Results (µg/L)
Flint Hills Resources Alaska FIA Fuel Terminal

Analyte	ADEC Groundwater-Cleanup Level	Monitoring Well/Sample ID				
		MW-6R/ *MW-6R*	MW-10/ *MW-10*	MW-10/ *MW-100*	MW-17A/ *MW-17A*	MW-17B/ *MW-17B*
1,1,1-Trichloroethane	200	<0.620	35.8	30.8	<0.620	<0.620
1,1-Dichloroethane	7,300	<0.620	12.0	10.5	<0.620	0.310 J
1,2,3-Trichloropropane	0.12	**<0.620**	**<0.620**	**<0.620**	**<0.620**	**<0.620**
1,2,4-Trimethylbenzene	1,800	2.48	180	157	0.730 J	<0.620
1,2-Dibromo-3-chloropropane	0.2 †	**<1.24**	**<1.24**	**<1.24**	**<1.24**	**<1.24**
1,2-Dibromoethane	0.05	**<0.620**	**<0.620**	**<0.620**	**<0.620**	**<0.620**
1,3,5-Trimethylbenzene	1,800	1.83	90.7	76.3	<0.620	<0.620
4-Isopropyltoluene	—	2.36	9.87	9.70	<0.620	<0.620
Carbon disulfide	3,700	<1.24	2.25	2.20	<1.24	<1.24
Chloromethane	66	<0.620	0.580 J	<0.620	<0.620	0.470 J
Isopropylbenzene (Cumene)	3,700	0.380 J	6.83	6.78	<0.620	<0.620
Naphthalene	730	0.760 J	83.3	74.4	<1.24	<1.24
n-Propylbenzene	370	<0.620	13.7	13.6	<0.620	<0.620
sec-Butylbenzene	370	<0.620	7.46	7.85	<0.620	<0.620
tert-Butylbenzene	370	<0.620	1.69	1.68	<0.620	<0.620
Trichlorofluoromethane	11,000	<0.620	4.10	3.63	<0.620	<0.620

Notes:
Samples were collected on 9/18 - 9/19 and analyzed using EPA Method 8260B.
Only detected VOC analytes, or instances where the LOD exceeds cleanup level, are shown.
Refer to laboratory report for complete list of analytes.

µg/L micrograms per liter

Sample *MW-100* is a duplicate of sample *MW-10*.

< Analyte not reported above specified limit of detection (LOD).

† Analyte does not have an ADEC groundwater-cleanup level. EPA Maximum Contaminant Level (MCL) for drinking water is shown.

— Analyte does not have an ADEC groundwater-cleanup level or EPA MCL.

bold LOD exceeds ADEC groundwater-cleanup level (or MCL).

J Estimated result, detected below the limit of quantitation (LOQ).

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-1	10/2/1991	*B-1/S-1*	—	—	**2500**	**2100**	470	1,600	
MW-1	2/27/1992	Not sampled; monitoring well contained product on water table.							
MW-1	7/22/1993	Not sampled; monitoring well contained 2.41 feet of product on water table.							
MW-1	9/30/1993	Not sampled; monitoring well contained 2.27 feet of product on water table.							
MW-1	12/29/1993	Not sampled; monitoring well contained 0.17 foot of product on water table.							
MW-1	12/29/1993	*3143-1229-101*	—	—	**66**	190	30	190	
MW-1	3/31/1994	Not sampled; monitoring well contained product on water table.							
MW-1	11/21/2000	(IT data)	**285**	**28.2**	**76.4**	768	67.6	1,576	
MW-1	4/20/2001	(IT data)	**76.5**	**9.50**	**165**	708	74.9	702	892
MW-1	11/19/2001	*1069-111901-MW1*	**3.28**	**1.30**	**190**	25.2	46.0	98.1	30.0
MW-1	11/19/2001	*1069-111901-MW11*	**3.67**	**1.78**	**197**	28.1	45.3	102	33.3
MW-1	5/21/2002	*1069-052102-008*	**15.0**	**1.70**	**35.0**	53.0	<1	27	32
MW-1	8/1/2002	Not sampled; monitoring well contained 0.65 feet of product on water table.							
MW-1	10/14/2002	Not sampled; monitoring well contained 0.70 feet of product on water table.							
MW-1	4/3/2003	*1169-040303-010*	—	—	**31.0**	10.0	3.2	26	14
MW-1	4/3/2003	*1169-040303-011*	—	—	**31.0**	10.0	3.2	26	14
MW-1	7/24/2003	Not sampled; well frozen.							
MW-1	11/6/2003	Not sampled; monitoring well contained 0.35 foot of product on water table.							
MW-1	7/8/2004	Not sampled; monitoring well contained 0.05 foot of product on water table.							
MW-1	10/26/2004	Sample collected for sulfolane analysis only; monitoring well contained 0.03 foot of product. Sulfolane was not detected.							
MW-1	6/7/2005	No sample collected; monitoring well contained 0.27 foot of product on the water table.							
MW-1	8/30/2005	No sample collected.							
MW-1	2/8/2006	No sample collected.							
MW-1	5/3/2006	No sample collected; well dry.							
MW-1	7/28/2006	*MW-1*	1.03	**1.650**	**85.6**	216	16.3	2.39	165
MW-1	9/14/2006	*MW-1*	**1.770**	0.340	**78.7**	29.1	13.7	42.9	19.8
MW-1	3/21/2007	Not sampled; well frozen.							
MW-1	7/13/2007	*MW-1*	0.442	0.173	**7.62**	22.4	2.4	18.1	11.3
MW-1	9/17/2007	*MW-1*	0.656	0.546	**38.8**	71.5	9.47	60.4	38.2
MW-1	5/24/2008	*MW-1* †	**4.86**	**4.20**	**962**	**142**	155	675	
MW-1	9/16/2009	No sample collected; monitoring well contained product layer greater than 2.03 feet.							
MW-1	9/28/2010	No sample collected; monitoring well contained product layer 2.6 feet thick.							
MW-1	9/30/2011	No sample collected, monitoring well contained product layer 1.04 feet thick.							
MW-1R	9/27/2012	*MW-1R*	4.35	3.32 JH*	**491**	216	116	425	
MW-1R	9/20/2013	No sample collected; monitoring well contained product layer 0.06 feet thick							
MW-2	10/1/1991	*B-2/S-1*	—	—	**210**	<1	20	90	
MW-2	10/1/1991	*B-2/S-2*	—	—	**230**	<1	5	64	
MW-2	2/27/1992	Not sampled; monitoring well contained product on water table.							
MW-2	7/22/1993	*3143-722-201*	—	—	**29**	<1	<1	<2	
MW-2	9/30/1993	*3143-930-201*	—	—	<1	<1	<1	<2	
MW-2	12/29/1993	*3143-1229-201*	—	—	**170**	<1	38	23	
MW-2	3/31/1994	*3143-331-2*	—	—	**100**	<1	9	8	
MW-2	11/21/2000	(IT data)	1.17	0.185	**31.0**	<1	<1	2.71	
MW-2	4/20/2001	(IT data)	0.792	0.0928	**15.3**	<2.00	<2.00	<2.00	<2.00
MW-2	11/19/2001	*1069-111901-MW2*	**2.39**	0.195	**95.5**	<1.00	2.93	5.29	2.61
MW-2	5/21/2002	*1069-052102-003*	0.18	<0.1	3.0	<1	<1	<2	<1
MW-2	8/1/2002	*1069-080102-006*	<0.1	<0.1	**9.70**	<1	<1	2.4	<1
MW-2	10/14/2002	*1069-101402-MW2*	1.2	0.56	**52.0**	<1	1.6	4.6	<1
MW-2	4/1/2003	*1169-040103-003*	0.32	<0.050	**9.10**	<1.0	<1.0	<3.0	
MW-2	7/7/2003	*1169-072303-MW2*	0.38	0.170	**18.0**	<1.0	<1.0	<3.0	
MW-2	11/6/2003	*1169-110603-004*	**2.5**	0.540	**220**	<5.0	7.8	29	
MW-2	7/8/2004	*1237-070804-005*	0.374	<0.0900	**10.7**	<2.00	<2.00	<4.00	
MW-2	10/26/2004	*1237-102604-004*	**1.60**	0.436	**108**	<1.00	1.53	10.1	1.81
MW-2	6/7/2005	*MW-2*	<0.309	<0.090	**6.32**	<2.00	<2.00	<2.00	<2.00
MW-2	6/7/2005	*MW-22* (dup)	<0.306	<0.090	**6.50**	<2.00	<2.00	<2.00	<2.00
MW-2	8/30/2005	*MW2*	<0.306	<0.090	4.31	<2.00	<2.00	<2.00	<2.00
MW-2	8/30/2005	*MW22* (dup)	<0.303	<0.090	4.77	<2.00	<2.00	<2.00	<2.00
MW-2	2/8/2006	*MW-2*	0.928	0.216	**62.8**	<2.00	<2.00	12.5	5.28
MW-2	2/8/2006	*MW-22* (dup)	0.71	0.207	**67.2**	<2.00	<2.00	8.33	3.46
MW-2	5/1/2006	*MW-2*	0.302	0.0919	**24.8**	<2.00	<2.00	<2.00	<2.00
MW-2	5/1/2006	*MW-22* (dup)	0.303	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-2	7/27/2006	*MW-2*	<0.300	<0.100	0.603	<2.00	<2.00	<2.00	<2.00
MW-2	7/27/2006	*MW-222* (dup)	<0.300	<0.100	4.93	<2.00	<2.00	<2.00	<2.00
MW-2	9/13/2006	*MW-2*	0.388	<0.100	**8.53**	<2.00	<2.00	<2.00	<2.00
MW-2	9/13/2006	*MW-222* (dup)	0.419	<0.100	**9.31**	<2.00	<2.00	<2.00	<2.00
MW-2	7/12/2007	*MW-2*	<0.317	<0.100	2.14	<2.00	<2.00	<2.00	<2.00
MW-2	5/23/2008	*MW-2*	<0.400	<0.050	**15.0**	<0.500	<0.500	<1.50	
MW-2	9/16/2009	*MW-2*	<0.714	0.156	**56.4**	<2.00	2.58	<2.00	10.9
MW-2	9/23/2010	*MW-2*	<0.769	<0.100	3.49	<1.00	<1.00	<2.00	<1.00
MW-2	9/23/2010	*MW-202* (dup)	—	—	3.19	<1.00	<1.00	<2.00	<1.00
MW-2	9/30/2011	*MW-2*	<0.627	<0.121	**26.6**	<1.00	1.51	5.16	0.640
MW-2	9/27/2012	*MW-2*	0.316 J	<0.0620	2.04	<0.620	<0.620	<1.24	<0.620
MW-2	9/19/2013	*MW-2*	<0.0620	<0.360	3.14	<0.620	<0.620	<1.24	<0.620
MW-2	9/19/2013	*EB-2*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-3	10/1/1991	*B-3/S-1*	—	—	**31.0**	<1	<1	<1	
MW-3	2/27/1992	Not sampled; monitoring well contained product on water table.							
MW-3	7/22/1993	*3143-722-301*	—	—	**110**	<1	25	7	
MW-3	9/30/1993	3143-930-301	—	—	**84.0**	1	12	12	
MW-3	12/29/1993	3143-1229-301	—	—	**130**	<1	40	13	
MW-3	3/31/1994	*3143-331-3*	—	—	**160**	<1	45	12	
MW-3	11/21/2000	(IT data)	0.664	<0.1	**20.8**	<1	<1	<2	<1
MW-3	4/20/2001	(IT data)	1.18	0.106	**30.9**	<2.00	<2.00	<2.00	<2.00
MW-3	11/19/2001	*1069-111901-MW3*	1.41	0.169	**52.5**	<1.00	17.2	13.4	1.47

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-3	5/21/2002	*1069-052102-004*	<0.1	<0.1	**15.0**	<1	<1	<2	<1
MW-3	8/1/2002	*1069-080102-007*	0.66	<0.1	**41.0**	<1	<1	2.2	<1
MW-3	10/14/2002	*1069-101402-MW3*	0.33	<0.1	**8.90**	<1	<1	<2	<1
MW-3	4/1/2003	*1169-040103-004*	0.88	0.1	**32.0**	<1.0	<1.0	<3.0	
MW-3	7/23/2003	*1169-072303-MW3*	0.41	0.064	**17.0**	<1.0	<1.0	<3.0	
MW-3	11/6/2003	*1169-110603-003*	1.00	0.150	**51.0**	1.4	17	23	
MW-3	7/9/2004	*1237-070904-006*	0.519	<0.0900	**23.9**	<2.00	<2.00	<4.00	
MW-3	10/26/2004	*1237-102604-005*	0.987	0.187	**47.2**	<1.00	4.86	11.8	1.56
MW-3	6/7/2005	*MW-3*	0.639	<0.090	**29.8**	<2.00	<2.00	<2.00	<2.00
MW-3	8/30/2005	*MW3*	0.835	<0.090	**28.6**	<2.00	<2.00	<2.00	<2.00
MW-3	2/8/2006	*MW-3*	**1.51**	<0.900	**68.4**	<1.00	5.73	4.48	<1.00
MW-3	5/1/2006	*MW-3*	1.11	<0.900	**23.1**	<2.00	<2.00	<2.00	<2.00
MW-3	7/27/2006	*MW-3*	0.375	0.103	**22.8**	<2.00	<2.00	5.27	<2.00
MW-3	9/13/2006	*MW-3*	1.280	<0.100	**24.0**	<2.00	<2.00	3.38	<2.00
MW-3	7/12/2007	*MW-3*	<0.323	<0.100	3.54	<2.00	<2.00	<2.00	<2.00
MW-3	5/23/2008	*MW-3*	0.602	0.082	**24.1**	<0.500	<0.500	2.83	
MW-3	9/16/2009	*MW-3*	<0.714	<0.100	**32.7**	<2.00	<2.00	<2.00	6.11
MW-3	9/16/2009	*MW-3A*	<0.714	<0.100	**34.1**	<2.00	<2.00	<2.00	6.58
MW-3	9/23/2010	*MW-3*	1.08	<0.100	**17.3**	<1.00	<1.00	<2.00	<1.00
MW-3	9/30/2011	*MW-3*	1.14	<0.105	**24.1**	<1.00	<1.00	2.05	<1.00
MW-3	9/27/2012	*MW-3*	0.751	<0.100 B*	**20.5**	<0.620	<0.620	1.73 J	<0.620
MW-3	9/27/2012	*MW-203*	0.633	<0.100 B*	**19.7**	<0.620	<0.620	1.85 J	<0.620
MW-3	9/19/2013	*MW-3*	0.0398 J	0.613	4.82	<0.620	<0.620	<1.24	<0.620
MW-3	9/19/2013	*MW-30*	0.0389 J	0.590 J	4.60	<0.620	<0.620	<1.24	<0.620
MW-4	12/3/1991	*314-123-MW4*	—	—	2.00	<1	<1	<3	
MW-4	2/27/1992	*3142-227-401*	—	—	**6.00**	2	<1	<3	
MW-4	7/23/1993	*3143-723-501*	—	—	**10.0**	60	9	57	
MW-4	9/30/1993	*3143-930-401*	—	—	**9.00**	5	8	11	
MW-4	12/29/1993	*3143-1229-401*	—	—	**5.00**	<1	2	6	
MW-4	3/31/1994	Monitoring well not sampled.							
MW-4	11/21/2000	(IT data)	<0.800	<0.0900	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	4/20/2001	(IT data)	<0.800	<0.0900	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	11/19/2001	*1069-111901-MW4*	<0.495	<0.0900	<0.500	<1.00	<1.00	<2.00	<1.00
MW-4	5/21/2002	*1069-052102-001*	0.26	<0.1	<1	<1	<1	<2	<1
MW-4	8/1/2002	*1069-080102-001*	0.22	<0.1	<1	<1	<1	<2	
MW-4	10/14/2002	*1069-101402-MW4*	0.15	<0.1	<1	<1	<1	<2	
MW-4	4/1/2003	*1169-040103-001*	0.2	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-4	7/23/2003	*1169-072303-MW4*	0.17	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-4	11/5/2003	*1169-110503-002*	0.17	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-4	7/8/2004	*1237-070804-002*	<0.306	<0.0900	<0.500	<2.00	<2.00	<4.00	
MW-4	10/26/2004	*1237-102604-003*	<0.313	<0.0900	<0.400	<1.00	<1.00	<2.00	<1.00
MW-4	6/7/2005	*MW-4*	0.311	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	8/30/2005	*MW4*	<0.303	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	2/8/2006	*MW-4*	<0.319	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	5/1/2006	*MW-4*	<0.300	<0.174	**48.1**	<2.00	<2.00	<2.00	<2.00
MW-4	7/28/2006	*MW-4*	<0.300	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	9/13/2006	*MW-4*	<0.300	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	7/12/2007	*MW-4*	<0.373	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-4	5/23/2008	*MW-4*	<0.391	<0.050	<0.500	<0.500	<0.500	<1.50	
MW-4	9/16/2009	*MW-4*	<0.714	<0.100	<2.00	<2.00	<2.00	<2.00	<2.00
MW-4	9/24/2010	*MW-4*	<0.784	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-4	9/30/2011	*MW-4*	<0.600	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-4	9/27/2012	*MW-4*	0.248 J	<0.0620	0.130 J	<0.620	<0.620	<1.24	<0.620
MW-4	9/19/2013	*MW-4*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-5	12/3/1991	*314-123-MW5*	—	—	<1	<1	<1	<2	
MW-5	12/3/1991	*314-123-MW7*	—	—	<1	<1	<1	<2	
MW-5	2/27/1992	*3142-227-501*	—	—	<1	<1	<1	<2	
MW-5	7/22/1993	*3143-722-401*	—	—	<1	<1	<1	<2	
MW-5	9/30/1993	*3143-930-501*	—	—	<1	<1	<1	<2	
MW-5	12/29/1993	*3143-1229-501*	—	—	2	<1	2	<2	
MW-5	3/31/1994	*3143-331-5*	—	—	<1	<1	<1	<2	
MW-5	11/21/2000	(IT data)	0.433	<0.0900	1.52	<1	<1	<2	
MW-5	4/20/2001	Monitoring well not sampled.							
MW-5	11/19/2001	*1069-111901-MW5*	0.595	<0.0900	1.87	<1.00	<1.00	<2.00	<1.00
MW-5	5/21/2002	*1069-052102-002*	0.53	<0.1	<1	<1	<1	<2	<1
MW-5	8/1/2002	*1069-080102-002*	**1.7**	<0.1	3.1	<1	<1	<2	<1
MW-5	10/14/2002	*1069-101402-MW5*	0.99	0.1	<1	<1	<1	<2	<1
MW-5	4/1/2003	*1169-040103-002*	0.27	<0.050	2.0	<1.0	<1.0	<3.0	
MW-5	7/23/2003	*1169-072303-MW5*	0.75	<0.050	1.0	<1.0	<1.0	<3.0	
MW-5	11/5/2003	*1169-110503-001*	0.54	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-5	7/8/2004	*1237-070804-001*	0.474	<0.0900	1.5	<2.00	<2.00	<4.00	
MW-5	10/26/2004	*1237-102604-001*	<0.313	<0.0900	0.50	<1.00	<1.00	<2.00	<1.00
MW-5	6/7/2005	*MW-5*	0.468	<0.090	1.35	<2.00	<2.00	<2.00	<2.00
MW-5	8/30/2005	*MW5*	0.378	<0.090	1.11	<2.00	<2.00	<2.00	<2.00
MW-5	2/8/2006	*MW-5*	0.337	<0.090	1.52	<2.00	<2.00	<2.00	<2.00
MW-5	5/1/2006	Not sampled; monitoring well frozen.							
MW-5	7/27/2006	*MW-5*	0.534	<0.100	1.41	<2.00	<2.00	<2.00	<2.00
MW-5	9/13/2006	*MW-5*	0.532	<0.100	0.709	<2.00	<2.00	<2.00	<2.00
MW-5	7/20/2007	*MW-5*	0.651	<0.100	0.787	<2.00	<2.00	<2.00	<2.00
MW-5	Immovable ice in casing on 5/22/08 and 5/23/08.								
MW-5	9/15/2009	*MW-5*	<0.714	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-5	9/24/2010	*MW-5*	<0.714	<0.100	0.730	<1.00	<1.00	<2.00	<1.00
MW-5	9/30/2011	*MW-5*	<0.600	<1.00	0.370	<1.00	<1.00	<2.00	<1.00

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-5	9/27/2012	*MW-5*	0.291 J	<0.0620	0.360 J	<0.620	<0.620	<1.24	<0.620
MW-5	9/19/2013	*MW-5*	<0.0620	0.206 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-6	12/3/1991	*314-123-MW6*	—	—	1	<1	<1	7	
MW-6	2/27/1992	*3142-227-601*	—	—	**17**	<1	<1	<2	
MW-6	7/22/1993	*3143-722-601*	—	—	**6.0**	<1	<1	<2	
MW-6	9/30/1993	*3143-930-601*	—	—	**15**	<1	<1	<2	
MW-6	12/29/1993	*3143-1229-601*	—	—	<1	<1	<1	<2	
MW-6	4/1/1994	*3143-401-6*	—	—	<1	<1	<1	<2	
MW-6	4/20/2001	(IT data)	**3.53**	0.149	<0.500	<2.00	<2.00	<2.00	3.64
MW-6	11/19/2001	*1069-111901-MW6*	1.12	<0.0900	1.37	<1.00	<1.00	<2.00	<1.00
MW-6	5/21/2002	*1069-052102-006*	0.34	<0.1	<1	<1	<1	<2	<1
MW-6	8/1/2002	*1069-080102-004*	0.72	<0.1	**5.2**	<1	<1	<2	<1
MW-6	10/14/2002	*1069-101402-MW6*	**2.00**	<0.1	2.8	<1	<1	<2	<1
MW-6	4/2/2003	*1169-040203-006*	0.39	0.07	<1.0	2.7	<1.0	4.1	
MW-6	7/24/2003	*1169-072403-MW6*	0.21	<0.050	<2.0	<2.0	<2.0	<4.0	
MW-6	11/7/2003	*1169-110703-009*	0.36	<0.050	<2.0	<2.0	<2.0	<2.0	<2.0
MW-6	7/9/2004	*1237-070904-008*	0.559	<0.0900	**30.1**	<10.0	<10.0	<30.0	
MW-6	10/27/2004	*1237-102704-009*	**2.77**	<0.0900	2.22	<1.00	<1.00	<2.00	<1.00
MW-6	6/9/2005	*MW-6*	**3.98**	0.115	**17.8**	<2.00	<2.00	<2.00	2.23
MW-6	8/16/2005	*MW6*	**4.01**	<0.090	**12.0**	<2.00	<2.00	<2.00	<2.00
MW-6	2/8/2006	*MW-6*	1.25	0.0397	1.49	<1.00	<1.00	<2.00	<1.00
MW-6	5/1/2006	*MW-6*	0.807	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-6	7/24/2006	*MW-6*	1.38	<0.100	1.26	<2.00	<2.00	<2.00	<2.00
MW-6	9/12/2006	*MW-6*	**1.52**	<0.100	1.30	<2.00	<2.00	<2.00	<2.00
MW-6	4/4/2007	*MW-6*	1.09	<0.100	**12.3**	<1.00	<1.00	<2.00	<1.00
MW-6	7/13/2007	*MW-6*	1.45	<0.100	**12.1**	<1.00	<1.00	<2.00	<1.00
MW-6	9/13/2007	*MW-6*	**2.62**	<0.100	**8.94** B	<1.00	<1.00	<2.00	<1.00
MW-6	5/22/2008	*MW-6*	**2.70**	0.0814	**6.58**	<2.00	<2.00	<4.00	<2.00
MW-6	9/15/2009	*MW-6*	**2.02**	<0.100	**19.9**	<1.00	<1.00	<1.00	<2.00
MW-6	9/23/2010	*MW-6*	**2.12**	<0.100	**11.2**	<1.00	<1.00	<2.00	<1.00
MW-6	9/30/2011	*MW-6*	0.570	<1.00	0.220	<1.00	<1.00	<2.00	<1.00
MW-6	9/30/2011	*MW-206 (dup)*	0.587	<1.00	0.190	<1.00	<1.00	<2.00	<1.00
MW-6R	9/27/2012	*MW-6*	0.595 J	<0.100 B*	0.350 J	<0.620	<0.620	0.730 J	0.950 J
MW-6R	9/27/2012	*MW-206*	0.531 J	<0.100 B*	—	—	—	—	—
MW-6R	9/18/2013	*MW-6R*	0.823	0.125	**17.4**	<0.620	0.310 J	<0.620	1.81
MW-7	7/2/2001	*1069-070201-MW1*	<0.495	<0.0900	**7.48**	<2.00	<2.00	<2.00	<2.00
MW-7	5/21/2002	*1069-052102-009*	0.200	<0.1	<1	<1	<1	<2	<1
MW-7	8/1/2002	*1069-080102-005*	0.190	<0.1	3.3	<1	<1	<2	<1
MW-7	10/14/2002	*1069-101402-MW7*	0.120	<0.1	<1	<1	<1	<2	<1
MW-7	4/2/2003	*1169-040203-007*	0.160	<1.0	<1.0	<1.0	<1.0	<3.0	
MW-7	7/23/2003	*1169-072303-MW7*	0.170	<0.050	3.3	<1.0	<1.0	<3.0	
MW-7	11/7/2003	*1169-110703-011*	<0.10	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-7	7/9/2004	*1237-070904-011*	0.303	<0.0900	1.92	<2.00	<2.00	<4.00	
MW-7	10/27/2004	*1237-102704-012*	<0.319	<0.0900	<0.400	<1.00	<1.00	<2.00	<1.00
MW-7	6/9/2005	*MW-7*	<0.326	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	9/1/2005	*MW7*	<0.300	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	2/8/2006	*MW-7*	0.321	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	5/3/2006	*MW-7*	<0.300	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	7/24/2006	*MW-7*	<0.300	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	9/11/2006	*MW-7*	0.332	<0.100	0.521	<2.00	<2.00	<2.00	<2.00
MW-7	3/21/2007	*MW-7*	<0.323	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	7/10/2007	*MW-7*	<0.319	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	9/6/2007	*MW-7*	<0.309	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	5/21/2008	*MW-7*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-7	9/15/2009	*MW-7*	<0.769	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-7	9/21/2010	*MW-7*	<0.714	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-7	9/29/2011	*MW-7*	0.231 J	<1.00	<0.400	<1.00	<1.00	<2.00	<1.00
MW-7	9/26/2012	*MW-7*	0.239 J	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-7	9/17/2013	*MW-7*	<0.0620	<0.372	<0.240	<0.620	<0.620	<1.24	<0.620
MW-8	5/21/2002	*1069-052102-007*	<0.1	<0.1	<1	<1	<1	<2	<1
MW-8	8/1/2002	*1069-080102-003*	**1.5**	<0.1	<1	<1	<1	<2	<1
MW-8	10/14/2002	*1069-101402-MW8*	0.51	<0.1	<1	1.8	<1	<2	<1
MW-8	4/2/2003	*1169-040203-005*	0.17	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-8	7/24/2003	*1169-072403-MW8*	<0.12	<0.050	<2.0	<2.0	<2.0	<4.0	
MW-8	11/7/2003	*1169-110703-008*	0.52	<0.050	<1.0	<1.0	<1.0	<3.0	
MW-8	7/9/2004	*1237-070904-007*	<0.303	<0.0900	<0.500	<2.00	<2.00	<4.00	
MW-8	10/26/2004	*1237-102604-008*	0.542	<0.900	<0.400	<1.00	1.39	9.93	4.22
MW-8	6/9/2005	*MW-8*	<0.313	<0.090	0.751	<2.00	<2.00	<2.00	<2.00
MW-8	8/16/2005	*MW8*	0.369	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	2/8/2006	*MW-8*	0.395	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	5/1/2006	*MW-8*	<0.300	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	7/24/2006	*MW-8*	<0.300	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	9/12/2006	*MW-8*	1.29	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	4/4/2007	*MW-8*	<0.319	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	4/4/2007	*MW-28*	<0.323	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	7/13/2007	*MW-8*	<0.314	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	9/6/2007	*MW-8*	0.954	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	5/22/2008	*MW-8*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-8	9/15/2009	*MW-8*	<0.714	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-8	9/23/2010	*MW-8*	<0.800	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-8	9/29/2011	*MW-8*	0.489	<1.00	<0.400	<1.00	<1.00	<2.00	<1.00
MW-8	9/26/2012	*MW-8*	0.262J	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-8	9/18/2013	*MW-8*	<0.0620	0.211 J	<0.240	<0.620	<0.620	<1.24	<0.620

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m- Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-9	5/21/2002	*1069-052102-005*	**2.7**	0.4	**<5 ¥**	<5 ¥	<5 ¥	<5 ¥	<5 ¥
MW-9	5/21/2002	*1069-052102-010* (dup)	2.8	0.27	<5 ¥	<5 ¥	<5 ¥	<5 ¥	<5 ¥
MW-9	8/1/2002	*1069-080102-008*	**3.3**	**2.1**	3.6	1.7	1	<2	<1
MW-9	8/1/2002	*1069-080102-009* (dup)	**3.6**	**1.9**	3.5	1.3	<1	<2	<1
MW-9	10/14/2002	*1069-101402-MW9*	**5.0**	**1.6**	**<5**	<5	<5	13	<5
MW-9	10/14/2002	*1069-101402-MW10* (dup)	**5.2**	0.77	**8.3**	1	7.4	22	<1
MW-9	4/2/2003	*1169-040203-008*	**1.7**	0.15	<1.0	<1.0	<1.0	<3.0	
MW-9	4/2/2003	*1169-040203-009* (dup)	1.3	0.150	<1.0	<1.0	<1.0	<3.0	
MW-9	7/24/2003	*1169-072403-MW9*	**18.0**	**2.10**	2.8	<2.0	2.8	2.4	
MW-9	7/24/2003	*1169-072403-MW19* (dup)	**19.0**	**2.00**	3.0	<2.0	3.1	2.6	
MW-9	11/7/2003	*1169-110703-010*	**7.10**	0.430	1.4	<1.0	2.1	6.7	
MW-9	7/9/2004	*1237-070904-009*	**6.54**	0.575	1.57	<2.00	<2.00	<4.00	
MW-9	10/27/2004	*1237-102704-010*	**5.39**	1.040	1.49	<1.00	1.46	<2.00	<1.00
MW-9	6/9/2005	*MW-9*	<0.313	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	6/9/2005	*MW-29* (dup)	<0.313	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	8/16/2005	*MW9*	0.383	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	8/16/2005	*MW29*	0.406	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	2/8/2006	*MW-9*	<0.390	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	2/8/2006	*MW-29* (dup)	<0.345	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	5/2/2006	*MW-9*	0.563	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	5/2/2006	*MW-29* (dup)	0.637	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	7/24/2006	*MW-9*	**3.27**	0.509	1.73	<1.00	<1.00	<2.00	<1.00
MW-9	7/24/2006	*MW-29*	**4.81**	0.609	1.76	<1.00	<1.00	<2.00	<1.00
MW-9	9/12/2006	*MW-9*	**5.62**	<1.000	1.20	<0.50	0.57	<0.50	<0.50
MW-9	9/12/2006	*MW-29*	**5.20**	1.11	1.40	<0.50	0.75	<0.50	<0.50
MW-9	4/4/2007	*MW-9*	0.988	0.161	<0.400	<1.00	<1.00	<2.00	<1.00
MW-9	4/4/2007	*MW-29*	1.38	0.203	<0.400	<1.00	<1.00	<2.00	<1.00
MW-9	7/13/2007	*MW-9*	**6.61**	0.839	<0.400	<1.00	<1.00	<2.00	<1.00
MW-9	9/13/2007	*MW-9*	**8.50**	0.602	1.78 B	<1.00	1.51 B	<2.00	<1.00
MW-9	5/22/2008	*MW-9*	**10.4**	**1.70**	<2.00	<2.00	<2.00	<4.00	<2.00
MW-9	9/15/2009	*MW-9*	**2.39**	0.261	<0.500	<2.00	<2.00	<2.00	<2.00
MW-9	9/23/2010	*MW-9*	0.866	0.144	<0.400	<1.00	<1.00	<2.00	<1.00
MW-9	9/30/2011	*MW-9*	0.189	<1.00	<0.400	<1.00	<1.00	<2.00	<1.00
MW-9	9/26/2012	*MW-9*	0.211 J	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-9	9/19/2013	*MW-9*	0.0333 J	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-10	7/24/2003	*1169-072403-MW10*	**1.90**	**2.30**	0.70 J	14	40	291	
MW-10	11/6/2003	*1169-110603-005*	**13.0**	**5.30**	**7.20**	150	170	1000	570
MW-10	11/6/2003	*1169-110603-006* (dup)	**14.0**	**4.40**	**7.30**	140	160	950	530
MW-10	7/8/2004	*1237-070804-003*	**2.53**	**1.71**	<4.00	17.4	61.3	334	158
MW-10	7/8/2004	*1237-070804-004* (dup)	**2.19**	**1.68**	<4.00	12.3	54	299	137
MW-10	10/26/2004	*1237-102604-006*	**6.19**	**4.28**	<4.00	82.2	156	961	519
MW-10	10/26/2004	*1237-102604-007* (dup)	**6.27**	**4.01**	<4.00	81.7	146.0	927	491
MW-10	6/7/2005	*MW-10*	**3.69**	**2.43**	1.69	14.3	58.4	328	178
MW-10	6/7/2005	*MW-210* (dup)	**3.54**	**2.41**	1.57	14.9	46.2	248	133
MW-10	9/1/2005	*MW10*	**11.0**	**3.26**	4.72	66.4	101	657	437
MW-10	9/1/2005	*MW210* (dup)	**11.6**	**3.15**	4.85	70.4	106	694	452
MW-10	2/8/2006	*MW-10*	**3.05**	**2.51**	1.84	7.82	86.7	509	265
MW-10	2/8/2006	*MW-210* (dup)	**2.84**	**2.56**	1.97	6.67	90.5	518	267
MW-10	5/1/2006	Not sampled; monitoring well frozen.							
MW-10	7/27/2006	*MW-10*	**2.25**	**2.11**	1.42	11.2	64.2	238	172
MW-10	7/27/2006	*MW-210* (dup)	**4.22**	**1.72**	1.33	10.0	61.7	234	159
MW-10	9/13/2006	*MW-10*	**10.1**	**2.82**	3.0	40.0	63.0	600	450
MW-10	9/13/2006	*MW-210* (dup)	**9.660**	**3.19**	2.8	37.0	64.0	560	410
MW-10	3/21/2007	Not sampled; monitoring well frozen.							
MW-10	7/13/07	*MW-10*	**2.19**	**1.91**	<0.400	1.87	40.1	253	145
MW-10	7/13/2007	*MW-210* (dup)	**2.84**	**1.92**	<0.400	3.36	43.4	252	
MW-10	9/17/2007	*MW-10*	**15.1**	**2.93**	2.71	22.5	<25.0	533	405
MW-10	9/17/2007	*MW-210* (dup)	**17.1**	**2.99**	2.72	22.6	35.4	598	424
MW-10	5/23/2008	*MW-10*	**7.80**	**3.03**	**<10.0**	22.4	97.8	699	438
MW-10	5/23/2008	*MW-210* (dup)	**6.92**	**3.04**	**<10.0**	21.7	101	710	449
MW-10	9/15/2009	*MW-10*	**15.9**	**3.42**	<4.00	16.3	61.6	478	585
MW-10	9/23/2010	*MW-10*	**12.3**	**1.85**	0.95	4.47	41	347	302
MW-10	9/23/2010	*MW-210* (dup)	**11.4**	**2.29**	0.95	4.07	40.3	314	280
MW-10	9/30/2011	*MW-10*	**67.7**	**2.28**	0.690	2.25	41.1	311	333
MW-10	9/30/2011	*MW-210 (dup)*	**59.9**	**2.22**	0.650	2.34	40.9	303	324
MW-10	9/27/2012	*MW-10*	**18.8 J***	1.48	0.42	0.860 J	15.6	174	238
MW-10	9/27/2012	*MW-210*	**13.7 J***	1.49	0.44	0.930 J	18.3	188	240
MW-10	9/19/2013	*MW-10*	**29.3**	1.50	0.200 J	0.430 J	10.3	<0.620	197
MW-10	9/19/2013	*MW-100*	**25.4**	1.42	0.170 J	0.450 J	9.65	<0.620	160
MW-11	7/24/2003	*1169-072403-MW11*	0.670	0.086	**24.0**	<1.0	<1.0	<3.0	
MW-11	11/6/2003	*1169-110603-007*	0.470	0.058	**19.0**	<1.0	<1.0	<3.0	
MW-11	7/9/2004	*1237-070904-010*	0.740	<0.0900	**29.4**	<2.00	<2.00	<4.00	
MW-11	10/27/2004	*1237-102704-011*	0.474	<0.0900	**28.7**	<1.00	<1.00	<2.00	<1.00
MW-11	6/8/2005	*MW-11*	<0.330	<0.090	<0.400	<1.00	<1.00	<2.00	<1.00
MW-11	8/16/2005	*MW11*	0.311	<0.090	**11.8**	<2.00	<2.00	<2.00	<2.00
MW-11	2/8/2006	*MW-11*	0.86	0.064	**25.5**	<2.00	<2.00	<2.00	<2.00
MW-11	5/3/2006	*MW-11*	0.759	0.109	**32.0**	<2.00	<2.00	<2.00	<2.00
MW-11	7/27/2006	*MW-11*	0.928	0.117	**39.5**	<2.00	<2.00	<2.00	<2.00
MW-11	9/12/2006	*MW-11*	0.661	<0.100	**14.1**	<2.00	<2.00	<2.00	<2.00
MW-11	4/3/2007	*MW-11*	0.654	<1.00	**24.6**	<1.00	<1.00	<2.00	<1.00
MW-11	7/12/2007	*MW-11*	0.515	<0.100	**23.2**	<1.00	<1.00	<2.00	<1.00
MW-11	9/17/2007	*MW-11*	0.598	<0.100	**16.0**	<1.00	<1.00	<2.00	<1.00
MW-11	5/22/2008	*MW-11*	<0.391	<0.050	**6.04**	<1.00	<1.00	<2.00	<1.00

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-11	9/16/2009	*MW-11*	<0.714	<0.100	**7.88**	<2.00	<2.00	<2.00	<2.00
MW-11	9/16/2009	*MW-11A*	—	<0.100	**7.81**	—	—	—	—
MW-11	9/22/2010	*MW-11*	<0.893	<0.100	**13.3**	<1.00	<1.00	<2.00	<1.00
MW-11	9/29/2011	*MW-11*	0.437	<0.100	4.47	<1.00	<1.00	<2.00	<1.00
MW-11	9/26/2012	*MW-11*	0.445 J	<0.100 B*	4.55	<0.620	<0.620	<1.24	<0.620
MW-11	9/26/2012	*MW-211*	—	—	4.74	<0.620	<0.620	<1.24	<0.620
MW-11	9/18/2013	*MW-11*	<0.0620	0.418 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-12	11/3/2004	*1237-110304-016*	<0.306	<0.0900	<0.400	<1.00	<1.00	<2.00	<1.00
MW-12	6/8/2005	*MW-12*	**1.68**	<0.090	<0.400	<1.00	<1.00	<2.00	<1.00
MW-12	9/2/2005	*MW12*	1.33	1.180	**14.6**	516	<20.0	38.8	<20.0
MW-12	10/3/2005	*MW12*	0.617	0.454	<0.400	257	<1.00	<2.00	<1.00
MW-12	2/8/2006	*MW-12*	<0.345	0.097	<0.400	54.5	<1.00	<2.00	<1.00
MW-12	5/24/2006	*MW-12*	<0.300	<0.090	<0.400	10.7	<1.00	<2.00	<1.00
MW-12	7/26/2006	*MW-12*	<0.300	<0.100	<0.400	4.93	<1.00	<2.00	<1.00
MW-12	9/11/2006	*MW-12*	<0.309	<0.100	<0.50	2.0	<0.50	<0.50	<0.50
MW-12	4/3/2007	*MW-12*	<0.323	<1.00	<0.400	<1.00	<1.00	<2.00	<1.00
MW-12	7/12/2007	*MW-12*	<0.319	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-12	9/6/2007	*MW-12*	0.341	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-12	6/11/2008	*MW-12*	**1.92**	**1.44**	**<20.0**	897	<20.0	<40.0	<20.0
MW-13	11/3/2004	*1237-110304-017*	<0.323	<0.0900	<0.400	<1.00	<1.00	<2.00	<1.00
MW-13	6/8/2005	*MW-13*	0.413	<0.090	1.07	<1.00	<1.00	<2.00	<1.00
MW-13	9/2/2005	*MW13*	<0.313	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-13	2/8/2006	*MW-13*	<0.326	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-13	5/2/2006	*MW-13*	<0.300	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-13	7/26/2006	*MW-13*	0.427	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-13	9/12/2006	*MW-13*	<0.309	<0.100	<0.50	<0.50	<0.50	<0.50	<0.50
MW-13	3/22/2007	*MW-13*	0.334	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-13	7/11/2007	*MW-13*	0.532	<0.100	3.37	<1.00	<1.00	<2.00	<1.00
MW-13	9/6/2007	*MW-13*	0.316	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-13	6/11/2008	*MW-13*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-14	11/3/2004	*1237-110304-018*	0.459	<0.0900	**20.5**	<1.00	<1.00	<2.00	<1.00
MW-14	6/8/2005	*MW-14*	0.463	<0.090	**13.7**	<1.00	<1.00	<2.00	<1.00
MW-14	9/2/2005	*MW14*	0.441	<0.090	**12.8**	<2.00	<2.00	<2.00	<2.00
MW-14	2/8/2006	*MW-14*	0.338	<0.090	**6.78**	<1.00	<1.00	<2.00	<1.00
MW-14	5/24/2006	*MW-14*	0.573	<0.090	**10.2**	<1.00	<1.00	<2.00	<1.00
MW-14	7/26/2006	*MW-14*	0.818	<0.100	**9.8**	<1.00	<1.00	<2.00	<1.00
MW-14	9/11/2006	*MW-14*	0.756	<0.100	**11.0**	<0.50	<0.50	<0.50	<0.50
MW-14	3/22/2007	*MW-14*	<0.521	<0.100	**5.90**	<1.00	<1.00	<2.00	<1.00
MW-14	7/11/2007	*MW-14*	0.499	<0.100	**6.01**	<1.00	<1.00	<2.00	<1.00
MW-14	7/11/2007	*MW-41*	0.455	<0.100	**6.04**	<1.00	<1.00	<2.00	<1.00
MW-14	9/6/2007	*MW-14*	0.649	<0.100	**7.27**	<1.00	<1.00	<2.00	<1.00
MW-14	9/6/2007	*MW-41*	0.834	<0.100	**7.19**	<1.00	<1.00	<2.00	<1.00
MW-14	6/11/2008	*MW-14*	0.443	<0.050	4.91	<1.00	<1.00	<2.00	<1.00
MW-14	6/11/2008	*MW-41*	0.439	<0.050	4.55	<1.00	<1.00	<2.00	<1.00
MW-15	11/2/2004	*1237-110204-015*	<0.313	<0.0900	2.78	<1.00	<1.00	<2.00	<1.00
MW-15	6/8/2005	*MW-15*	<0.313	<0.090	2.43	<2.00	<2.00	<2.00	<2.00
MW-15	9/1/2005	*MW15*	<0.309	<0.090	1.10	<2.00	<2.00	<2.00	<2.00
MW-15	2/8/2006	*MW-15*	<0.345	0.029	1.79	<2.00	<2.00	<2.00	<2.00
MW-15	5/3/2006	*MW-15*	<0.300	<0.090	1.78	<2.00	<2.00	<2.00	<2.00
MW-15	7/24/2006	*MW-15*	<0.300	<0.100	1.39	<2.00	<2.00	<2.00	<2.00
MW-15	9/13/2006	*MW-15*	<0.313	<0.100	1.13	<2.00	<2.00	<2.00	<2.00
MW-15	3/23/2007	*MW-15*	0.347	<0.100	1.49	<2.00	<2.00	<2.00	<2.00
MW-15	7/13/2007	*MW-15*	<0.300	<0.100	1.18	<2.00	<2.00	<2.00	<2.00
MW-15	9/7/2007	*MW-15*	<0.300	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-15	5/23/2008	*MW-15*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-15	9/16/2009	*MW-15*	<0.714	<0.100	0.865	<2.00	<2.00	<2.00	<2.00
MW-15	9/23/2010	*MW-15*	<0.714	<0.100	0.580	<1.00	<1.00	<2.00	<1.00
MW-15	9/30/2011	*MW-15*	0.337	<0.100	0.890	<1.00	<1.00	<2.00	<1.00
MW-15	9/26/2012	*MW-15*	<0.360	<0.0620	0.95	<0.620	<0.620	<1.24	<0.620
MW-15	9/17/2013	*MW-15*	<0.0620	<0.376	0.420	<0.620	<0.620	<1.24	<0.620
MW-16	11/2/2004	*1237-110204-014*	1.41	0.105	**7.31**	<1.00	6.69	2.36	<1.00
MW-16	6/8/2005	*MW-16*	1.37	0.163	**11.8**	<2.00	15.2	7.93	<2.00
MW-16	9/1/2005	*MW16*	0.429	<0.090	<0.500	<2.00	<2.00	<2.00	<2.00
MW-16	10/3/2005	*MW16*	0.344	<0.090	<0.400	<1.00	<1.00	<2.00	<1.00
MW-16	2/8/2006	*MW-16*	0.936	0.079	**5.82**	<2.00	3.60	4.68	<2.00
MW-16	5/24/2006	*MW-16*	0.824	0.163	**5.94**	<2.00	8.29	7.34	<2.00
MW-16	7/24/2006	*MW-16*	0.513	<0.100	2.19	<2.00	<2.00	2.47	<2.00
MW-16	9/13/2006	*MW-16*	0.827	<0.100	1.18	<2.00	2.05	<2.00	<2.00
MW-16	3/22/2007	*MW-16*	**2.44**	0.117	**11.9**	<2.00	4.86	4.22	2.17
MW-16	7/12/2007	*MW-16*	0.830	0.106	**5.56**	<2.00	7.12	5.25	<2.00
MW-16	9/7/2007	*MW-16*	0.606	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-16	5/23/2008	*MW-16*	1.15	0.534	**6.67**	<1.00	<1.00	<2.00	<1.00
MW-16	5/23/2008	*MW-61* (dup)	1.03	<0.050	**6.38**	<1.00	<1.00	<2.00	<1.00
MW-16	9/16/2009	*MW-16*	0.991	<0.100	1.58	<2.00	<2.00	<2.00	<2.00
MW-16	9/16/2009	*MW-16A* (dup)	<0.714	<0.100	1.50	<2.00	<2.00	<2.00	<2.00
MW-16	9/23/2010	*MW-16*	<0.714	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-16	9/23/2010	*MW-61(dup)*	<0.800	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-16	9/30/2011	*MW-16*	0.906	<0.100	1.37	<1.00	0.610	<2.00	<1.00
MW-16	9/30/2011	*MW-61(dup)*	1.03	<0.100	1.13	<1.00	<1.00	<2.00	<1.00
MW-16	9/26/2012	*MW-16*	1.15	<0.100 B*	0.98	<0.620	1.40	<1.24	<0.620
MW-16	9/17/2013	*MW-16*	<0.0620	0.449 J	<0.240	<0.620	<0.620	<1.24	<0.620

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-17A	11/3/2004	*1237-110304-019*	<0.353	<0.0900	2.04	<1.00	<1.00	<2.00	<1.00
MW-17A	6/9/2005	*MW-17A*	<0.306	<0.090	1.39	<1.00	<1.00	<2.00	<1.00
MW-17A	8/16/2005	*MW17A*	<0.303	<0.090	1.33	<1.00	<1.00	<2.00	<1.00
MW-17A	2/8/2006	No sample collected.							
MW-17A	5/3/2006	*MW-17A*	<0.300	<0.090	0.54	<1.00	<1.00	<2.00	<1.00
MW-17A	7/24/2006	*MW-17A*	<0.300	<0.100	0.71	<1.00	<1.00	<2.00	<1.00
MW-17A	9/14/2006	*MW-17A*	<0.313	<0.100	0.83	<0.50	<0.50	<0.50	<0.50
MW-17A	4/4/2007	*MW-17A*	<0.357	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17A	7/13/2007	*MW-17A*	<0.373	<0.100	<0.400	<1.00	<1.00	<2.00*	<1.00*
MW-17A	9/13/2007	*MW-17A*	<0.300	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17A	5/22/2008	*MW-17A*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-17A	9/15/2009	*MW-17A*	<0.769	<0.100	<0.400	<1.00	<1.00	<1.00	<2.00
MW-17A	9/24/2010	*MW-17A*	<0.714	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17A	9/30/2011	*MW-17A*	0.258	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17A	9/26/2012	*MW-17A*	<0.360	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-17A	9/18/2013	*MW-17A*	<0.0620	<0.360	<0.240	0.310 J	<0.620	<0.620	<0.620
MW-17B	11/3/2004	*1237-110304-020*	<0.341	<0.0900	1.79	<1.00	<1.00	<2.00	<1.00
MW-17B	11/3/2004	*1237-110304-021* (dup)	<0.341	<0.0900	1.42	<1.00	<1.00	<2.00	<1.00
MW-17B	6/9/2005	*MW-17B*	<0.309	<0.090	1.29	<1.00	<1.00	<2.00	<1.00
MW-17B	8/16/2005	*MW17B*	<0.300	<0.090	1.33	<1.00	<1.00	<2.00	<1.00
MW-17B	2/8/2006	No sample collected.							
MW-17B	5/3/2006	*MW-17B*	<0.300	<0.090	0.49	<1.00	<1.00	<2.00	<1.00
MW-17B	7/24/2006	*MW-17B*	<0.300	<0.100	0.63	<1.00	<1.00	<2.00	<1.00
MW-17B	9/14/2006	*MW-17B*	<0.313	<0.100	0.63	<0.50	<0.50	<0.50	<0.50
MW-17B	4/4/2007	*MW-17B*	<0.333	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17B	7/13/2007	*MW-17B*	<0.330	<0.100	<0.400	<1.00	<1.00	<1.00	<1.00
MW-17B	9/13/2007	*MW-17B*	<0.331	<0.100	1.24 B	<1.00	<1.00	<2.00	<1.00
MW-17B	5/22/2008	*MW-17B*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-17B	9/15/2009	*MW-17B*	<0.714	<0.100	<0.400	<1.00	<1.00	<1.00	<2.00
MW-17B	9/24/2010	*MW-17B*	<0.755	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17B	9/30/2011	*MW-17B*	<0.600	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-17B	9/26/2012	*MW-17B*	<0.360	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-17B	9/18/2013	*MW-17B*	<0.0620	<0.372	<0.240	<0.620	<0.620	<0.620	<0.620
MW-18	11/2/2004	*1237-110204-013*	**4.37**	0.780	0.57	<1.00	19.1	50.5	23.7
MW-18	6/7/2005	*MW-18*	**8.68**	0.960	2.04	<2.00	35.8	75.1	25.9
MW-18	8/30/2005	*MW18* †	**15.4**	1.030	**<5.00**	<20.0	21.3	55.8	48.7
MW-18	2/8/2006	No sample collected.							
MW-18	5/3/2006	*MW-18*	**8.48**	**1.610**	2.63	3.56	35.9	105	103
MW-18	7/28/2006	*MW-18*	**7.50**	1.02	2.68	<2.00	39.7	3.38	2.17
MW-18	9/14/2006	*MW-18*	**10.3**	<0.100	<0.500	<2.00	2.58	6.48	6.10
MW-18	4/4/2007	Not sampled; monitoring well covered with snow berm.							
MW-18	7/13/2007	*MW-18*	**6.86**	0.849	1.86	8.71	52.0	66.5	31.9
MW-18	9/17/2007	*MW-18*	**17.1**	1.02	3.23	5.53	28.5	50.9	35.4
MW-18	5/24/2008	*MW-18*	**8.18**	0.510	<0.500	<0.500	0.67	24.2	
MW-18	9/16/2009	Not sampled; purge water covered by heavy sheen.							
MW-18	9/28/2010	No sample collected; monitoring well contained product layer 0.05 foot thick.							
MW-18	9/30/2011	No sample collected;monitoring well contained product layer 0.01 foot thick.							
MW-18R	9/26/2012	No sample collected; monitoring well contained sheen.							
MW-18R	9/20/2013	No sample collected; monitoring well contained sheen.							
MW-19	6/8/2005	*MW-19*	<0.319	<0.090	0.733	<2.00	<2.00	<2.00	<2.00
MW-19	8/30/2005	*MW19*	<0.323	<0.090	0.896	<2.00	<2.00	<2.00	<2.00
MW-19	2/8/2006	*MW-19*	<0.316	<0.090	0.74	<2.00	<2.00	<2.00	<2.00
MW-19	5/2/2006	*MW-19*	<0.300	<0.090	0.51	<1.00	<1.00	<2.00	<1.00
MW-19	7/24/2006	*MW-19*	<0.300	<0.100	0.72	<1.00	<1.00	<2.00	<1.00
MW-19	9/11/2006	*MW-19*	<0.314	<0.100	0.52	<0.50	<0.50	<0.50	<0.50
MW-19	3/22/2007	*MW-19*	<0.323	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-19	7/10/2007	*MW-19*	<0.313	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-19	9/6/2007	*MW-19*	<0.323	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-19	5/21/2008	*MW-19*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-19	9/16/2009	*MW-19*	<0.714	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-19	9/22/2010	*MW-19*	<0.784	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-19	9/29/2011	*MW-19*	0.205	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-19	9/26/2012	*MW-19*	0.192 J	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-19	9/17/2013	*MW-19*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620
MW-20	2/8/2006	*MW-20*	<0.330	<0.090	1.13	<1.00	<1.00	<2.00	<1.00
MW-20	5/2/2006	*MW-20*	<0.300	<0.090	2.16	<1.00	<1.00	<2.00	<1.00
MW-20	7/24/2006	*MW-20*	<0.300	<0.100	2.36	<1.00	<1.00	<2.00	<1.00
MW-20	9/11/2006	*MW-20*	<0.309	<0.100	1.0	<0.50	<0.50	<0.50	<0.50
MW-20	3/21/2007	*MW-20*	<0.309	<0.100	2.05	<2.00	<2.00	<2.00	<2.00
MW-20	7/11/2007	*MW-20*	<0.331	<0.100	2.22	<2.00	<2.00	<2.00	<2.00
MW-20	9/17/2007	*MW-20*	<0.326	<0.100	1.65	<2.00	<2.00	<2.00	<2.00
MW-20	5/22/2008	*MW-20*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-20	9/15/2009	*MW-20*	<0.714	<0.100	0.680	<2.00	<2.00	<2.00	<2.00
MW-20	9/21/2010	*MW-20*	<0.714	<0.100	0.730	<1.00	<1.00	<2.00	<1.00
MW-20	9/29/2011	*MW-20*	0.202	<1.00	0.410	<1.00	<1.00	<2.00	<1.00
MW-20	9/26/2012	*MW-20*	0.180 J	<0.0620	0.68	<0.620	<0.620	<1.24	<0.620
MW-20	9/17/2013	*MW-20*	<0.0620	<0.360	<0.240	<0.620	<0.620	<1.24	<0.620

Table 4
Historical DRO, GRO, and BTEX Groundwater Concentrations
Flint Hills Resources Alaska FIA Fuel Terminal

Sample Location	Sample Date	Sample Number	DRO (mg/L)	GRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
ADEC Groundwater-Cleanup Level			1.5	1.3	5	1,000	700	10,000 (total)	
MW-21	2/8/2006	*MW-21*	0.489	<0.090	**7.95**	<1.00	<1.00	<2.00	<1.00
MW-21	5/24/2006	*MW-21*	0.416	<0.090	4.48	<1.00	<1.00	<2.00	<1.00
MW-21	7/27/2006	*MW-21*	0.728	<0.100	**8.62**	<1.00	<1.00	<2.00	<1.00
MW-21	9/12/2006	*MW-21*	<0.306	<0.100	<0.50	<0.50	<0.50	<0.50	<0.50
MW-21	4/3/2007	*MW-21*	0.881	<0.100	**9.99**	<1.00	<1.00	<2.00	<1.00
MW-21	7/12/2007	*MW-21*	0.643	<0.100	**10.4**	<1.00	<1.00	<2.00	<1.00
MW-21	9/17/2007‡	*MW-21*	0.806	<1.00	4.42	<1.00	<1.00	<2.00	<1.00
MW-21	10/10/2007	*MW-21*	0.557	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-21	5/22/2008	*MW-21*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
MW-21	9/15/2009	*MW-21*	<0.741	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-21	9/22/2010	*MW-21*	<0.714	<0.100	1.14	<1.00	<1.00	<2.00	<1.00
MW-21	9/29/2011	*MW-21*	0.310	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-21	9/26/2012	*MW-21*	0.194 J	<0.0620	0.300 J	<0.620	<0.620	<1.24	<0.620
MW-21	9/18/2013	*MW-21*	<0.0620	0.233 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-22	7/26/2006	*MW-22*	<0.300	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-22	9/14/2006	*MW-22*	<0.306	<0.100	<0.50	<0.50	<0.50	<0.50	<0.50
MW-22	4/3/2007	*MW-22*	<0.330	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-22	7/12/2007	*MW-22*	<0.341	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-22	9/6/2007	*MW-22*	<0.323	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-22	5/21/2008	*MW-22*	<0.391	<0.050	<0.500	<0.500	<0.500	<1.50	
MW-22	9/16/2009	*MW-22*	<0.714	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-22	9/21/2010	*MW-22*	<0.769	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-22	9/29/2011	*MW-22*	<0.600	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-22	9/26/2012	*MW-22*	0.276 J	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-22	9/18/2013	*MW-22*	<0.0620	0.211 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-23	6/3/2008	*MW-23*	1.11	<0.080	<1.00	<1.00	<1.00	<2.00	<1.00
MW-23	9/16/2009	*MW-23*	<0.714	<0.100	<0.500	<2.00	<2.00	<2.00	<2.00
MW-23	9/24/2010	*MW-23*	<0.714	<0.100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-23	9/30/2011	*MW-23*	<0.817	<.0100	<0.400	<1.00	<1.00	<2.00	<1.00
MW-23	9/27/2012	*MW-23*	0.719	<0.0620	<0.240	<0.620	<0.620	<1.24	<0.620
MW-23	9/20/2013	*MW-23*	<0.0620	0.400 J	<0.240	<0.620	<0.620	<1.24	<0.620
MW-24	6/4/2008	*MW-24*	**7.83**	**6.23**	**<10.0**	<10.0	326	1310	246
MW-24	6/4/2008	*MW-42* (dup)	**7.60**	**6.89**	**<10.0**	<10.0	394	1540	317
MW-24	9/16/2009	*MW-24*	**5.19**	**7.56**	<4.00	<10.0	403	771	1900
MW-24	9/16/2009	*MW-24A* (dup)	**4.44**	—	—	—	—	—	—
MW-24	9/23/2010	*MW-24*	**5.66**	**6.45**	0.500	3.83	515	2200	911
MW-24	9/30/2011	No sample collected, monitoring well contained product layer 0.08 feet thick.							
MW-24	9/26/2012	No sample collected; monitoring well contained product layer 0.01 foot thick.							
MW-24	9/19/2013	No sample collected; monitoring well contained product layer 0.38 feet thick.							
MW-25	6/3/2008	*MW-25*	**1.58**	0.131	1.57	<1.00	2.07	20.8	14.0
MW-25	9/16/2009	*MW-25*	<0.755	0.397	1.65	<2.00	<2.00	112	25.9
MW-25	9/23/2010	Well inaccessible; no sample collected.							
MW-25	9/30/2011	*MW-25*	1.45	<0.100	0.490	<1.00	<1.00	1.24	11.2
MW-25	9/26/2012	*MW-25*	0.477 J	<0.0620	1.06	<0.620	<0.620	<1.24	<0.620
MW-25	9/17/2013	*MW-25*	<0.0620	0.310 J	0.740	<0.620	<0.620	<1.24	<0.620
WP-1A (13 ft bgs)	6/11/2008	*WP-1A*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
WP-1B (19 ft bgs)	6/11/2008	*WP-1B*	<0.394	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
WP-2A (15 ft bgs)	6/11/2008	*WP-2A*	0.532	<0.050	1.31	<1.00	<1.00	<2.00	<1.00
WP-2B (20 ft bgs)	6/12/2008	*WP-2B*	0.586	0.0507	**15.9**	<1.00	<1.00	<2.00	<1.00
WP-3A (11 ft bgs)	6/12/2008	*WP-3A*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00
WP-3B (19 ft bgs)	6/12/2008	*WP-3B*	<0.391	<0.050	<1.00	<1.00	<1.00	<2.00	<1.00

Notes:
BOLD Analyte concentration exceeds the ADEC cleanup level.
(dup) Duplicate sample from monitoring well collected on same date.
B* Result considered not detected at LOQ due to trip blank detection; data flag applied by Shannon & Wilson, Inc.
B Result considered biased high due to trip blank or method blank (laboratory) contamination.
J Estimated result, detected below the limit of quantitation (LOQ).
J* Estimated result due to duplicate relative percent difference exceedance; data flag applied by Shannon & Wilson, Inc.
JH* Result considered biased high due to surrogate failure; data flag applied by Shannon & Wilson, Inc.
† NAPL present in well.
— Analysis not requested for this sample.
¥ Analytes not detected above PQL for VOC analysis by EPA Method 8260.
* Total Xylenes reported as 2.33 µg/L
‡ Sample analyzed beyond required holding time.

APPENDIX A

SUMMARY OF MONITORING WELL OBSERVATIONS

From: Rodney Guritz
To: Kristen Freiburger
Cc: Erica Blake
Subject: Fuel terminal well condition
Date: Thursday, September 26, 2013 9:57:10 AM

Hi Kristen,
There were no drums of soil on site, as far as we could tell they were removed and brought to the refinery for disposal.

Here's a brief summary of well conditions:

MW-5
Casing is frostjacked slightly, preventing lid from shutting fully. Should be cut down this fall. Monument is a smaller than standard Morrison flushmount, with two bolt tabs. Should be replaced with a standard three-bolt Bort-Longyear monument.

MW-6
Also a smaller than standard Morrison flushmount; should be replaced with a standard stickup monument; this well is by the abandoned rail line and hard to find in the winter.

MW-18
Large 12-inch Morrison monument. One of the two bolt tabs is stripped, preventing it from shutting fully. Should be replaced with a standard three-bolt Bort-Longyear monument.

MW-1R
Large 12-inch Morrison monument. Monument is in good condition and shuts fully, so no need to replace, but we may want to replace with standard three-bolt Bort-Longyear monument for standardization.

MW-17A/B
This well should have had its flushmount monument replaced with a stickup; this well is by the abandoned rail line and hard to find in the winter.

Remaining wells were OK, according to Erica.

Thanks,
Rodney

APPENDIX B

SGS ANALYTICAL REPORT (1138498) and ADEC LABORATORY DATA REVIEW CHECKLIST

SGS

Laboratory Report of Analysis

To: Flint Hills Resources- North Pole
2355 Hill Road
Fairbanks, AK 99707
(907) 458-3146

Report Number: **1138498**

Client Project: **1661-002 FHRA Terminal**

Dear Kristen Freiburger,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Stephen C. Ede
Alaska Division Technical Director

Stephen Ede
2013.10.02
09:16:23 -08'00'

Jennifer Dawkins
Project Manager

Date

Print Date: 10/01/2013 3:47:06PM

Case Narrative

SGS Client: **Flint Hills Resources- North Pole**
SGS Project: **1138498**
Project Name/Site: **1661-002 FHRA Terminal**
Project Contact: **Kristen Freiburger**

Refer to sample receipt form for information on sample condition.

MW-3 (1138498002) PS

AK102 - The pattern is consistent with a weathered gasoline.

MW-6R (1138498005) PS

AK102 - The pattern is consistent with a weathered gasoline.

MW-10 (1138498009) PS

AK102 - Unknown hydrocarbon with several peaks is present.

MW-100 (1138498021) PS

AK102 - Unknown hydrocarbon with several peaks is present.

CCV for HBN 1486198 (VMS/13771 (1181051) CCV

8260B - CCV recovery for 2-Butanone does not meet QC criteria (biased high). This analyte was not detected above the LOQ in the associated samples.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260B				
1138498009	MW-10	VMS13771	4-Isopropyltoluene	SP
1138498021	MW-100	VMS13771	4-Isopropyltoluene	SP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 10/01/2013 3:47:07PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW-2	1138498001	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-3	1138498002	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-4	1138498003	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-5	1138498004	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-6R	1138498005	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-7	1138498006	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-8	1138498007	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-9	1138498008	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-10	1138498009	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-11	1138498010	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-15	1138498011	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-16	1138498012	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-17A	1138498013	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-17B	1138498014	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-19	1138498015	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-20	1138498016	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-21	1138498017	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-22	1138498018	09/18/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-25	1138498019	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-30	1138498020	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-100	1138498021	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
EB-2	1138498022	09/19/2013	09/24/2013	Water (Surface, Eff., Ground)
MW-23	1138498023	09/20/2013	09/24/2013	Water (Surface, Eff., Ground)
Trip Blank - GRO	1138498024	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)
Trip Blank - VOC	1138498025	09/17/2013	09/24/2013	Water (Surface, Eff., Ground)

Method	Method Description
AK102	Diesel Range Organics (W)
AK101	Gasoline Range Organics (W)
SW8260B	Volatile Organic Compounds (W)
SW8260B	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **MW-2**			
Lab Sample ID: 1138498001	Parameter	Result	Units
Volatile GC/MS	Benzene	3.14	ug/L
Client Sample ID: **MW-3**			
Lab Sample ID: 1138498002	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.613	mg/L
Volatile Fuels	Gasoline Range Organics	0.0398J	mg/L
Volatile GC/MS	Benzene	4.82	ug/L
Client Sample ID: **MW-5**			
Lab Sample ID: 1138498004	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.206J	mg/L
Client Sample ID: **MW-6R**			
Lab Sample ID: 1138498005	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.823	mg/L
Volatile Fuels	Gasoline Range Organics	0.125	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	2.48	ug/L
	1,3,5-Trimethylbenzene	1.83	ug/L
	4-Isopropyltoluene	2.36	ug/L
	Benzene	17.4	ug/L
	Ethylbenzene	0.310J	ug/L
	Isopropylbenzene (Cumene)	0.380J	ug/L
	Naphthalene	0.760J	ug/L
	o-Xylene	1.81	ug/L
	P & M -Xylene	1.84J	ug/L
	Xylenes (total)	3.65	ug/L
Client Sample ID: **MW-8**			
Lab Sample ID: 1138498007	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.211J	mg/L
Client Sample ID: **MW-9**			
Lab Sample ID: 1138498008	Parameter	Result	Units
Volatile Fuels	Gasoline Range Organics	0.0333J	mg/L

Detectable Results Summary

Client Sample ID: **MW-10**
Lab Sample ID: 1138498009

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	29.3	mg/L
Volatile Fuels	Gasoline Range Organics	1.50	mg/L
Volatile GC/MS	1,1,1-Trichloroethane	35.8	ug/L
	1,1-Dichloroethane	12.0	ug/L
	1,2,4-Trimethylbenzene	180	ug/L
	1,3,5-Trimethylbenzene	90.7	ug/L
	4-Isopropyltoluene	9.87	ug/L
	Benzene	0.200J	ug/L
	Carbon disulfide	2.25	ug/L
	Chloromethane	0.580J	ug/L
	Ethylbenzene	10.3	ug/L
	Isopropylbenzene (Cumene)	6.83	ug/L
	n-Propylbenzene	13.7	ug/L
	Naphthalene	83.3	ug/L
	o-Xylene	197	ug/L
	P & M -Xylene	96.9	ug/L
	sec-Butylbenzene	7.46	ug/L
	tert-Butylbenzene	1.69	ug/L
	Toluene	0.430J	ug/L
	Trichlorofluoromethane	4.10	ug/L
	Xylenes (total)	294	ug/L

Client Sample ID: **MW-11**
Lab Sample ID: 1138498010

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.418J	mg/L

Client Sample ID: **MW-15**
Lab Sample ID: 1138498011

	Parameter	Result	Units
Volatile GC/MS	Benzene	0.420	ug/L

Client Sample ID: **MW-16**
Lab Sample ID: 1138498012

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.449J	mg/L

Client Sample ID: **MW-17A**
Lab Sample ID: 1138498013

	Parameter	Result	Units
Volatile GC/MS	1,2,4-Trimethylbenzene	0.730J	ug/L
	Toluene	0.310J	ug/L
	Trichloroethene	0.330J	ug/L

Client Sample ID: **MW-17B**
Lab Sample ID: 1138498014

	Parameter	Result	Units
Volatile GC/MS	1,1-Dichloroethane	0.310J	ug/L
	Chloromethane	0.470J	ug/L
	Trichloroethene	0.330J	ug/L

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Detectable Results Summary

Client Sample ID: **MW-21**			
Lab Sample ID: 1138498017	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.233J	mg/L
Client Sample ID: **MW-22**			
Lab Sample ID: 1138498018	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.211J	mg/L
Client Sample ID: **MW-25**			
Lab Sample ID: 1138498019	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.310J	mg/L
Volatile GC/MS	Benzene	0.740	ug/L
Client Sample ID: **MW-30**			
Lab Sample ID: 1138498020	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.590J	mg/L
Volatile Fuels	Gasoline Range Organics	0.0389J	mg/L
Volatile GC/MS	Benzene	4.60	ug/L
Client Sample ID: **MW-100**			
Lab Sample ID: 1138498021	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	25.4	mg/L
Volatile Fuels	Gasoline Range Organics	1.42	mg/L
Volatile GC/MS	1,1,1-Trichloroethane	30.8	ug/L
	1,1-Dichloroethane	10.5	ug/L
	1,2,4-Trimethylbenzene	157	ug/L
	1,3,5-Trimethylbenzene	76.3	ug/L
	4-Isopropyltoluene	9.70	ug/L
	Benzene	0.170J	ug/L
	Carbon disulfide	2.20	ug/L
	Ethylbenzene	9.65	ug/L
	Isopropylbenzene (Cumene)	6.78	ug/L
	n-Propylbenzene	13.6	ug/L
	Naphthalene	74.4	ug/L
	o-Xylene	160	ug/L
	P & M -Xylene	79.1	ug/L
	sec-Butylbenzene	7.85	ug/L
	tert-Butylbenzene	1.68	ug/L
	Toluene	0.450J	ug/L
	Trichlorofluoromethane	3.63	ug/L
	Xylenes (total)	239	ug/L
Client Sample ID: **MW-23**			
Lab Sample ID: 1138498023	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.400J	mg/L

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Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498001
Lab Project ID: 1138498

Collection Date: 09/19/13 12:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 02:15
Surrogates								
5a Androstane	81.7		50-150		%	1		09/30/13 02:15

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 02:15
Container ID: 1138498001-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 3:47:09PM

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Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498001
Lab Project ID: 1138498

Collection Date: 09/19/13 12:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 23:18
Surrogates								
4-Bromofluorobenzene	93.4		50-150		%	1		09/24/13 23:18

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 23:18
Container ID: 1138498001-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/01/2013 3:47:09PM

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Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498001
Lab Project ID: 1138498

Collection Date: 09/19/13 12:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.14		0.400	0.120	ug/L	1		09/26/13 11:03
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:03
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:03
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 11:03
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:03
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 11:03
Surrogates								
1,2-Dichloroethane-D4	95.9		70-120		%	1		09/26/13 11:03
4-Bromofluorobenzene	99.8		75-120		%	1		09/26/13 11:03
Toluene-d8	98.8		85-120		%	1		09/26/13 11:03

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 11:03
Container ID: 1138498001-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498002
Lab Project ID: 1138498

Collection Date: 09/19/13 10:54
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.613		0.612	0.184	mg/L	1		09/30/13 02:35
Surrogates								
5a Androstane	77		50-150		%	1		09/30/13 02:35

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 02:35
Container ID: 1138498002-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 980 mL
Prep Extract Vol: 1 mL

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498002
Lab Project ID: 1138498

Collection Date: 09/19/13 10:54
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0398	J	0.100	0.0310	mg/L	1		09/24/13 18:41
Surrogates								
4-Bromofluorobenzene	91.6		50-150		%	1		09/24/13 18:41

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 18:41
Container ID: 1138498002-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498002
Lab Project ID: 1138498

Collection Date: 09/19/13 10:54
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.82		0.400	0.120	ug/L	1		09/26/13 11:26
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:26
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:26
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 11:26
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:26
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 11:26
Surrogates								
1,2-Dichloroethane-D4	101		70-120		%	1		09/26/13 11:26
4-Bromofluorobenzene	106		75-120		%	1		09/26/13 11:26
Toluene-d8	99.5		85-120		%	1		09/26/13 11:26

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 11:26
Container ID: 1138498002-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-4**

Client Sample ID: **MW-4**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498003
Lab Project ID: 1138498

Collection Date: 09/19/13 14:45
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 02:56
Surrogates								
5a Androstane	69		50-150		%	1		09/30/13 02:56

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 02:56
Container ID: 1138498003-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-4**

Client Sample ID: **MW-4**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498003
Lab Project ID: 1138498

Collection Date: 09/19/13 14:45
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 18:59
Surrogates								
4-Bromofluorobenzene	91.2		50-150		%	1		09/24/13 18:59

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 18:59
Container ID: 1138498003-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-4**

Client Sample ID: **MW-4**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498003
Lab Project ID: 1138498

Collection Date: 09/19/13 14:45
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 11:49
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:49
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:49
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 11:49
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 11:49
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 11:49
Surrogates								
1,2-Dichloroethane-D4	95.9		70-120		%	1		09/26/13 11:49
4-Bromofluorobenzene	101		75-120		%	1		09/26/13 11:49
Toluene-d8	98.6		85-120		%	1		09/26/13 11:49

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 11:49
Container ID: 1138498003-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/01/2013 3:47:09PM

Results of **MW-5**

Client Sample ID: **MW-5**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498004
Lab Project ID: 1138498

Collection Date: 09/19/13 11:50
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.206	J	0.600	0.180	mg/L	1		09/30/13 03:17
Surrogates								
5a Androstane	76.6		50-150		%	1		09/30/13 03:17

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 03:17
Container ID: 1138498004-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-5**

Client Sample ID: **MW-5**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498004
Lab Project ID: 1138498

Collection Date: 09/19/13 11:50
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 19:18
Surrogates								
4-Bromofluorobenzene	93.4		50-150		%	1		09/24/13 19:18

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 19:18
Container ID: 1138498004-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-5**

Client Sample ID: **MW-5**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498004
Lab Project ID: 1138498

Collection Date: 09/19/13 11:50
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 12:13
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:13
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:13
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 12:13
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:13
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 12:13
Surrogates								
1,2-Dichloroethane-D4	99.6		70-120		%	1		09/26/13 12:13
4-Bromofluorobenzene	98.3		75-120		%	1		09/26/13 12:13
Toluene-d8	97.7		85-120		%	1		09/26/13 12:13

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 12:13
Container ID: 1138498004-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-6R**

Client Sample ID: **MW-6R**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498005
Lab Project ID: 1138498

Collection Date: 09/18/13 15:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.823		0.600	0.180	mg/L	1		09/30/13 03:37
Surrogates								
5a Androstane	65.4		50-150		%	1		09/30/13 03:37

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 03:37
Container ID: 1138498005-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-6R**

Client Sample ID: **MW-6R**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498005
Lab Project ID: 1138498

Collection Date: 09/18/13 15:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.125		0.100	0.0310	mg/L	1		09/24/13 19:36
Surrogates								
4-Bromofluorobenzene	93.3		50-150		%	1		09/24/13 19:36

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 19:36
Container ID: 1138498005-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-6R**

Client Sample ID: **MW-6R**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498005
Lab Project ID: 1138498

Collection Date: 09/18/13 15:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2,4-Trimethylbenzene	2.48		1.00	0.310	ug/L	1		09/25/13 11:42
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 11:42
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,3,5-Trimethylbenzene	1.83		1.00	0.310	ug/L	1		09/25/13 11:42
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 11:42
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 11:42
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 11:42
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
4-Isopropyltoluene	2.36		1.00	0.310	ug/L	1		09/25/13 11:42
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 11:42
Benzene	17.4		0.400	0.120	ug/L	1		09/25/13 11:42
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 11:42
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1		09/25/13 11:42
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42

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Results of **MW-6R**

Client Sample ID: **MW-6R**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498005
Lab Project ID: 1138498

Collection Date: 09/18/13 15:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 11:42
Chloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 11:42
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Ethylbenzene	0.310	J	1.00	0.310	ug/L	1		09/25/13 11:42
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Isopropylbenzene (Cumene)	0.380	J	1.00	0.310	ug/L	1		09/25/13 11:42
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 11:42
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 11:42
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Naphthalene	0.760	J	2.00	0.620	ug/L	1		09/25/13 11:42
o-Xylene	1.81		1.00	0.310	ug/L	1		09/25/13 11:42
P & M -Xylene	1.84	J	2.00	0.620	ug/L	1		09/25/13 11:42
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Toluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Trichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 11:42
Xylenes (total)	3.65		3.00	0.940	ug/L	1		09/25/13 11:42
Surrogates								
1,2-Dichloroethane-D4	107		70-120		%	1		09/25/13 11:42
4-Bromofluorobenzene	98.1		75-120		%	1		09/25/13 11:42
Toluene-d8	98		85-120		%	1		09/25/13 11:42

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Results of **MW-6R**

Client Sample ID: **MW-6R**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498005
Lab Project ID: 1138498

Collection Date: 09/18/13 15:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 11:42
Container ID: 1138498005-B

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-7**

Client Sample ID: **MW-7**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498006
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.372	U	0.619	0.186	mg/L	1		09/30/13 03:58
Surrogates								
5a Androstane	70.7		50-150		%	1		09/30/13 03:58

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 03:58
Container ID: 1138498006-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

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Results of **MW-7**

Client Sample ID: **MW-7**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498006
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 20:13
Surrogates								
4-Bromofluorobenzene	94.1		50-150		%	1		09/24/13 20:13

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 20:13
Container ID: 1138498006-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-7**

Client Sample ID: **MW-7**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498006
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 12:36
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:36
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:36
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 12:36
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:36
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 12:36
Surrogates								
1,2-Dichloroethane-D4	98		70-120		%	1		09/26/13 12:36
4-Bromofluorobenzene	98		75-120		%	1		09/26/13 12:36
Toluene-d8	99.2		85-120		%	1		09/26/13 12:36

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 12:36
Container ID: 1138498006-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498007
Lab Project ID: 1138498

Collection Date: 09/18/13 13:14
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.211	J	0.600	0.180	mg/L	1		09/30/13 04:19
Surrogates								
5a Androstane	72.4		50-150		%	1		09/30/13 04:19

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 04:19
Container ID: 1138498007-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498007
Lab Project ID: 1138498

Collection Date: 09/18/13 13:14
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 20:31
Surrogates								
4-Bromofluorobenzene	91.6		50-150		%	1		09/24/13 20:31

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 20:31
Container ID: 1138498007-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of MW-8

Client Sample ID: **MW-8**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498007
Lab Project ID: 1138498

Collection Date: 09/18/13 13:14
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 12:59
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:59
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:59
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 12:59
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 12:59
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 12:59
Surrogates								
1,2-Dichloroethane-D4	98.6		70-120		%	1		09/26/13 12:59
4-Bromofluorobenzene	101		75-120		%	1		09/26/13 12:59
Toluene-d8	102		85-120		%	1		09/26/13 12:59

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 12:59
Container ID: 1138498007-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of MW-9

Client Sample ID: **MW-9**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498008
Lab Project ID: 1138498

Collection Date: 09/19/13 10:35
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 04:39
Surrogates								
5a Androstane	70.4		50-150		%	1		09/30/13 04:39

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 04:39
Container ID: 1138498008-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-9**

Client Sample ID: **MW-9**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498008
Lab Project ID: 1138498

Collection Date: 09/19/13 10:35
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0333	J	0.100	0.0310	mg/L	1		09/24/13 20:50
Surrogates								
4-Bromofluorobenzene	92.4		50-150		%	1		09/24/13 20:50

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 20:50
Container ID: 1138498008-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-9**

Client Sample ID: **MW-9**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498008
Lab Project ID: 1138498

Collection Date: 09/19/13 10:35
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 13:23
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:23
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:23
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 13:23
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:23
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 13:23
Surrogates								
1,2-Dichloroethane-D4	103		70-120		%	1		09/26/13 13:23
4-Bromofluorobenzene	99.1		75-120		%	1		09/26/13 13:23
Toluene-d8	95.8		85-120		%	1		09/26/13 13:23

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 13:23
Container ID: 1138498008-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-10**

Client Sample ID: **MW-10**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498009
Lab Project ID: 1138498

Collection Date: 09/19/13 13:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	29.3		2.45	0.735	mg/L	4		09/30/13 10:12
Surrogates								
5a Androstane	78		50-150		%	4		09/30/13 10:12

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 10:12
Container ID: 1138498009-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 980 mL
Prep Extract Vol: 1 mL

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Results of MW-10

Client Sample ID: **MW-10**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498009
Lab Project ID: 1138498

Collection Date: 09/19/13 13:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.50		1.00	0.310	mg/L	10		09/25/13 04:31
Surrogates								
4-Bromofluorobenzene	95.7		50-150		%	10		09/25/13 04:31

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 04:31
Container ID: 1138498009-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-10**

Client Sample ID: **MW-10**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498009
Lab Project ID: 1138498

Collection Date: 09/19/13 13:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
1,1,1-Trichloroethane	35.8		1.00	0.310	ug/L	1		09/25/13 12:48
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,1-Dichloroethane	12.0		1.00	0.310	ug/L	1		09/25/13 12:48
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2,4-Trimethylbenzene	180		10.0	3.10	ug/L	10		09/25/13 16:03
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:48
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,3,5-Trimethylbenzene	90.7		10.0	3.10	ug/L	10		09/25/13 16:03
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 12:48
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:48
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:48
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
4-Isopropyltoluene	9.87		1.00	0.310	ug/L	1		09/25/13 12:48
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:48
Benzene	0.200	J	0.400	0.120	ug/L	1		09/25/13 12:48
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 12:48
Carbon disulfide	2.25		2.00	0.620	ug/L	1		09/25/13 12:48
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48

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Results of **MW-10**

Client Sample ID: **MW-10**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498009
Lab Project ID: 1138498

Collection Date: 09/19/13 13:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 12:48
Chloromethane	0.580	J	1.00	0.310	ug/L	1		09/25/13 12:48
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:48
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Ethylbenzene	10.3		1.00	0.310	ug/L	1		09/25/13 12:48
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Isopropylbenzene (Cumene)	6.83		1.00	0.310	ug/L	1		09/25/13 12:48
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 12:48
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 12:48
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
n-Propylbenzene	13.7		1.00	0.310	ug/L	1		09/25/13 12:48
Naphthalene	83.3		20.0	6.20	ug/L	10		09/25/13 16:03
o-Xylene	197		10.0	3.10	ug/L	10		09/25/13 16:03
P & M -Xylene	96.9		20.0	6.20	ug/L	10		09/25/13 16:03
sec-Butylbenzene	7.46		1.00	0.310	ug/L	1		09/25/13 12:48
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
tert-Butylbenzene	1.69		1.00	0.310	ug/L	1		09/25/13 12:48
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Toluene	0.430	J	1.00	0.310	ug/L	1		09/25/13 12:48
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Trichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Trichlorofluoromethane	4.10		1.00	0.310	ug/L	1		09/25/13 12:48
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:48
Xylenes (total)	294		30.0	9.40	ug/L	10		09/25/13 16:03
Surrogates								
1,2-Dichloroethane-D4	102		70-120		%	1		09/25/13 12:48
4-Bromofluorobenzene	101		75-120		%	1		09/25/13 12:48
Toluene-d8	100		85-120		%	1		09/25/13 12:48

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Results of **MW-10**

Client Sample ID: **MW-10**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498009
Lab Project ID: 1138498

Collection Date: 09/19/13 13:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 12:48
Container ID: 1138498009-B

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-11**

Client Sample ID: **MW-11**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498010
Lab Project ID: 1138498

Collection Date: 09/18/13 12:19
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.418	J	0.600	0.180	mg/L	1		09/30/13 05:21
Surrogates								
5a Androstane	80.6		50-150		%	1		09/30/13 05:21

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 05:21
Container ID: 1138498010-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-11**

Client Sample ID: **MW-11**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498010
Lab Project ID: 1138498

Collection Date: 09/18/13 12:19
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 21:08
Surrogates								
4-Bromofluorobenzene	93.5		50-150		%	1		09/24/13 21:08

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 21:08
Container ID: 1138498010-A

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-11**

Client Sample ID: **MW-11**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498010
Lab Project ID: 1138498

Collection Date: 09/18/13 12:19
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 13:46
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:46
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:46
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 13:46
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 13:46
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 13:46
Surrogates								
1,2-Dichloroethane-D4	104		70-120		%	1		09/26/13 13:46
4-Bromofluorobenzene	98.9		75-120		%	1		09/26/13 13:46
Toluene-d8	99.3		85-120		%	1		09/26/13 13:46

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 13:46
Container ID: 1138498010-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498011
Lab Project ID: 1138498

Collection Date: 09/17/13 14:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.376	U	0.625	0.188	mg/L	1		09/30/13 06:24
Surrogates								
5a Androstane	69.2		50-150		%	1		09/30/13 06:24

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 06:24
Container ID: 1138498011-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 960 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 3:47:09PM

Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498011
Lab Project ID: 1138498

Collection Date: 09/17/13 14:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 23:36
Surrogates								
4-Bromofluorobenzene	89.3		50-150		%	1		09/24/13 23:36

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 23:36
Container ID: 1138498011-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498011
Lab Project ID: 1138498

Collection Date: 09/17/13 14:01
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.420		0.400	0.120	ug/L	1		09/26/13 14:10
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:10
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:10
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 14:10
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:10
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 14:10
Surrogates								
1,2-Dichloroethane-D4	97.1		70-120		%	1		09/26/13 14:10
4-Bromofluorobenzene	98.5		75-120		%	1		09/26/13 14:10
Toluene-d8	102		85-120		%	1		09/26/13 14:10

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 14:10
Container ID: 1138498011-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-16**

Client Sample ID: **MW-16**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498012
Lab Project ID: 1138498

Collection Date: 09/17/13 15:26
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.449	J	0.619	0.186	mg/L	1		09/30/13 06:45
Surrogates								
5a Androstane	70.6		50-150		%	1		09/30/13 06:45

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 06:45
Container ID: 1138498012-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

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Results of **MW-16**

Client Sample ID: **MW-16**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498012
Lab Project ID: 1138498

Collection Date: 09/17/13 15:26
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/24/13 23:54
Surrogates								
4-Bromofluorobenzene	95.9		50-150		%	1		09/24/13 23:54

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/24/13 23:54
Container ID: 1138498012-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/01/2013 3:47:09PM

Results of **MW-16**

Client Sample ID: **MW-16**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498012
Lab Project ID: 1138498

Collection Date: 09/17/13 15:26
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 14:33
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:33
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:33
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 14:33
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:33
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 14:33
Surrogates								
1,2-Dichloroethane-D4	94.2		70-120		%	1		09/26/13 14:33
4-Bromofluorobenzene	105		75-120		%	1		09/26/13 14:33
Toluene-d8	98.8		85-120		%	1		09/26/13 14:33

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 14:33
Container ID: 1138498012-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-17A**

Client Sample ID: **MW-17A**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498013
Lab Project ID: 1138498

Collection Date: 09/18/13 14:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 07:06
Surrogates								
5a Androstane	70.6		50-150		%	1		09/30/13 07:06

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 07:06
Container ID: 1138498013-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-17A**

Client Sample ID: **MW-17A**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498013
Lab Project ID: 1138498

Collection Date: 09/18/13 14:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 00:13
Surrogates								
4-Bromofluorobenzene	91.9		50-150		%	1		09/25/13 00:13

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 00:13
Container ID: 1138498013-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-17A**

Client Sample ID: **MW-17A**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498013
Lab Project ID: 1138498

Collection Date: 09/18/13 14:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2,4-Trimethylbenzene	0.730	J	1.00	0.310	ug/L	1		09/25/13 15:14
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 15:14
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 15:14
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/26/13 00:44
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 15:14
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 15:14
Benzene	0.240	U	0.400	0.120	ug/L	1		09/25/13 15:14
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 15:14
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1		09/25/13 15:14
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14

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Results of **MW-17A**

Client Sample ID: **MW-17A**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498013
Lab Project ID: 1138498

Collection Date: 09/18/13 14:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 15:14
Chloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 15:14
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 15:14
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 15:14
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Naphthalene	1.24	U	2.00	0.620	ug/L	1		09/25/13 15:14
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/25/13 15:14
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Toluene	0.310	J	1.00	0.310	ug/L	1		09/25/13 15:14
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Trichloroethene	0.330	J	1.00	0.310	ug/L	1		09/25/13 15:14
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 15:14
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/25/13 15:14
Surrogates								
1,2-Dichloroethane-D4	107		70-120		%	1		09/25/13 15:14
4-Bromofluorobenzene	104		75-120		%	1		09/25/13 15:14
Toluene-d8	97.9		85-120		%	1		09/25/13 15:14

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Results of **MW-17A**

Client Sample ID: **MW-17A**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498013
Lab Project ID: 1138498

Collection Date: 09/18/13 14:34
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 15:14
Container ID: 1138498013-B

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS13772
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 00:44
Container ID: 1138498013-D

Prep Batch: VXX25240
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-17B**

Client Sample ID: **MW-17B**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498014
Lab Project ID: 1138498

Collection Date: 09/18/13 15:06
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.372	U	0.619	0.186	mg/L	1		09/30/13 07:26
Surrogates								
5a Androstane	79.9		50-150		%	1		09/30/13 07:26

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 07:26
Container ID: 1138498014-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

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Results of **MW-17B**

Client Sample ID: **MW-17B**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498014
Lab Project ID: 1138498

Collection Date: 09/18/13 15:06
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 01:08
Surrogates								
4-Bromofluorobenzene	92.6		50-150		%	1		09/25/13 01:08

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 01:08
Container ID: 1138498014-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/01/2013 3:47:09PM

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Results of **MW-17B**

Client Sample ID: **MW-17B**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498014
Lab Project ID: 1138498

Collection Date: 09/18/13 15:06
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,1-Dichloroethane	0.310	J	1.00	0.310	ug/L	1		09/25/13 12:15
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:15
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 12:15
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:15
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:15
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:15
Benzene	0.240	U	0.400	0.120	ug/L	1		09/25/13 12:15
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 12:15
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:15
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15

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Results of **MW-17B**

Client Sample ID: **MW-17B**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498014
Lab Project ID: 1138498

Collection Date: 09/18/13 15:06
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 12:15
Chloromethane	0.470	J	1.00	0.310	ug/L	1		09/25/13 12:15
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:15
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 12:15
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 12:15
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Naphthalene	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:15
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:15
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Toluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Trichloroethene	0.330	J	1.00	0.310	ug/L	1		09/25/13 12:15
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:15
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/25/13 12:15
Surrogates								
1,2-Dichloroethane-D4	108		70-120		%	1		09/25/13 12:15
4-Bromofluorobenzene	99.4		75-120		%	1		09/25/13 12:15
Toluene-d8	97.8		85-120		%	1		09/25/13 12:15

Print Date: 10/01/2013 3:47:09PM

Results of **MW-17B**

Client Sample ID: **MW-17B**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498014
Lab Project ID: 1138498

Collection Date: 09/18/13 15:06
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 12:15
Container ID: 1138498014-B

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498015
Lab Project ID: 1138498

Collection Date: 09/17/13 13:07
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 07:47
Surrogates								
5a Androstane	75.4		50-150		%	1		09/30/13 07:47

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 07:47
Container ID: 1138498015-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498015
Lab Project ID: 1138498

Collection Date: 09/17/13 13:07
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 01:27
Surrogates								
4-Bromofluorobenzene	93.9		50-150		%	1		09/25/13 01:27

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 01:27
Container ID: 1138498015-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498015
Lab Project ID: 1138498

Collection Date: 09/17/13 13:07
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 14:56
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:56
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:56
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 14:56
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 14:56
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 14:56
Surrogates								
1,2-Dichloroethane-D4	105		70-120		%	1		09/26/13 14:56
4-Bromofluorobenzene	96		75-120		%	1		09/26/13 14:56
Toluene-d8	96.7		85-120		%	1		09/26/13 14:56

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 14:56
Container ID: 1138498015-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498016
Lab Project ID: 1138498

Collection Date: 09/17/13 12:00
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 08:08
Surrogates								
5a Androstane	81.9		50-150		%	1		09/30/13 08:08

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 08:08
Container ID: 1138498016-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498016
Lab Project ID: 1138498

Collection Date: 09/17/13 12:00
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 01:45
Surrogates								
4-Bromofluorobenzene	91.5		50-150		%	1		09/25/13 01:45

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 01:45
Container ID: 1138498016-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498016
Lab Project ID: 1138498

Collection Date: 09/17/13 12:00
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 15:20
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:20
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:20
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 15:20
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:20
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 15:20
Surrogates								
1,2-Dichloroethane-D4	94.9		70-120		%	1		09/26/13 15:20
4-Bromofluorobenzene	99.4		75-120		%	1		09/26/13 15:20
Toluene-d8	97.1		85-120		%	1		09/26/13 15:20

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 15:20
Container ID: 1138498016-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-21**

Client Sample ID: **MW-21**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498017
Lab Project ID: 1138498

Collection Date: 09/18/13 11:22
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.233	J	0.600	0.180	mg/L	1		09/30/13 08:28
Surrogates								
5a Androstane	80.8		50-150		%	1		09/30/13 08:28

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 08:28
Container ID: 1138498017-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-21**

Client Sample ID: **MW-21**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498017
Lab Project ID: 1138498

Collection Date: 09/18/13 11:22
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 02:03
Surrogates								
4-Bromofluorobenzene	94.7		50-150		%	1		09/25/13 02:03

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 02:03
Container ID: 1138498017-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of MW-21

Client Sample ID: **MW-21**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498017
Lab Project ID: 1138498

Collection Date: 09/18/13 11:22
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 15:43
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:43
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:43
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 15:43
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 15:43
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 15:43
Surrogates								
1,2-Dichloroethane-D4	100		70-120		%	1		09/26/13 15:43
4-Bromofluorobenzene	99		75-120		%	1		09/26/13 15:43
Toluene-d8	97.5		85-120		%	1		09/26/13 15:43

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 15:43
Container ID: 1138498017-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498018
Lab Project ID: 1138498

Collection Date: 09/18/13 09:51
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.211	J	0.619	0.186	mg/L	1		09/30/13 08:49
Surrogates								
5a Androstane	72.4		50-150		%	1		09/30/13 08:49

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 08:49
Container ID: 1138498018-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

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Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498018
Lab Project ID: 1138498

Collection Date: 09/18/13 09:51
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 02:22
Surrogates								
4-Bromofluorobenzene	94.4		50-150		%	1		09/25/13 02:22

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 02:22
Container ID: 1138498018-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498018
Lab Project ID: 1138498

Collection Date: 09/18/13 09:51
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 16:06
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:06
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:06
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 16:06
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:06
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 16:06
Surrogates								
1,2-Dichloroethane-D4	103		70-120		%	1		09/26/13 16:06
4-Bromofluorobenzene	103		75-120		%	1		09/26/13 16:06
Toluene-d8	104		85-120		%	1		09/26/13 16:06

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 16:06
Container ID: 1138498018-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-25**

Client Sample ID: **MW-25**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498019
Lab Project ID: 1138498

Collection Date: 09/17/13 14:43
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.310	J	0.600	0.180	mg/L	1		09/30/13 09:10
Surrogates								
5a Androstane	85.3		50-150		%	1		09/30/13 09:10

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 09:10
Container ID: 1138498019-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-25**

Client Sample ID: **MW-25**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498019
Lab Project ID: 1138498

Collection Date: 09/17/13 14:43
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 02:40
Surrogates								
4-Bromofluorobenzene	91.8		50-150		%	1		09/25/13 02:40

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 02:40
Container ID: 1138498019-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-25**

Client Sample ID: **MW-25**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498019
Lab Project ID: 1138498

Collection Date: 09/17/13 14:43
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.740		0.400	0.120	ug/L	1		09/26/13 16:31
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:31
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:31
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 16:31
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:31
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 16:31
Surrogates								
1,2-Dichloroethane-D4	105		70-120		%	1		09/26/13 16:31
4-Bromofluorobenzene	101		75-120		%	1		09/26/13 16:31
Toluene-d8	99.2		85-120		%	1		09/26/13 16:31

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 16:31
Container ID: 1138498019-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/01/2013 3:47:09PM

Results of **MW-30**

Client Sample ID: **MW-30**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498020
Lab Project ID: 1138498

Collection Date: 09/19/13 10:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.590	J	0.600	0.180	mg/L	1		09/30/13 09:30
Surrogates								
5a Androstane	80.5		50-150		%	1		09/30/13 09:30

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 09:30
Container ID: 1138498020-G

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 09/28/13 10:20
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-30**

Client Sample ID: **MW-30**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498020
Lab Project ID: 1138498

Collection Date: 09/19/13 10:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0389	J	0.100	0.0310	mg/L	1		09/25/13 02:59
Surrogates								
4-Bromofluorobenzene	89.8		50-150		%	1		09/25/13 02:59

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 02:59
Container ID: 1138498020-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-30**

Client Sample ID: **MW-30**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498020
Lab Project ID: 1138498

Collection Date: 09/19/13 10:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.60		0.400	0.120	ug/L	1		09/26/13 16:54
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:54
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:54
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 16:54
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 16:54
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 16:54
Surrogates								
1,2-Dichloroethane-D4	93.9		70-120		%	1		09/26/13 16:54
4-Bromofluorobenzene	97.3		75-120		%	1		09/26/13 16:54
Toluene-d8	99.5		85-120		%	1		09/26/13 16:54

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 16:54
Container ID: 1138498020-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-100**

Client Sample ID: **MW-100**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498021
Lab Project ID: 1138498

Collection Date: 09/19/13 13:11
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	25.4		2.40	0.720	mg/L	4		09/30/13 11:35
Surrogates								
5a Androstane	81.9		50-150		%	4		09/30/13 11:35

Batch Information

Analytical Batch: XFC11098
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 11:35
Container ID: 1138498021-G

Prep Batch: XXX30048
Prep Method: SW3520C
Prep Date/Time: 09/29/13 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of **MW-100**

Client Sample ID: **MW-100**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498021
Lab Project ID: 1138498

Collection Date: 09/19/13 13:11
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.42		1.00	0.310	mg/L	10		09/25/13 04:49
Surrogates								
4-Bromofluorobenzene	91.4		50-150		%	10		09/25/13 04:49

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 04:49
Container ID: 1138498021-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-100**

Client Sample ID: **MW-100**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498021
Lab Project ID: 1138498

Collection Date: 09/19/13 13:11
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
1,1,1-Trichloroethane	30.8		1.00	0.310	ug/L	1		09/25/13 12:31
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,1-Dichloroethane	10.5		1.00	0.310	ug/L	1		09/25/13 12:31
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2,4-Trimethylbenzene	157		10.0	3.10	ug/L	10		09/25/13 15:47
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 12:31
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,3,5-Trimethylbenzene	76.3		10.0	3.10	ug/L	10		09/25/13 15:47
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 12:31
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:31
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:31
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
4-Isopropyltoluene	9.70		1.00	0.310	ug/L	1		09/25/13 12:31
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 12:31
Benzene	0.170	J	0.400	0.120	ug/L	1		09/25/13 12:31
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 12:31
Carbon disulfide	2.20		2.00	0.620	ug/L	1		09/25/13 12:31
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31

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Results of **MW-100**

Client Sample ID: **MW-100**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498021
Lab Project ID: 1138498

Collection Date: 09/19/13 13:11
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 12:31
Chloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 12:31
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Ethylbenzene	9.65		1.00	0.310	ug/L	1		09/25/13 12:31
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Isopropylbenzene (Cumene)	6.78		1.00	0.310	ug/L	1		09/25/13 12:31
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 12:31
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 12:31
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
n-Propylbenzene	13.6		1.00	0.310	ug/L	1		09/25/13 12:31
Naphthalene	74.4		20.0	6.20	ug/L	10		09/25/13 15:47
o-Xylene	160		10.0	3.10	ug/L	10		09/25/13 15:47
P & M -Xylene	79.1		20.0	6.20	ug/L	10		09/25/13 15:47
sec-Butylbenzene	7.85		1.00	0.310	ug/L	1		09/25/13 12:31
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
tert-Butylbenzene	1.68		1.00	0.310	ug/L	1		09/25/13 12:31
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Toluene	0.450	J	1.00	0.310	ug/L	1		09/25/13 12:31
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Trichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Trichlorofluoromethane	3.63		1.00	0.310	ug/L	1		09/25/13 12:31
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 12:31
Xylenes (total)	239		30.0	9.40	ug/L	10		09/25/13 15:47
Surrogates								
1,2-Dichloroethane-D4	104		70-120		%	1		09/25/13 12:31
4-Bromofluorobenzene	100		75-120		%	1		09/25/13 12:31
Toluene-d8	100		85-120		%	1		09/25/13 12:31

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Results of **MW-100**

Client Sample ID: **MW-100**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498021
Lab Project ID: 1138498

Collection Date: 09/19/13 13:11
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 12:31
Container ID: 1138498021-F

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of EB-2

Client Sample ID: **EB-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498022
Lab Project ID: 1138498

Collection Date: 09/19/13 12:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1		09/30/13 10:32
Surrogates								
5a Androstane	89.9		50-150		%	1		09/30/13 10:32

Batch Information

Analytical Batch: XFC11098
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 10:32
Container ID: 1138498022-G

Prep Batch: XXX30048
Prep Method: SW3520C
Prep Date/Time: 09/29/13 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Results of EB-2

Client Sample ID: **EB-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498022
Lab Project ID: 1138498

Collection Date: 09/19/13 12:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 03:17
Surrogates								
4-Bromofluorobenzene	92.2		50-150		%	1		09/25/13 03:17

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 03:17
Container ID: 1138498022-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **EB-2**

Client Sample ID: **EB-2**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498022
Lab Project ID: 1138498

Collection Date: 09/19/13 12:44
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 17:17
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:17
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:17
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 17:17
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:17
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 17:17
Surrogates								
1,2-Dichloroethane-D4	97.4		70-120		%	1		09/26/13 17:17
4-Bromofluorobenzene	98		75-120		%	1		09/26/13 17:17
Toluene-d8	99.3		85-120		%	1		09/26/13 17:17

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 17:17
Container ID: 1138498022-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-23**

Client Sample ID: **MW-23**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498023
Lab Project ID: 1138498

Collection Date: 09/20/13 11:21
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.400	J	0.612	0.184	mg/L	1		09/30/13 10:53
Surrogates								
5a Androstane	77.4		50-150		%	1		09/30/13 10:53

Batch Information

Analytical Batch: XFC11098
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/30/13 10:53
Container ID: 1138498023-G

Prep Batch: XXX30048
Prep Method: SW3520C
Prep Date/Time: 09/29/13 09:50
Prep Initial Wt./Vol.: 980 mL
Prep Extract Vol: 1 mL

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Results of MW-23

Client Sample ID: **MW-23**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498023
Lab Project ID: 1138498

Collection Date: 09/20/13 11:21
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 03:36
Surrogates								
4-Bromofluorobenzene	91.1		50-150		%	1		09/25/13 03:36

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 03:36
Container ID: 1138498023-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-23**

Client Sample ID: **MW-23**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498023
Lab Project ID: 1138498

Collection Date: 09/20/13 11:21
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.240	U	0.400	0.120	ug/L	1		09/26/13 17:41
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:41
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:41
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/26/13 17:41
Toluene	0.620	U	1.00	0.310	ug/L	1		09/26/13 17:41
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/26/13 17:41
Surrogates								
1,2-Dichloroethane-D4	103		70-120		%	1		09/26/13 17:41
4-Bromofluorobenzene	99.3		75-120		%	1		09/26/13 17:41
Toluene-d8	100		85-120		%	1		09/26/13 17:41

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/26/13 17:41
Container ID: 1138498023-B

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 09/26/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank - GRO**

Client Sample ID: **Trip Blank - GRO**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498024
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1		09/25/13 04:13
Surrogates								
4-Bromofluorobenzene	92		50-150		%	1		09/25/13 04:13

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/25/13 04:13
Container ID: 1138498024-A

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 09/24/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank - VOC**

Client Sample ID: **Trip Blank - VOC**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498025
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1		09/25/13 10:05
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1		09/25/13 10:05
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 10:05
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
2-Hexanone	6.20	U	10.0	3.10	ug/L	1		09/25/13 10:05
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1		09/25/13 10:05
Benzene	0.240	U	0.400	0.120	ug/L	1		09/25/13 10:05
Bromobenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
Bromoform	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Bromomethane	1.88	U	3.00	0.940	ug/L	1		09/25/13 10:05
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1		09/25/13 10:05
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05

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Results of **Trip Blank - VOC**

Client Sample ID: **Trip Blank - VOC**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498025
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Chloroform	0.600	U	1.00	0.300	ug/L	1		09/25/13 10:05
Chloromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1		09/25/13 10:05
Dibromomethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1		09/25/13 10:05
Methylene chloride	2.00	U	5.00	1.00	ug/L	1		09/25/13 10:05
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Naphthalene	1.24	U	2.00	0.620	ug/L	1		09/25/13 10:05
o-Xylene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1		09/25/13 10:05
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Styrene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Toluene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Trichloroethene	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1		09/25/13 10:05
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1		09/25/13 10:05
Surrogates								
1,2-Dichloroethane-D4	107		70-120		%	1		09/25/13 10:05
4-Bromofluorobenzene	98.8		75-120		%	1		09/25/13 10:05
Toluene-d8	98.5		85-120		%	1		09/25/13 10:05

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Results of **Trip Blank - VOC**

Client Sample ID: **Trip Blank - VOC**
Client Project ID: **1661-002 FHRA Terminal**
Lab Sample ID: 1138498025
Lab Project ID: 1138498

Collection Date: 09/17/13 10:41
Received Date: 09/24/13 08:40
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Analyst: HM
Analytical Date/Time: 09/25/13 10:05
Container ID: 1138498025-F

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 09/25/13 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486170 [VXX/25235]
Blank Lab ID: 1180706

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498002, 1138498003, 1138498004, 1138498005, 1138498006, 1138498007, 1138498008, 1138498010

Results by AK101

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0620U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene	88.8	50-150		%

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 9/24/2013 9:16:00AM

Prep Batch: VXX25235
Prep Method: SW5030B
Prep Date/Time: 9/24/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25235]
Blank Spike Lab ID: 1180709
Date Analyzed: 09/24/2013 10:11

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25235]
Spike Duplicate Lab ID: 1180710
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498002, 1138498003, 1138498004, 1138498005, 1138498006, 1138498007, 1138498008, 1138498010

Results by AK101

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.950	95	1.00	0.958	96	(60-120)	0.83	(< 20)
Surrogates									
4-Bromofluorobenzene	0.0500	93.2	93	0.0500	93.7	94	(50-150)	0.49	

Batch Information

Analytical Batch: **VFC11647**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX25235**
Prep Method: **SW5030B**
Prep Date/Time: **09/24/2013 08:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486172 [VXX/25236]
Blank Lab ID: 1180711

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498001, 1138498009, 1138498011, 1138498012, 1138498013, 1138498014, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020, 1138498021, 1138498022, 1138498023, 1138498024

Results by AK101

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0620U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene	91.4	50-150		%

Batch Information

Analytical Batch: VFC11647
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 9/24/2013 10:59:00PM

Prep Batch: VXX25236
Prep Method: SW5030B
Prep Date/Time: 9/24/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25236]
Blank Spike Lab ID: 1180712
Date Analyzed: 09/25/2013 00:50

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25236]
Spike Duplicate Lab ID: 1180713
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498001, 1138498009, 1138498011, 1138498012, 1138498013, 1138498014, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020, 1138498021, 1138498022, 1138498023, 1138498024

Results by AK101

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.924	92	1.00	0.917	92	(60-120)	0.77	(< 20)
Surrogates									
4-Bromofluorobenzene	0.0500	95.7	96	0.0500	94.3	94	(50-150)	1.40	

Batch Information

Analytical Batch: **VFC11647**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX25236**
Prep Method: **SW5030B**
Prep Date/Time: **09/24/2013 08:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486197 [VXX/25238]
Blank Lab ID: 1181031

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.300U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.620U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.300U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.620U	1.00	0.310	ug/L
1,1-Dichloroethane	0.620U	1.00	0.310	ug/L
1,1-Dichloroethene	0.620U	1.00	0.310	ug/L
1,1-Dichloropropene	0.620U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.620U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.620U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.620U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.620U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	1.24U	2.00	0.620	ug/L
1,2-Dibromoethane	0.620U	1.00	0.310	ug/L
1,2-Dichlorobenzene	0.620U	1.00	0.310	ug/L
1,2-Dichloroethane	0.300U	0.500	0.150	ug/L
1,2-Dichloropropane	0.620U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.620U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.620U	1.00	0.310	ug/L
1,3-Dichloropropane	0.240U	0.400	0.120	ug/L
1,4-Dichlorobenzene	0.300U	0.500	0.150	ug/L
2,2-Dichloropropane	0.620U	1.00	0.310	ug/L
2-Butanone (MEK)	6.20U	10.0	3.10	ug/L
2-Chlorotoluene	0.620U	1.00	0.310	ug/L
2-Hexanone	6.20U	10.0	3.10	ug/L
4-Chlorotoluene	0.620U	1.00	0.310	ug/L
4-Isopropyltoluene	0.620U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	6.20U	10.0	3.10	ug/L
Benzene	0.240U	0.400	0.120	ug/L
Bromobenzene	0.620U	1.00	0.310	ug/L
Bromochloromethane	0.620U	1.00	0.310	ug/L
Bromodichloromethane	0.300U	0.500	0.150	ug/L
Bromoform	0.620U	1.00	0.310	ug/L
Bromomethane	1.88U	3.00	0.940	ug/L
Carbon disulfide	1.24U	2.00	0.620	ug/L
Carbon tetrachloride	0.620U	1.00	0.310	ug/L
Chlorobenzene	0.300U	0.500	0.150	ug/L
Chloroethane	0.620U	1.00	0.310	ug/L
Chloroform	0.600U	1.00	0.300	ug/L

Method Blank

Blank ID: MB for HBN 1486197 [VXX/25238]
Blank Lab ID: 1181031

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.620U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.620U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.300U	0.500	0.150	ug/L
Dibromochloromethane	0.300U	0.500	0.150	ug/L
Dibromomethane	0.620U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.620U	1.00	0.310	ug/L
Ethylbenzene	0.620U	1.00	0.310	ug/L
Hexachlorobutadiene	0.620U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.620U	1.00	0.310	ug/L
Methylene chloride	2.00U	5.00	1.00	ug/L
Methyl-t-butyl ether	3.00U	5.00	1.50	ug/L
Naphthalene	1.24U	2.00	0.620	ug/L
n-Butylbenzene	0.620U	1.00	0.310	ug/L
n-Propylbenzene	0.620U	1.00	0.310	ug/L
o-Xylene	0.620U	1.00	0.310	ug/L
P & M -Xylene	1.24U	2.00	0.620	ug/L
sec-Butylbenzene	0.620U	1.00	0.310	ug/L
Styrene	0.620U	1.00	0.310	ug/L
tert-Butylbenzene	0.620U	1.00	0.310	ug/L
Tetrachloroethene	0.620U	1.00	0.310	ug/L
Toluene	0.620U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.620U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.620U	1.00	0.310	ug/L
Trichloroethene	0.620U	1.00	0.310	ug/L
Trichlorofluoromethane	0.620U	1.00	0.310	ug/L
Vinyl chloride	0.620U	1.00	0.310	ug/L
Xylenes (total)	1.88U	3.00	0.940	ug/L
Surrogates				
1,2-Dichloroethane-D4	109	70-120		%
4-Bromofluorobenzene	97.1	75-120		%
Toluene-d8	98.5	85-120		%

Method Blank

Blank ID: MB for HBN 1486197 [VXX/25238]
Blank Lab ID: 1181031

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Instrument: VPA 780/5975 GC/MS
Analyst: HM
Analytical Date/Time: 9/25/2013 8:27:01AM

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 9/25/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Leaching Blank

Blank ID: LB for HBN 1486111 [TCLP/7020]
Blank Lab ID: 1180561

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	124U	200	62.0	ug/L
1,2-Dichloroethane	60.0U	100	30.0	ug/L
1,4-Dichlorobenzene	60.0U	100	30.0	ug/L
2-Butanone (MEK)	1240U	2000	620	ug/L
Benzene	48.0U	80.0	24.0	ug/L
Carbon tetrachloride	124U	200	62.0	ug/L
Chlorobenzene	60.0U	100	30.0	ug/L
Chloroform	120U	200	60.0	ug/L
Hexachlorobutadiene	124U	200	62.0	ug/L
Tetrachloroethene	124U	200	62.0	ug/L
Trichloroethene	124U	200	62.0	ug/L
Vinyl chloride	124U	200	62.0	ug/L
Surrogates				
1,2-Dichloroethane-D4	107	70-120		%
4-Bromofluorobenzene	101	75-120		%
Toluene-d8	98.4	85-120		%

Batch Information

Analytical Batch: VMS13771
Analytical Method: SW8260B
Instrument: VPA 780/5975 GC/MS
Analyst: HM
Analytical Date/Time: 9/25/2013 1:36:00PM

Prep Batch: VXX25238
Prep Method: SW5030B
Prep Date/Time: 9/25/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25238]
Blank Spike Lab ID: 1181032
Date Analyzed: 09/25/2013 08:43

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25238]
Spike Duplicate Lab ID: 1181033
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	32.3	108	30	31.9	106	(80-130)	1.40	(< 20)
1,1,1-Trichloroethane	30	33.6	112	30	32.4	108	(65-130)	3.60	(< 20)
1,1,2,2-Tetrachloroethane	30	31.8	106	30	31.0	103	(65-130)	2.40	(< 20)
1,1,2-Trichloroethane	30	31.9	106	30	31.8	106	(75-125)	0.28	(< 20)
1,1-Dichloroethane	30	32.1	107	30	31.3	104	(70-135)	2.60	(< 20)
1,1-Dichloroethene	30	31.4	105	30	30.4	101	(70-130)	3.30	(< 20)
1,1-Dichloropropene	30	30.0	100	30	29.1	97	(75-130)	3.20	(< 20)
1,2,3-Trichlorobenzene	30	31.8	106	30	31.3	104	(55-140)	1.60	(< 20)
1,2,3-Trichloropropane	30	31.8	106	30	31.1	104	(75-125)	2.40	(< 20)
1,2,4-Trichlorobenzene	30	31.5	105	30	31.0	103	(65-135)	1.40	(< 20)
1,2,4-Trimethylbenzene	30	28.7	96	30	28.2	94	(75-130)	1.70	(< 20)
1,2-Dibromo-3-chloropropane	30	32.6	109	30	31.8	106	(50-130)	2.50	(< 20)
1,2-Dibromoethane	30	32.1	107	30	32.1	107	(80-120)	0.03	(< 20)
1,2-Dichlorobenzene	30	30.7	102	30	30.2	101	(70-120)	1.30	(< 20)
1,2-Dichloroethane	30	31.1	104	30	30.9	103	(70-130)	0.84	(< 20)
1,2-Dichloropropane	30	31.8	106	30	31.3	104	(75-125)	1.70	(< 20)
1,3,5-Trimethylbenzene	30	28.7	96	30	28.0	94	(75-130)	2.20	(< 20)
1,3-Dichlorobenzene	30	31.2	104	30	30.5	102	(75-125)	2.20	(< 20)
1,3-Dichloropropane	30	32.2	107	30	32.1	107	(75-125)	0.31	(< 20)
1,4-Dichlorobenzene	30	31.3	104	30	31.1	104	(75-125)	0.80	(< 20)
2,2-Dichloropropane	30	33.0	110	30	31.9	106	(70-135)	3.20	(< 20)
2-Butanone (MEK)	90	111	123	90	106	118	(30-150)	4.90	(< 20)
2-Chlorotoluene	30	32.1	107	30	31.4	105	(75-125)	2.00	(< 20)
2-Hexanone	90	104	115	90	102	113	(55-130)	2.20	(< 20)
4-Chlorotoluene	30	33.1	110	30	32.3	108	(75-130)	2.40	(< 20)
4-Isopropyltoluene	30	28.7	96	30	28.0	93	(75-130)	2.60	(< 20)
4-Methyl-2-pentanone (MIBK)	90	99.7	111	90	97.4	108	(60-135)	2.30	(< 20)
Benzene	30	32.6	109	30	31.6	105	(80-120)	3.20	(< 20)
Bromobenzene	30	30.9	103	30	30.6	102	(75-125)	1.00	(< 20)
Bromochloromethane	30	31.1	104	30	30.7	102	(65-130)	1.40	(< 20)
Bromodichloromethane	30	31.1	104	30	30.6	102	(75-120)	1.70	(< 20)
Bromoform	30	31.9	106	30	31.8	106	(70-130)	0.25	(< 20)
Bromomethane	30	27.4	91	30	29.4	98	(30-145)	6.90	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25238]
Blank Spike Lab ID: 1181032
Date Analyzed: 09/25/2013 08:43

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25238]
Spike Duplicate Lab ID: 1181033
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon disulfide	45	50.5	112	45	48.6	108	(35-160)	3.80	(< 20)
Carbon tetrachloride	30	30.3	101	30	29.2	97	(65-140)	3.70	(< 20)
Chlorobenzene	30	31.9	106	30	31.7	106	(80-120)	0.60	(< 20)
Chloroethane	30	25.1	84	30	28.3	94	(60-135)	12.10	(< 20)
Chloroform	30	30.6	102	30	29.8	99	(65-135)	2.60	(< 20)
Chloromethane	30	29.6	99	30	31.4	105	(40-125)	5.90	(< 20)
cis-1,2-Dichloroethene	30	30.4	101	30	29.9	100	(70-125)	1.70	(< 20)
cis-1,3-Dichloropropene	30	31.8	106	30	31.5	105	(70-130)	0.88	(< 20)
Dibromochloromethane	30	31.9	106	30	31.8	106	(60-135)	0.38	(< 20)
Dibromomethane	30	29.5	98	30	29.2	97	(75-125)	0.95	(< 20)
Dichlorodifluoromethane	30	32.8	109	30	31.3	104	(30-155)	4.50	(< 20)
Ethylbenzene	30	29.8	99	30	29.1	97	(75-125)	2.40	(< 20)
Hexachlorobutadiene	30	33.5	112	30	32.9	110	(50-140)	2.00	(< 20)
Isopropylbenzene (Cumene)	30	28.7	96	30	28.4	95	(75-125)	0.95	(< 20)
Methyl-t-butyl ether	45	47.7	106	45	47.4	105	(65-125)	0.53	(< 20)
Methylene chloride	30	31.5	105	30	30.8	103	(55-140)	2.10	(< 20)
n-Butylbenzene	30	28.9	96	30	28.0	93	(70-135)	3.40	(< 20)
n-Propylbenzene	30	29.0	97	30	28.4	95	(70-130)	2.00	(< 20)
Naphthalene	30	28.5	95	30	28.3	94	(55-140)	0.63	(< 20)
o-Xylene	30	29.0	97	30	28.7	96	(80-120)	0.97	(< 20)
P & M -Xylene	60	58.9	98	60	57.8	96	(75-130)	2.00	(< 20)
sec-Butylbenzene	30	28.6	95	30	28.2	94	(70-125)	1.50	(< 20)
Styrene	30	29.0	97	30	28.7	96	(65-135)	1.30	(< 20)
tert-Butylbenzene	30	28.1	94	30	27.8	93	(70-130)	1.30	(< 20)
Tetrachloroethene	30	32.1	107	30	31.2	104	(45-150)	2.60	(< 20)
Toluene	30	32.4	108	30	31.9	106	(75-120)	1.60	(< 20)
trans-1,2-Dichloroethene	30	32.8	109	30	31.9	106	(60-140)	2.90	(< 20)
trans-1,3-Dichloropropene	30	32.7	109	30	32.8	109	(55-140)	0.15	(< 20)
Trichloroethene	30	32.7	109	30	31.8	106	(70-125)	2.90	(< 20)
Trichlorofluoromethane	30	32.2	107	30	30.5	102	(60-145)	5.60	(< 20)
Vinyl chloride	30	31.9	106	30	30.7	102	(50-145)	3.60	(< 20)
Xylenes (total)	90	87.9	98	90	86.5	96	(80-120)	1.60	(< 20)

Surrogates

Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25238]
Blank Spike Lab ID: 1181032
Date Analyzed: 09/25/2013 08:43

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25238]
Spike Duplicate Lab ID: 1181033
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498005, 1138498009, 1138498013, 1138498014, 1138498021, 1138498025

Results by SW8260B

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2-Dichloroethane-D4	30	97.3	97	30	97.5	98	(70-120)	0.17	
4-Bromofluorobenzene	30	98.3	98	30	98.8	99	(75-120)	0.51	
Toluene-d8	30	99.8	100	30	100	100	(85-120)	0.47	

Batch Information

Analytical Batch: **VMS13771**
Analytical Method: **SW8260B**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **HM**

Prep Batch: **VXX25238**
Prep Method: **SW5030B**
Prep Date/Time: **09/25/2013 08:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486369 [VXX/25240]
Blank Lab ID: 1181159

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498013

Results by SW8260B

Parameter	Results	LOQ/CL	DL	Units
2-Butanone (MEK)	6.20U	10.0	3.10	ug/L
Surrogates				
1,2-Dichloroethane-D4	98.9	70-120		%
4-Bromofluorobenzene	99.2	75-120		%
Toluene-d8	100	85-120		%

Batch Information

Analytical Batch: VMS13772
Analytical Method: SW8260B
Instrument: HP 5890 Series II MS1 VJA
Analyst: HM
Analytical Date/Time: 9/25/2013 3:00:01PM

Prep Batch: VXX25240
Prep Method: SW5030B
Prep Date/Time: 9/25/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25240]
Blank Spike Lab ID: 1181160
Date Analyzed: 09/25/2013 15:23

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25240]
Spike Duplicate Lab ID: 1181161
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498013

Results by SW8260B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
2-Butanone (MEK)	90	89.3	99	90	101	113	(30-150)	12.60	(< 20)
Surrogates									
1,2-Dichloroethane-D4	30	99.6	100	30	98.5	99	(70-120)	1.10	
4-Bromofluorobenzene	30	97.8	98	30	103	103	(75-120)	4.70	
Toluene-d8	30	97.2	97	30	102	102	(85-120)	4.70	

Batch Information

Analytical Batch: **VMS13772**
Analytical Method: **SW8260B**
Instrument: **HP 5890 Series II MS1 VJA**
Analyst: **HM**

Prep Batch: **VXX25240**
Prep Method: **SW5030B**
Prep Date/Time: **09/25/2013 08:00**
Spike Init Wt./Vol.: 90 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 90 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486439 [VXX/25244]
Blank Lab ID: 1181440

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498001, 1138498002, 1138498003, 1138498004, 1138498006, 1138498007, 1138498008, 1138498010, 1138498011, 1138498012, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020, 1138498022, 1138498023

Results by SW8260B

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.240U	0.400	0.120	ug/L
Ethylbenzene	0.620U	1.00	0.310	ug/L
o-Xylene	0.620U	1.00	0.310	ug/L
P & M -Xylene	1.24U	2.00	0.620	ug/L
Toluene	0.620U	1.00	0.310	ug/L
Xylenes (total)	1.88U	3.00	0.940	ug/L
Surrogates				
1,2-Dichloroethane-D4	102	70-120		%
4-Bromofluorobenzene	102	75-120		%
Toluene-d8	103	85-120		%

Batch Information

Analytical Batch: VMS13773
Analytical Method: SW8260B
Instrument: HP 5890 Series II MS1 VJA
Analyst: HM
Analytical Date/Time: 9/26/2013 8:43:01AM

Prep Batch: VXX25244
Prep Method: SW5030B
Prep Date/Time: 9/26/2013 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [VXX25244]
Blank Spike Lab ID: 1181441
Date Analyzed: 09/26/2013 09:07

Spike Duplicate ID: LCSD for HBN 1138498 [VXX25244]
Spike Duplicate Lab ID: 1181442
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498001, 1138498002, 1138498003, 1138498004, 1138498006, 1138498007, 1138498008, 1138498010, 1138498011, 1138498012, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020, 1138498022, 1138498023

Results by SW8260B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	29.9	100	30	29.5	98	(80-120)	1.10	(< 20)
Ethylbenzene	30	29.7	99	30	29.4	98	(75-125)	0.95	(< 20)
o-Xylene	30	30.5	102	30	29.6	99	(80-120)	2.70	(< 20)
P & M -Xylene	60	60.0	100	60	59.1	99	(75-130)	1.50	(< 20)
Toluene	30	29.6	99	30	29.0	97	(75-120)	2.10	(< 20)
Xylenes (total)	90	90.4	100	90	88.7	99	(80-120)	1.90	(< 20)
Surrogates									
1,2-Dichloroethane-D4	30	101	101	30	93.8	94	(70-120)	7.10	
4-Bromofluorobenzene	30	101	101	30	98.4	98	(75-120)	2.10	
Toluene-d8	30	102	102	30	99.3	99	(85-120)	2.90	

Batch Information

Analytical Batch: **VMS13773**
Analytical Method: **SW8260B**
Instrument: **HP 5890 Series II MS1 VJA**
Analyst: **HM**

Prep Batch: **VXX25244**
Prep Method: **SW5030B**
Prep Date/Time: **09/26/2013 08:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1486670 [XXX/30038]
Blank Lab ID: 1181788

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498001, 1138498002, 1138498003, 1138498004, 1138498005, 1138498006, 1138498007, 1138498008, 1138498009, 1138498010, 1138498011, 1138498012, 1138498013, 1138498014, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.360U	0.600	0.180	mg/L
Surrogates				
5a Androstane	90.8	60-120		%

Batch Information

Analytical Batch: XFC11099
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: EAB
Analytical Date/Time: 9/30/2013 1:13:00AM

Prep Batch: XXX30038
Prep Method: SW3520C
Prep Date/Time: 9/28/2013 10:20:00AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [XXX30038]
Blank Spike Lab ID: 1181789
Date Analyzed: 09/30/2013 01:33

Spike Duplicate ID: LCSD for HBN 1138498 [XXX30038]
Spike Duplicate Lab ID: 1181790
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498001, 1138498002, 1138498003, 1138498004, 1138498005, 1138498006, 1138498007, 1138498008, 1138498009, 1138498010, 1138498011, 1138498012, 1138498013, 1138498014, 1138498015, 1138498016, 1138498017, 1138498018, 1138498019, 1138498020

Results by AK102

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	5	4.78	96	5	4.58	92	(75-125)	4.30	(< 20)
Surrogates									
5a Androstane	0.1	84.5	85	0.1	83.4	83	(60-120)	1.30	

Batch Information

Analytical Batch: **XFC11099**
Analytical Method: **AK102**
Instrument: **HP 7890A FID SV E F**
Analyst: **EAB**

Prep Batch: **XXX30038**
Prep Method: **SW3520C**
Prep Date/Time: **09/28/2013 10:20**
Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1486763 [XXX/30048]
Blank Lab ID: 1181864

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138498021, 1138498022, 1138498023

Results by AK102

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.360U	0.600	0.180	mg/L
Surrogates				
5a Androstane	99.4	60-120		%

Batch Information

Analytical Batch: XFC11098
Analytical Method: AK102
Instrument: HP 7890A FID SV E R
Analyst: EAB
Analytical Date/Time: 9/30/2013 2:56:00AM

Prep Batch: XXX30048
Prep Method: SW3520C
Prep Date/Time: 9/29/2013 9:50:00AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1138498 [XXX30048]
Blank Spike Lab ID: 1181865
Date Analyzed: 09/30/2013 03:17

Spike Duplicate ID: LCSD for HBN 1138498 [XXX30048]
Spike Duplicate Lab ID: 1181866
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138498021, 1138498022, 1138498023

Results by AK102

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	5	4.55	91	5	5.14	103	(75-125)	12.00	(< 20)
Surrogates									
5a Androstane	0.1	86	86	0.1	95.4	95	(60-120)	10.40	

Batch Information

Analytical Batch: **XFC11098**
Analytical Method: **AK102**
Instrument: **HP 7890A FID SV E R**
Analyst: **EAB**

Prep Batch: **XXX30048**
Prep Method: **SW3520C**
Prep Date/Time: **09/29/2013 09:50**
Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL

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1138498

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Geotechnical and Environmental Consultants

CHAIN OF CUSTODY RECORD

Page 1 of 3

Laboratory SGS
Attn: Jen

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800

Analysis Parameters/Sample Container Description
(include preservative if used)

	Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	BTEX (HCl) 8260	GRO (HCl) 101	DRO (HCl) 102	VOC (HCl) 8260			Total Number of Containers	Remarks/Matrix
✓	MW-2	1 A-H	1234	9/19/13		X	X	X	X				8	Groundwater
✓	MW-3	2 A-H	1054	9/19/13		X	X	X	X				8	
✓	MW-4	3 A-H	~~1347~~ 1344	9/19/13		X	X	X	X				8	
✓	MW-5	4 A-H	1150	9/19/13		X	X	X	X				8	
✓	MW-6R	5 A-H	1544	9/18/13		X		X	X	X			8	
✓	MW-7	6 A-H	1041	9/17/13		X	X	X	X				8	
✓	MW-8	7 A-H	1314	9/18/13		X	X	X	X				8	
✓	MW-9	8 A-H	1035	9/19/13		X	X	X	X				8	
✓	MW-10	9 A-H	1301	9/19/13		X		X	X	X			8	
✓	MW-11	10 A-H	1219	9/18/13		X	X	X	X				8	

Project Information		Sample Receipt	
Project Number: 1661-002		Total Number of Containers	188
Project Name: FHRA Terminal		COC Seals/Intact? Y/N/NA	NA
Contact: Kristen Freiburger		Received Good Cond./Cold	
Ongoing Project? Yes ☒ No ☐		Delivery Method: Hand (attach shipping bill, if any)	
Sampler: ELB/MXJ			

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Michael Jaramillo Time: 1302	Signature: Jen D Time: 1330	Signature: Time:
Printed Name: Michael Jaramillo Date: 9/23/13	Printed Name: Jen D Date: 9-23-13	Printed Name: Date:
Company: SWI	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1302	Signature: Time:	Signature: Time: 8:40
Printed Name: Jen Dawkins Date: 9-23-13	Printed Name: Date:	Printed Name: Stephanie Charley Date: 9/24/13
Company: SGS	Company:	Company: SGS

Instructions

Requested Turnaround Time: Standard

Special Instructions:

Bill FHRA PO 21846

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

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TB1 = 1.8°C TB2 = 1.5°C TB3 = 5.8°C TB4 = 5.5°C TB5 = 0.4°C TB6 = 1.1°C

No. 31757

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400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

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(907) 479-0600

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

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Anchorage, AK 99518
(907) 561-2120

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Denver, Co 80202
(303) 825-3800

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

CHAIN :CORD

Laboratory: SGS
Attn: Jen

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	BTEX (HCl) 8260	GRO (HCl) 101	DRO (HCl) 102	VOC (HCl) 8260			Total Number of Containers	Remarks/Matrix
ELB ~~MW-12~~ MW-15	11 A-H	1401	9/17/13		X	X	X	X				8	Groundwater
~~MW-13~~ MW-16	12 A-H	1526	9/17/13		X	X	X	X				8	
MW-17A	13 A-G	1434	9/18/13		X		X	X	X			8	
MW-17B	14 A-H	1506	9/18/13		X		X	X	X			8	
MW-19	15 A-H	1307	9/17/13		X	X	X	X				8	
MW-20	16 A-H	1200	9/17/13		X	X	X	X				8	
MW-21	17 A-H	1122	9/18/13		X	X	X	X				8	
MW-22	18 A-H	0951	9/18/13		X	X	X	X				8	
MW-25	19 A-H	1443	9/17/13		X	X	X	X				8	
MW-30	20 A-G	1044	9/19/13		X	X	X	X				8	✓

Project Information	Sample Receipt	
Project Number: 1661-002	Total Number of Containers	80
Project Name: FHWA Terminal	COC Seals/Intact? Y/N/NA	NA
Contact: Kristen Freiburger	Received Good Cond./Cold	
Ongoing Project? Yes ☒ No ☐	Delivery Method: Hand	
Sampler: ELB | MXJ	(attach shipping bill, if any)	

Instructions
Requested Turnaround Time: Standard
Special Instructions:
Bill FHWA PO 21846

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1302	Signature: Time: 1310	Signature: Time:
Printed Name: Michael Jovanelli Date: 9/23/13	Printed Name: Jen D Date: 9-23-13	Printed Name: Date:
Company: SWI	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1302	Signature: Time:	Signature: Time: 8:40
Printed Name: Jen Dawkins Date: 9-23-13	Printed Name: Date:	Printed Name: Stephanie Charley Date: 9/24/13
Company: SGS	Company:	Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 31756

1138498

SHANNON & WILSON, INC. — CHAIN OF CUSTODY RECORD

Geotechnical and Environmental Consultants

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(206) 632-8020

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

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(503) 223-6147

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St. Louis, MO 63146-3564
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5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

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Richland, WA 99352
(509) 946-6309

Laboratory SGS Page 3 of 3
Attn: Jen

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	BTEX (HCl) 8260	GRO (HCl) 101	DRO (HCl) 102	VOC (HCl) 8260			Total Number of Containers	Remarks/Matrix
MW-100	MXJ 9/20 (21) A-H	1311	9/19/13		X		X	X	X			8	Ground Water
EB-2	(22) A-H	1244	9/19/13		X	X	X	X				8	↓
MW-23	(23) A-H	1121	9/20/13		X	X	X	X				8	↓
Trip Blank-GRO	(24) A-F						X					2	
Trip Blank-VOC	(25) A-F								X			2	

Project Information		Sample Receipt	
Project Number: 1661-002		Total Number of Containers	5 of 5
Project Name: FHRA Terminal		COC Seals/Intact? Y/N/NA	NA
Contact: Kristen Freiburger		Received Good Cond./Cold	
Ongoing Project? Yes ☒ No ☐		Delivery Method:	HAND
Sampler: ELB / MXJ		(attach shipping bill, if any)	

Instructions
Requested Turnaround Time: Standard
Special Instructions: Bill FHRA PO 21846

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 1302	Signature: Time: 1370	Signature: Time:
Printed Name: Michael Jovanelli Date: 9/23/13	Printed Name: Date: 9.23.13	Printed Name: Date:
Company: SNI	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1302	Signature: Time:	Signature: Time: 8:40
Printed Name: Date: 9-23-13	Printed Name: Date:	Printed Name: Date: 9/24/13
Company: SGS	Company:	Company: SGS

F-19-91/UR

No. 31765

SGS

1138498

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	Yes No (N/A) (Yes) No N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? ** Note: Exemption permitted for chilled samples collected less than 8 hours ago.* Cooler ID: 1 @ 1.8 w/ Therm.ID: 200 Cooler ID: 2 @ 1.5 w/ Therm.ID: IR#011 Cooler ID: 3 @ 5.8 w/ Therm.ID: 200 Cooler ID: 4 @ 5.5 w/ Therm.ID: IR#011 Cooler ID: 5 @ 0.4 w/ Therm.ID: 200 *Note: If non-compliant, use form FS-0029 to document affected samples/analyses.* If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & **"COOLER TEMP"** will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." **If temperature(s) <0°C, were all sample containers ice free?**	(Yes) No N/A 6 = 1.7°C ID4 Yes No (N/A)	
Delivery method (specify all that apply): (Client) USPS Alert Courier C&D Delivery AK Air Lynden Carlile ERA PenAir FedEx UPS NAC Other: → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	Note ABN/ tracking # See Attached or N/A Yes No (N/A)	
→ For samples received with payment, note amount ($) and cash / check / CC **(circle one)** or note: → For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed.	SRF Initiated by: JJ (N/A) N/A	
Were samples received within hold time? *Note: Refer to form F-083 "Sample Guide" for hold time information.* Do samples **match COC*** (i.e., sample IDs, dates/times collected)? ** Note: Exemption permitted if times differ <1hr; in which case, use times on COC.* Were analyses requested unambiguous?	(Yes) No N/A (Yes) No N/A (Yes) No N/A	
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:	(Yes) (No) N/A SLC 9/24/13	see below
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	(Yes) No N/A Yes No (N/A)	
Were **proper containers** (type/mass/volume/preservative*) used? ** Note: Exemption permitted for waters to be analyzed for metals.* Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	(Yes) No N/A (Yes) No N/A	
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No (N/A)	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)?	(Yes) No N/A Yes No (N/A)	
For **RUSH/SHORT Hold Time**, were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No (N/A)	
For **SITE-SPECIFIC QC, e.g. BMS/BMSD/BDUP**, were containers / paperwork flagged accordingly?	Yes No (N/A)	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No (N/A)	SRF Completed by: SLC 9/24/13 PM = N/A
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	Yes No (N/A)	Peer Reviewed by: N/A

Additional notes (if applicable):

*Note earliest collection date is 9-17-13.

Sample MW17-A, one of the VOA vials for GRO, the bottom broke and all of the sample was lost. The rest of the vials are marked as limited volume

Note to Client: *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

Sample MW-30 for GRO, one of the vials was broken upon receipt. The rest of the vials marked as limited volume.

SGS

SGS WO#

1138498

SAMPLE RECEIPT FORM FOR TRANSFERS

Note: This form is to be completed by Anchorage Sample Receiving staff for all shipments received at SGS-Anchorage from SGS-Fairbanks.

Were samples received numbered with all criteria on Sample Receipt Form F0004 documented by Fairbanks Sample Receiving staff? If "No," ***Anchorage Sample Receiving staff must complete the receiving process & document pH verification, sample condition, etc. on the SRF initiated by Fairbanks staff*** (attached).	Yes (No) N/A	Use space below for additional notes...

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location: COC accompanied samples?	(Yes) No N/A (Yes) No N/A	1F 1B
Temperature blank compliant (i.e., 0-6°C after correction factor)? Cooler ID: 1 @ 1.8 w/ Therm.ID: 239 Cooler ID: 2 @ 1.1 w/ Therm.ID: 239 Cooler ID: 3 @ 1.3 w/ Therm.ID: 239 Cooler ID: 4 @ 1.2 w/ Therm.ID: 239 Cooler ID: _____ @ _____ w/ Therm.ID: _____ ***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.*** If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP** will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." **If temperature(s) <0°C, were all containers ice free?**	(Yes) No N/A Yes No (N/A)	
Delivery method: Lynden Other:		
Completed by:		

APPENDIX C

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Attachment to and part of Report: 31-1-11661-003

Date: March 20, 2015

To: Mr. Loren Garner, FHRA

Re: 2013 Annual Groundwater Monitoring Report, FHRA Fuel Terminal, Fairbanks International Airport

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland