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Subject: Letter Report for Groundwater Sampling within the ARRC Anchorage Terminal Reserve Whitney Road, Anchorage, Alaska ADEC File # 2100.38.447
Rev. 1.3

Mr. Grandel:

Restoration Science & Engineering, LLC (RSE) is providing the following letter report for groundwater sampling at nine (9) monitoring wells, and attempted to sample two (2) other monitoring wells, located at the Alaska Railroad Corporation (ARRC) Anchorage Reserve (Reserve) located within Ship Creek Valley in Anchorage, Alaska. This site is listed under file 2100.38.447 in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database. The field effort described in this letter report represents sampling of approximately half of the wells situated on the subject property; the remaining wells are set to be sampled in 2018.

SITE OVERVIEW

The Reserve is comprised of approximately 600 acres of property owned by the ARRC within the lower Ship Creek Valley and is operated by the ARRC and various tenants leasing parcels for a variety of commercial and industrial businesses. The site was transferred to the State of Alaska in 1985, prior to which the property was owned by the federal government. Site contamination was present at the time of the transaction in 1985, originating from various historic releases.

In 2004, an administrative order on by consent (AOC) (US EPA Docket No. CERCLA 10-2004-0065) was signed to include the Reserve; from 2004 to 2016, environmental concerns and proceedings related to the Reserve were overseen directly by the EPA. In 2016, the EPA transferred oversight and management of the Reserve to the ADEC.

During this time numerous investigations and reports were completed on the subject property. Specific reports applicable to the work outlined in this plan include:

- RETEC Remedial Investigation (RETEC, 2007)
- Remedial Investigation/Feasibility Study (AECOM, 2010)
- Well Reconnaissance Report (Fairbanks Environmental Services, 2016)

The remedial investigation/feasibility studies identified remaining historic hydrocarbon and metals impacts from site activities. The well reconnaissance report identified 27 wells on the subject property. Of these wells, the following eleven (11) wells were to be sampled for ongoing groundwater monitoring as a part of this scope of work: MWB17, DPB21, MW24, MWB09, MWA05, MWA07, DPB04, DPA32, MWA22, MWE05, and MWE06. However, monitoring wells DPB21 and MWE05 were not sampled for analytical analysis in 2017 – explained below. Other wells located within the reserve not listed above will be sampled in a subsequent groundwater monitoring event in 2018.

OBJECTIVES

The work described in this letter report provides additional groundwater data for ongoing environmental monitoring and compliance for the Reserve.

GROUNDWATER SAMPLING

Based upon the results of previous investigations, RSE identified the following contaminants of potential concern (COPCs):

Table A. Contaminants of Potential Concern

COPC	Matrix	COPC Abbreviation	ADEC-Approved Lab Method	ADEC Table C Groundwater Cleanup
Gasoline Range Organics	Water	GRO	AK 101	2.2 mg/L
Diesel Range Organics	Water	DRO	AK 102	1.5 mg/L
Residual Range Organics	Water	RRO	AK 103	1.1 mg/L
Benzene	Water	Collectively referred to as BTEX	EPA 8260	4.6 ug/L
Toluene	Water			1100 ug/L
Ethylbenzene	Water			15 ug/L
Total Xylenes	Water			190 ug/L
Volatile Organic Compounds	Water	VOCs	EPA 8260	Varies
Metals	Water	Metals	EPA 200.8	Varies
Mercury	Water	Hg	EPA 245.1	0.52 ug/L

Target monitoring wells and the associated analytes at listed in Table B, below.

Table B. Proposed Monitoring Well Sampling

WELL ID	DRO/RRO	GRO	VOCs	Metals	Reference
MWB17	X	X	X		4-11b
DPB21			X		4-11b
MW24	X	X	X		NP
MWB09	X	X	X		4-11b
MWA05	X	X	X	X	4-11b
MWA07	X	X	X		4-12b
DPB04	X	X	X		4-12b
DPA32			X		4-12b
MWA22	X	X	X		4-11b
MWE05	X	X	X		4-12b
MWE06	X	X	X		4-12b

NOTES:
Tables 4-11b and 4-12b are included within the Remedial Investigation/Feasibility Study (RETEC, 2010)
NP means "not present" in either 4-11b or 4-12b

RSE first examined the condition of each well and documented evidence of compromise, as discussed below. RSE measured the depth to the bottom of each well, and the depth to groundwater. Following this observation, RSE then purged three (3) well volumes from each well. Water quality parameters were monitored for stabilization using an YSI 556. When readings collected 3-5 minutes apart were within the following tolerances, stabilization was achieved:

- pH ± 0.1
- Temperature ±3% (minimum of ± 0.2C)
- Conductivity ± 3%
- Specific Conductance ±10 mv
- Dissolved Oxygen ±10%

Water samples were collected using a positive-pressure submersible pump or a peristaltic pump set to a low flow rate during sampling. The target flow rate during low-flow sampling was less than 0.5 L/min (8 gallons per hour).

One blind duplicate sample (MW-XX duplicate of DBP04) was collected. The water samples were collected using new, dedicated tubing. The water level indicator and any other equipment that is not disposable or dedicated was decontaminated with distilled water and Alconox wash. As water samples were collected, care was taken to minimize volatile loss by excessive turbulence or air mixing. Field personnel avoided spilling or over-diluting acid sample preservatives. Water samples were placed directly into method-specific containers and stored in a clean sample cooler, which was then transported under chain-of-custody to ADEC-approved laboratory, SGS North America located in Anchorage, Alaska. Upon arrival, the internal temperature of the cooler was 2.5° C. Table C, below, shows the containers, preservation, and holding times for the groundwater samples.

Table C. Containers, Preservation, and Holding Times for Groundwater Samples

COPC	Matrix	Lab Method	Sample Container	Preservation	Holding Time
DRO	Water	AK 102	1x 250 mL glass Teflon-lined cap	HCl 0 – 6° C	7 days to extract, <40 days to analysis
RRO	Water	AK 101	1x 250 mL glass Teflon-lined cap	HCl 0 – 6° C	7 days to extract, <40 days to analysis
GRO	Water	AK 103	3x40 mL Volatile organic analysis (VOA) vials, minimize headspace	HCl 0 – 6° C	14 days
VOCs	Water	EPA 8260	3x40 mL Volatile organic analysis (VOA) vials, minimize headspace	HCl 0 – 6° C	14 days
Metals	Water	EPA 200.8	1x250 mL High density polyethylene (HDPE) jar	HNO3 0 – 6° C	14 days
Mercury	Water	EPA 245.1	1x500 mL Teflon jar	HCl 0 – 6° C	14 days

FIELD EVENTS

On September 12th, 13th and 14th, RSE personnel conducted water sampling within the Terminal Reserve for monitoring wells MWB17, MW24, MWB09, MWA05, MWA07, DPB04, DPA32, MWA22, and MWE06. Monitoring wells DPB21 and MWE05 were not sampled due to poor well condition and free product, respectively.

The following wells were found in good condition upon arrival: MWB17, MW24, DPA32, DPB04, MWE06, and MWA07. Monitoring wells MW24 and MWE06 produced purge water emitting strong hydrocarbon odor. Monitoring well MWA07 produced purge water with visible sheen.

Monitoring wells DPA32 and DPB04 were sampled using a peristaltic pump because the wells were less than 2 inches in diameter. The thin, elastic tubing of the peristaltic pump was the only method of sampling that was successful for these wells. When using a peristaltic pump, every effort was made to ensure a smooth laminal flow to minimize the loss of volatiles.

Monitoring well DPB21 was found in poor condition. The well was partially filled with soil and rocks, and the water level indicator was unable to be placed down the well. Peristaltic tubing was placed within the well; however, no water was produced.

Monitoring well MWA05 was found without a PVC or monument cap. RSE cut down the PVC to lower the top of casing to within the monument and sampled the well. The well was purged dry after 0.5 gallons of water was removed. RSE allowed the well to recharge, and was only able to collect sufficient water volume for DRO, RRO, and metals analysis.

MWA22 was discovered with sampling tubing within the monitoring well, which was removed and properly disposed of (see attached photos). The well was in found good condition otherwise. Monitoring well MW24's PVC casing was sticking above the top of the monument, but otherwise was found in good condition.

Monitoring well MWE05 was found to have free product, and was not sampled for laboratory analysis. Free product thickness was measure to equal 0.03 inches.

RESULTS

Monitoring wells MWA07 and MWE06 yielded 2.42 mg/L DRO and 27.6 mg/L DRO, respectively exceeding the ADEC Table C Groundwater Cleanup Level (GCL) of 1.5 mg/L. Sampling of monitoring wells MWA05 and MWE06 resulted in 2.42 mg/L RRO and 3.17 mg/L RRO exceeding the GCL of 1.1 mg/L RRO.

Monitoring well MWE06 yielded 117 ug/L 1,2,4-trimethylbenzene exceeding the GCL of 15 ug/L and 270 ug/L naphthalene above, the GCL of 1.7 ug/L. Sample MWB17 resulted in 2.90 ug/L chloroform above the GCL of 2.2 ug/L chloroform and 14.7 ug/L trichloroethylene exceeding the GCL of 2.8 ug/L.

Monitoring well DBP04 yielded 1.27 ug/L vinyl chloride exceeding the GCL of 0.19 ug/L.

MWA05 yielded cadmium (25.3 ug/L) and vanadium (180 ug/L) each exceeding the respective GCL of 9.2 ug/L cadmium and 86 ug/L vanadium. This well had evidence of compromise, with an exposed wellhead that may have contributed to groundwater being exposed to external conditions.

Refer to Tables 1-5, Attachment B for a complete list of results.

INVESTIGATIVE DERIVED WASTE

Consumables such as tubing and gloves were placed into a trash receptacle for disposal. Non-consumables such as the submersible pump was decontaminated using Alconox and hot water between sampling at each well. Tubing for water samples was dedicated to each well and disposed of following use.

Purge water from the monitoring wells was containerized in a sealed and labeled drum and stored onsite pending laboratory analysis and ADEC approval for disposal. Upon approval, RSE filtered purge water through a granular activated carbon canister, and discharged the effluent on a vegetated upland area, where the water could not runoff the project site.

QUALITY ASSURANCE AND QUALITY CONTROL

RSE collected each sample in general accordance with applicable ADEC regulation and guidance documents and the ADEC approved RSE work plan dated. A single blind duplicate, MW-XX, was collected for a duplicate sampling frequency of 10%. RSE submitted one (1) trip blank with the sample cooler containing volatile samples.

RSE deviated from the work plan at well locations DPA32 and DPB04, which were sampled using a peristaltic pump rather than a submersible pump as the wells were less than 2 inches in diameter. The thin, elastic tubing of the peristaltic pump was the only method of sampling that was successful for collecting water from these wells. When using a peristaltic pump, every effort was made to ensure a smooth laminal flow to minimize the loss of volatiles. Review of volatile data indicates there are not substantial differences between data produced from these wells and wells sampled using a submersible pump.

Monitoring well MWA05 was found without a casing monument and well cap allowing for potential exposure to traffic and debris. This exposure may have potentially affected monitoring results, particularly with regards to elevated concentrations of metals. This well should be decommissioned and re-installed so as to protect the groundwater from exposure to potential aboveground influences.

Monitoring well MWE05 contained free product and was not sampled for laboratory analysis. Free product thickness was measured at 0.03 inches. Monitoring well DPB21 was found in poor condition and did not produce water. No analytical sample was collected from DPB21.

RSE has completed the ADEC Laboratory Review checklist (Attachment E). All data was determined to be usable for comparison with the ADEC Table C Groundwater cleanup levels.

Table C details the laboratory methods and sample collection and preservation requirements for water sampling.

CONCLUSION AND RECOMMENDATIONS

Monitoring wells MWA07, MWE06, and MWA05 exhibit DRO concentrations exceeding the ADEC GCL. Monitoring well MWA05 yielded a RRO concentration exceeding the ADEC GCL. Monitoring wells MWE06, MWB17, and DPB04 yielded concentrations of various volatile organic compounds above ADEC GCLs. Monitoring well MWA05 resulted in concentrations of cadmium and vanadium above the ADEC GCLs.

Historically, monitoring well MWE06 has been below ADEC GCLs for 1,2,4-trimethylbezene and naphthalene; however due to the reduction in the ADEC GCLs for each analyte in 2017, the results now exceed ADEC GCLs. Similarly, monitoring well MWB17 resulted in a concentration of chloroform exceeding the current ADEC GCL, and monitoring well DPB04 resulted in a concentration vinyl chloride exceeding the current ADEC GCL. Both results for MWB17 and DPB04 were below historic ADEC GCLs for each respective analyte.

Monitoring well DPB21 was found in poor condition and did not produce water, and monitoring well MWE05 contained free product. Monitoring wells DPB21 and MWE05 were not sampled for analytical analysis in 2017.

RSE recommends the decommissioning and reinstalling monitoring wells DPB21 and MWA05 due to their highly deteriorated condition which may be contributing to outside interferences in groundwater conditions.

Please contact Emily Mahanna at ext. 110, if you have any questions or comments. It is our pleasure to work with the ADEC on this project.

This letter report was prepared by an ADEC-qualified environmental professional in accordance with 18 AAC 75/78.

Emily Mahanna, EIT

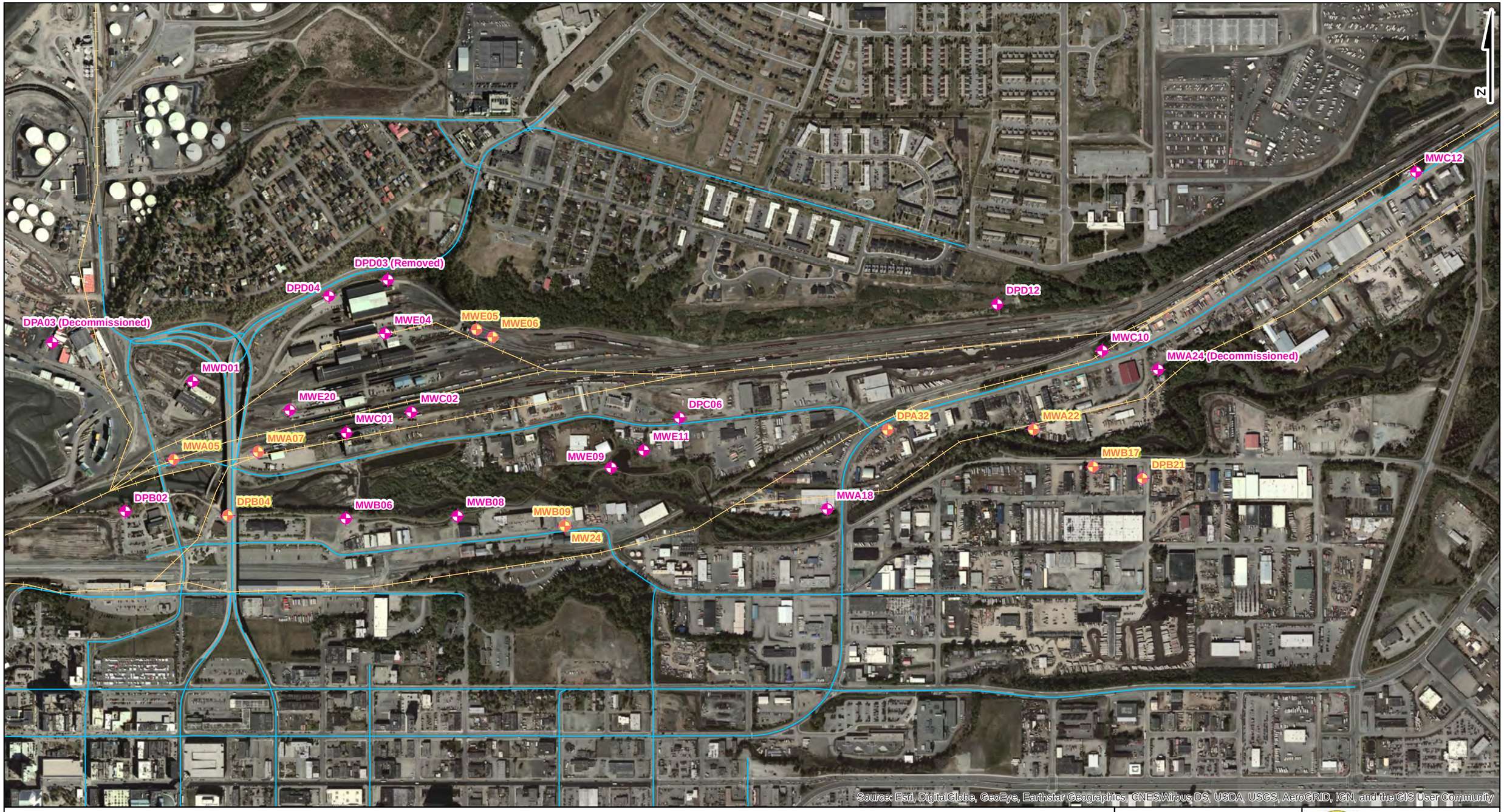
RESTORATION SCIENCE & ENGINEERING, LLC

ATTACHMENTS

Attachment A:	2016 FES Well Monitoring Location Map (Excerpted)
Attachment B:	Laboratory Results Tables
Attachment C:	Photographs
Attachment D:	SGS North America Lab Report #1176584
Attachment E:	ADEC Lab Review Checklist
Attachment F:	Field Notes

Attachment A:

2016 FES Well Monitoring Location Map (Excerpted)



LEGEND:

- Monitoring Wells
- Wells Evaluated in 2017
- Railroad
- Road

NOTES:

1. Coordinate System: NAD83, State Plane, Zone 4, Feet

SOURCES:

Imagery Source: ESRI Digital Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Commmunity

0 350 700 1,400 Feet

ALASKA RAILROAD CORPORATION

2017 Groundwater Sampling
Anchorage Terminal Reserve

FIGURE: 1

DATE: 2018

Attachment B:

Laboratory Results Tables

Table 1 - Groundwater Quality Field Parameters
Anchorage Terminal Reserve
Alaska Railroad Corporation (ARRC)
Anchorage, Alaska
December 2017

GROUNDWATER QUALITY FIELD PARAMETERS													
SAMPLE LOCATION	**DATE**	**DEPTH TO WATER (feet)**	**DEPTH TO BOTTOM (feet)**	**VOLUME PURGED (gal)**	**TIME (hh:mm)**	**WATER REMOVED (gal)**	**TEMP (°C)**	**pH (pH Units)**	**CONDUCTIVITY (mS/cm)**	**SPECIFIC CONDUCTANCE (µS/cm)**	**DO (mg/L)**	**REDOX (mV)**
MONITORING WELLS												
MWB17	9/12/2017	11.14	13.02	1	11:42	0.5	10.25	5.32	0.751	0.539	5.02	167.5
					11:45	1.0	10.26	5.32	0.729	0.729	4.58	158
MW24	9/12/2017	3.42	6.11	1.5	12:47	0.5	12.97	5.37	0.524	0.401	1.43	-36.9
					12:49	1.0	12.92	5.4	0.493	0.378	0.76	-48.2
					12:53	1.5	12.83	5.41	0.487	0.367	0.70	-53.9
MWB09	9/12/2017	3.81	11.86	4	13:16	1.0	10.87	5.90	0.404	0.295	0.55	-988.2
					13:20	2.0	10.83	5.91	0.407	0.296	0.54	-90.5
					13:23	3.0	10.06	5.9	0.403	0.288	0.53	79.4
					13:26	4.0	9.96	5.91	0.398	0.283	0.50	75.9
MWA22	9/12/2017	16.84	20.53	2	14:50	1.0	9.59	5.30	0.629	0.443	1.50	169
					14:55	2.0	8.73	5.36	0.653	0.451	1.67	169.9
DPA32	9/13/2017	12.56	15.15	0.5	9:17	0.5	6.35	5.72	0.935	0.673	2.54	15.5
DPB04	9/13/2017	12.11	25.07	5	13:18	1.0	8.76	5.59	0.533	0.368	1.40	-27.0
					13:25	2.0	8.12	5.76	0.527	0.357	1.50	-24
					13:32	3.0	8.08	5.79	0.527	0.356	1.50	-25.1
					13:37	4.0	8.08	5.81	0.524	0.358	1.53	-26.8
					13:41	5.0	8.04	5.84	0.525	0.355	1.52	-27.1
MWE06	9/13/2017	7.83	10.86	2	15:00	1.0	12.18	5.35	0.827	0.621	0.50	-55.0
					15:05	2.0	11.45	11.45	0.654	0.484	0.54	-55.2
MWA07	9/14/2017	11.75	19.95	4	9:39	1.0	8.02	5.44	1.071	0.723	0.76	-58.3
					9:43	2.0	7.45	5.56	0.973	0.647	0.71	-66.3
					9:47	3.0	7.50	5.59	0.961	0.639	0.7	-67.9
					9:50	4.0	7.40	5.61	0.959	0.637	0.67	-69.5
MWA05	9/14/2017	11.8	12.21	0.5	11:10	0.5	10.04	5.74	0.32	0.228	1.54	91.3

NOTES:

1) Water quality measurements performed using a YSI Model 556 Water Quality Meter

2) Purging of wells was completed using a submersible or peristaltic pump.

3) mS/cm = millisiemens per centimeter; µS/cm = micro Siemens per centimeter; ppt = parts per thousand; mV= millivolts; mg/L= milligram per liter; gal= gallon

Table 2 - Hydrocarbons in Groundwater
Anchorage Terminal Reserve
Alaska Railroad Corporation (ARRC)
Anchorage, Alaska
December 2017

HYDROCARBONS IN GROUNDWATER									
SAMPLE ID	DATE	DIESEL RANGE ORGANICS (mg/L)	RESIDUAL RANGE ORGANICS mg/L	GASOLINE RANGE ORGANICS (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	SGS PROJECT NO.
MWB17	9/12/2017	*0.283 U*	*0.236 U*	*0.0500 U*	*0.200 U*	*0.500 U*	*0.500 U*	*1.50 U*	
MWB09	9/12/2017	**0.686**	*0.236 U*	0.0596 J	**0.740**	*0.500 U*	*0.500 U*	*1.50 U*	
MW24	9/12/2017	**0.718**	*0.232 U*	0.0756 J	**0.620**	*0.500 U*	*0.500 U*	*1.50 U*	
MWA22	9/12/2017	0.175 J	*0.232 U*	*0.0500 U*	*0.200 U*	*0.500 U*	*0.500 U*	*1.50 U*	
MWA07	9/14/2017	**2.42**	**0.533**	**0.101**	**1.20**	*0.500 U*	*0.500 U*	*1.50 U*	1176584
MWA05	9/14/2017	0.933 J	**2.42**	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	
MWE06	9/13/2017	**27.6**	**3.17**	**0.372**	**4.51**	**1.12**	**8.02**	**35.0**	
DPB04	9/13/2017	*0.283 U*	*0.236 U*	*0.0500 U*	*0.200 U*	*0.500 U*	*0.500 U*	*1.50 U*	
MWX	9/12/2017	*0.288 U*	*0.240 U*	*0.0500 U*	**0.280 J**	*0.500 U*	*0.500 U*	*1.50 U*	
ADEC GROUNDWATER CLEANUP LEVELS TABLE C (18 AAC 75)		**1.5**	**1.1**	**2.2**	**4.6**	**1100**	**15**	**190**	

NOTES:

1) Diesel Range Organics (DRO) samples analyzed by AK Method 102; Residual Range Organics (RRO) samples analyzed by AK Method 103
Gasoline Range Organics (GRO) samples analyzed by AK Method 101; BTEX samples analyzed by EPA 8260D
2) "mg/L" means "milligrams per liter"; "ug/L" means "micrograms per liter".
3) **Bold** font indicates the analyte was detected above the Laboratory Limit of Detection (LOD).
4) *Italicized* font with a U-flag indicates the analyte was not detected at the LOD; the value presented is the LOD
5) J flag indicates the result is an estimated value
6) Yellow highlighting indicates the analyte was detected above the ADEC Groundwater Cleanup Level
7) MW-XX is a blind duplicate of DPB04

Table 3 - Volatile Organic Compounds in Groundwater
Anchorage Terminal Reserve
Alaska Railroad Corporation (ARRC)
Anchorage, Alaska
December 2017

VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN GROUNDWATER										
SAMPLE ID	DPA32	MWB17	MWB09	MW24	MWA22	MWA07	MWE06	DPB04	MWX	**ADEC Table C Groundwater Cleanup Levels (µg/L)**
Date	9/13/2017	9/12/2017	9/12/2017	9/12/2017	9/12/2017	9/14/2017	9/13/2017	9/13/2017	9/13/2017	
SGS Work Order	1176584	1176584	1176584	1176584	1176584	1176584	1176584	1176584	1176584	
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
1,1,1,2-Tetrachloroethane	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	5.7
1,1,1-Trichloroethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	8,000
1,1,2,2-Tetrachloroethane	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	0.76
1,1,2-Trichloroethane	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	*0.200 U*	0.41
1,1-Dichloroethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	28
1,1-Dichloroethene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	280
1,1-Dichloropropene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
1,2,3-Trichlorobenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	7.0
1,2,3-Trichloropropane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	0.0075
1,2,4-Trichlorobenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	4.0
1,2,4-Trimethylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	0.670 J	*0.500 U*	*0.500 U*	**117**	*0.500 U*	*0.500 U*	15
1,2-Dibromo-3-chloropropane	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	
1,2-Dibromoethane	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	*0.0375 U*	0.075
1,2-Dichlorobenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**2.51**	*0.500 U*	*0.500 U*	*0.500 U*	300
1,2-Dichloroethane	*0.250 U*	*0.250 U*	0.160 J	0.150 J	*0.250 U*	0.170 J	*0.250 U*	*0.250 U*	*0.250 U*	1.7
1,2-Dichloropropane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	4.4
1,3,5-Trimethylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**49.1**	*0.500 U*	*0.500 U*	120
1,3-Dichlorobenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	300
1,3-Dichloropropane	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	4.4
1,4-Dichlorobenzene	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	4.8
2,2-Dichloropropane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
2-Butanone (MEK)	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	5,600
2-Chlorotoluene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
2-Hexanone	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	38
4-Chlorotoluene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
4-Isopropyltoluene	*0.500 U*	*0.500 U*	*0.500 U*	0.400 J	*0.500 U*	*0.500 U*	**19.3**	*0.500 U*	*0.500 U*	
4-Methyl-2-pentanone (MIBK)	*5.00 U*	*5.00 U*	*5.00 U*	*0.500 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	6,300
Benzene	*0.200 U*	*0.200 U*	**0.740**	**0.620**	*0.200 U*	**1.20**	**4.51**	*0.200 U*	0.280 J	4.6
Bromobenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	62
Bromochloromethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
Bromodichloromethane	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	1.3
Bromoform	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	33
Bromomethane	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	7.5
Carbon disulfide	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	810
Carbon tetrachloride	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	4.6
Chlorobenzene	*0.250 U*	*0.250 U*	*0.250 U*	0.230 J	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	78
Chloroethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	
Chloroform	*0.500 U*	**2.90**	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	2.2
Chloromethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	190
cis-1,2-Dichloroethene	*0.500 U*	0.580 J	**1.08**	0.970 J	*0.500 U*	**2.92**	**2.92**	**9.21**	**9.05**	36
cis-1,3-Dichloropropene	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	
Dibromochloromethane	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	*0.250 U*	8.7
Dibromomethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	8.3
Dichlorodifluoromethane	*0.500 U*	*0.500 U*	0.820 J	**8.50**	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	200
Ethylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**8.02**	*0.500 U*	*0.500 U*	15
Freon-113	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	55000
Hexachlorobutadiene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	1.4
Isopropylbenzene (Cumene)	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**2.51**	**4.25**	*0.500 U*	*0.500 U*	450
Methylene chloride	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	*2.50 U*	110
Methyl-t-butyl ether	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	140
Naphthalene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**270**	*0.500 U*	*0.500 U*	1.7
n-Butylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	1,000
n-Propylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**1.59**	**5.31**	*0.500 U*	*0.500 U*	660
o-Xylene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**6.57**	*0.500 U*	*0.500 U*	See Total Xylenes
P & M -Xylene	*1.00 U*	*1.00 U*	*1.00 U*	*1.00 U*	*1.00 U*	*1.00 U*	**28.4**	*1.00 U*	*1.00 U*	See Total Xylenes
sec-Butylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	0.950 J	*0.500 U*	**3.82**	*5.29*	*0.500 U*	*0.500 U*	2,000
Styrene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	1,200
tert-Butylbenzene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	0.570 J	*1.04*	*0.500 U*	*0.500 U*	690
Tetrachloroethene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	41
Toluene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	**1.12**	*0.500 U*	*0.500 U*	1,100
trans-1,2-Dichloroethene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	360
trans-1,3-Dichloropropene	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	4.7
Trichloroethene	*0.500 U*	**14.7**	*0.500 U*	*0.500 U*	*0.500 U*	0.530 J	*0.500 U*	*0.500 U*	*0.500 U*	2.8
Trichlorofluoromethane	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	*0.500 U*	5,200
Vinyl acetate	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	*5.00 U*	410
Vinyl chloride	*0.0750 U*	*0.0750 U*	*0.0750 U*	*0.0750 U*	*0.0750 U*	*0.0750 U*	*0.0750 U*	**1.27**	**1.29**	0.19
Xylenes (total)	*1.50 U*	*1.50 U*	*1.50 U*	*1.50 U*	*1.50 U*	*1.50 U*	**35.0**	*1.50 U*	*1.50 U*	190

NOTES:
1) Volatile organic compounds (VOC) analyses by EPA 8260D
2) "mg/L" means "milligrams per liter"; "ug/L" means "micrograms per liter".
3) **Bold** font indicates the analyte was detected above the Laboratory Limit of Detection (LOD)
4) *Italicized* font with a U-flag indicates the analyte was not detected at the LOD; the value presented is the LOD
5) J flag indicates the result is an estimated value
6) Yellow highlighting indicates the analyte was detected above the ADEC Groundwater Cleanup Leve
7) MW-XX is a blind duplicate of DPB04

Table 4 - Metals in Groundwater
Anchorage Terminal Reserve
Alaska Railroad Corporation (ARRC)
Anchorage, Alaska
December 2017

METALS			
Sample ID **Date** **SGS Project No.** **Units**	MWA05 9/14/2017 1176584 ug/L	**ADEC Groundwater Cleanup Levels (18 AAC 75)**	
Aluminum	**55400**	--	--
Antimony	**5.21**	7.8	ug/L
Arsenic	**31.5**	0.52	ug/L
Barium	**552**	3800	ug/L
Beryllium	1.29 J	--	--
Cadmium	**25.3**	9.2 (Diet)	ug/L
Calcium	**57200**	--	--
Chromium	**147**	22,000	ug/L
Cobalt	**45.4**	--	--
Copper	**224**	800	ug/L
Iron	**105000**	--	--
Lead	**140**	15	ug/L
Magnesium	**40100**	--	--
Manganese	**2290**	--	--
Mercury	0.107 J	0.52	ug/L
Molybdenum	6.71 J	--	--
Nickel	**158**	--	--
Phosphorous	**1960**	--	--
Potassium	**11000**	--	--
Selenium	*12.5 U*	100	ug/L
Silicon	**99600**	--	--
Silver	*2.50 U*	94	ug/L
Sodium	**23300**	--	--
Thallium	*2.50 U*	--	--
Tin	**5.16**	--	--
Titanium	**2440**	--	--
Vanadium	**180**	86	ug/L
Zinc	**821**	6,000	ug/L

NOTES

1) Metals in water by ICP and ICP/MS using Methods EP200.7 and EP200.8
2) "mg/L" means "milligrams per liter"; "ug/L" means "micrograms per liter".
3) **Bold** font indicates the analyte was detected above the Laboratory Limit of Detection (LOD).
4) *Italicized* font with a U-flag indicates the analyte was not detected at the LOD; the value presented is the LOD
5) J flag indicates the result is an estimated value
6) Yellow highlighting indicates the analyte was detected above the ADEC Groundwater Cleanup Leve

Attachment C:

Photographs

DPB21 broken PVC casing partially filled with dirt.

MWB17 protective casing and inner PVC.

Sampling MWB17 using submersible pump.

MWB09 inner PVC casing found in good condition.

MW24 outer protective casing cap.

MW-24 and MWB09 purge water stored onsite.

Locked outer protective casing of DPA32

MWA22 PVC casing rising above out protective casing.

Tubing, which was removed and disposed of, found within MWA22.

Sampling MWE06 using a submersible pump.

Inner 1 inch PVC casing of DPB04.

Sampling MWA07 using a submersible pump.

Sampling MWA05 using a submersible pump.

Locked well cap of MWE05.

Attachment D:

SGS North America Lab Report #1176584

Laboratory Report of Analysis

To: AK Railroad Corp (ARRC)
327 W. Ship Creek Ave
Anchorage, AK 99501
907265-2429

Report Number: **1176584**

Client Project: **ARRC Terminal Reserve**

Dear Russell Grandel,

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 ten 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 Chuck 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.

Chuck Homestead Date
Project Manager
Charles.Homestead@sgs.com

Print Date: 09/27/2017 3:26:43PM

Case Narrative

SGS Client: **AK Railroad Corp (ARRC)**
SGS Project: **1176584**
Project Name/Site: **ARRC Terminal Reserve**
Project Contact: **Russell Grandel**

Refer to sample receipt form for information on sample condition.

MWA05 (1176584007) PS

200.8 - The metals LOQ for multiple analytes was elevated due to matrix interference.

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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

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. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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) for which SGS North America Inc. is Provisionally Certified as of 9/21/2017 & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 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/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
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
DPA32	1176584001	09/13/2017	09/14/2017	Water (Surface, Eff., Ground)
MWB17	1176584002	09/12/2017	09/14/2017	Water (Surface, Eff., Ground)
MWB09	1176584003	09/12/2017	09/14/2017	Water (Surface, Eff., Ground)
MW24	1176584004	09/12/2017	09/14/2017	Water (Surface, Eff., Ground)
MWA22	1176584005	09/12/2017	09/14/2017	Water (Surface, Eff., Ground)
MWA07	1176584006	09/14/2017	09/14/2017	Water (Surface, Eff., Ground)
MWA05	1176584007	09/14/2017	09/14/2017	Water (Surface, Eff., Ground)
MWE06	1176584008	09/13/2017	09/14/2017	Water (Surface, Eff., Ground)
DPB04	1176584009	09/13/2017	09/14/2017	Water (Surface, Eff., Ground)
MWX	1176584010	09/13/2017	09/14/2017	Water (Surface, Eff., Ground)
Trip Blank	1176584011	09/12/2017	09/14/2017	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
EP245.1	Mercury EPA 245.1 for non drinking water
EP200.8	Metals in Water by 200.8 ICP-MS
SW8260C	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **MWB17**
Lab Sample ID: 1176584002
Volatile GC/MS

Parameter	Result	Units
Chloroform	2.90	ug/L
cis-1,2-Dichloroethene	0.580J	ug/L
Trichloroethene	14.7	ug/L

Client Sample ID: **MWB09**
Lab Sample ID: 1176584003
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	0.686	mg/L
Gasoline Range Organics	0.0596J	mg/L
1,2-Dichloroethane	0.160J	ug/L
Benzene	0.740	ug/L
cis-1,2-Dichloroethene	1.08	ug/L
Dichlorodifluoromethane	0.820J	ug/L

Client Sample ID: **MW24**
Lab Sample ID: 1176584004
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	0.718	mg/L
Gasoline Range Organics	0.0756J	mg/L
1,2,4-Trimethylbenzene	0.670J	ug/L
1,2-Dichloroethane	0.150J	ug/L
4-Isopropyltoluene	0.400J	ug/L
Benzene	0.620	ug/L
Chlorobenzene	0.230J	ug/L
cis-1,2-Dichloroethene	0.970J	ug/L
Dichlorodifluoromethane	8.50	ug/L
sec-Butylbenzene	0.950J	ug/L

Client Sample ID: **MWA22**
Lab Sample ID: 1176584005
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.175J	mg/L

Client Sample ID: **MWA07**
Lab Sample ID: 1176584006
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	2.42	mg/L
Residual Range Organics	0.553	mg/L
Gasoline Range Organics	0.101	mg/L
1,2-Dichlorobenzene	2.51	ug/L
1,2-Dichloroethane	0.170J	ug/L
Benzene	1.20	ug/L
cis-1,2-Dichloroethene	2.92	ug/L
Isopropylbenzene (Cumene)	2.51	ug/L
n-Propylbenzene	1.59	ug/L
sec-Butylbenzene	3.82	ug/L
tert-Butylbenzene	0.570J	ug/L
Trichloroethene	0.530J	ug/L

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Detectable Results Summary

Client Sample ID: **MWA05**
Lab Sample ID: 1176584007

	Parameter	Result	Units
Metals by ICP/MS	Aluminum	55400	ug/L
	Antimony	5.21	ug/L
	Arsenic	31.5	ug/L
	Barium	552	ug/L
	Beryllium	1.29J	ug/L
	Cadmium	25.3	ug/L
	Calcium	57200	ug/L
	Chromium	147	ug/L
	Cobalt	45.4	ug/L
	Copper	224	ug/L
	Iron	105000	ug/L
	Lead	140	ug/L
	Magnesium	40100	ug/L
	Manganese	2290	ug/L
	Molybdenum	6.71J	ug/L
	Nickel	158	ug/L
	Phosphorus	1960	ug/L
	Potassium	11000	ug/L
	Silicon	99600	ug/L
	Sodium	23300	ug/L
	Tin	5.16	ug/L
	Titanium	2440	ug/L
	Vanadium	180	ug/L
	Zinc	821	ug/L
Metals Department	Mercury	0.107J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.933J	mg/L
	Residual Range Organics	2.42	mg/L

Print Date: 09/27/2017 3:26:48PM

Detectable Results Summary

Client Sample ID: **MWE06**
Lab Sample ID: 1176584008

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	27.6	mg/L
	Residual Range Organics	3.17	mg/L
Volatile Fuels	Gasoline Range Organics	0.372	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	117	ug/L
	1,3,5-Trimethylbenzene	49.1	ug/L
	4-Isopropyltoluene	19.3	ug/L
	Benzene	4.51	ug/L
	Ethylbenzene	8.02	ug/L
	Isopropylbenzene (Cumene)	4.25	ug/L
	Naphthalene	270	ug/L
	n-Propylbenzene	5.31	ug/L
	o-Xylene	6.57	ug/L
	P & M -Xylene	28.4	ug/L
	sec-Butylbenzene	5.29	ug/L
	tert-Butylbenzene	1.04	ug/L
	Toluene	1.12	ug/L
	Xylenes (total)	35.0	ug/L

Client Sample ID: **DPB04**
Lab Sample ID: 1176584009

	Parameter	Result	Units
Volatile GC/MS	Benzene	0.280J	ug/L
	cis-1,2-Dichloroethene	9.21	ug/L
	Vinyl chloride	1.27	ug/L

Client Sample ID: **MWX**
Lab Sample ID: 1176584010

	Parameter	Result	Units
Volatile GC/MS	Benzene	0.280J	ug/L
	cis-1,2-Dichloroethene	9.05	ug/L
	Vinyl chloride	1.29	ug/L

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Results of **DPA32**

Client Sample ID: **DPA32**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584001
Lab Project ID: 1176584

Collection Date: 09/13/17 09:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:29
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:29
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 19:29
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:29
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:29
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:29
Benzene	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:29
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 19:29
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:29
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:29
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:29

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Results of **DPA32**

Client Sample ID: **DPA32**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584001
Lab Project ID: 1176584

Collection Date: 09/13/17 09:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 19:29
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 19:29
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:29
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 19:29
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:29
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 19:29
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:29
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:29
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 19:29
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 19:29
Surrogates								
1,2-Dichloroethane-D4 (surr)	108		81-118		%	1		09/22/17 19:29
4-Bromofluorobenzene (surr)	99.6		85-114		%	1		09/22/17 19:29
Toluene-d8 (surr)	98.5		89-112		%	1		09/22/17 19:29

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Results of **DPA32**

Client Sample ID: **DPA32**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584001
Lab Project ID: 1176584

Collection Date: 09/13/17 09:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 19:29
Container ID: 1176584001-A

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWB17**

Client Sample ID: **MWB17**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584002
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.283	U	0.566	0.170	mg/L	1		09/15/17 22:36
Surrogates								
5a Androstane (surr)	85.9		50-150		%	1		09/15/17 22:36

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/15/17 22:36
Container ID: 1176584002-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.236	U	0.472	0.142	mg/L	1		09/15/17 22:36
Surrogates								
n-Triacontane-d62 (surr)	89.3		50-150		%	1		09/15/17 22:36

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/15/17 22:36
Container ID: 1176584002-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

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Results of **MWB17**

Client Sample ID: **MWB17**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584002
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		09/16/17 02:32
Surrogates								
4-Bromofluorobenzene (surr)	85.1		50-150		%	1		09/16/17 02:32

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 02:32
Container ID: 1176584002-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWB17**

Client Sample ID: **MWB17**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584002
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:46
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 19:46
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
Benzene	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:46
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 19:46
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46

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Results of **MWB17**

Client Sample ID: **MWB17**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584002
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	2.90		1.00	0.310	ug/L	1		09/22/17 19:46
Chloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
cis-1,2-Dichloroethene	0.580	J	1.00	0.310	ug/L	1		09/22/17 19:46
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:46
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Freon-113	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		09/22/17 19:46
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
Naphthalene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
o-Xylene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		09/22/17 19:46
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Styrene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Toluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Trichloroethene	14.7		1.00	0.310	ug/L	1		09/22/17 19:46
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:46
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:46
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		09/22/17 19:46
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		09/22/17 19:46
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		09/22/17 19:46
4-Bromofluorobenzene (surr)	99.5		85-114		%	1		09/22/17 19:46
Toluene-d8 (surr)	98.4		89-112		%	1		09/22/17 19:46

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Results of **MWB17**

Client Sample ID: **MWB17**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584002
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 19:46
Container ID: 1176584002-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWB09**

Client Sample ID: **MWB09**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584003
Lab Project ID: 1176584

Collection Date: 09/12/17 13:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.686		0.566	0.170	mg/L	1		09/15/17 22:57
Surrogates								
5a Androstane (surr)	84.7		50-150		%	1		09/15/17 22:57

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/15/17 22:57
Container ID: 1176584003-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.236 U		0.472	0.142	mg/L	1		09/15/17 22:57
Surrogates								
n-Triacontane-d62 (surr)	88.3		50-150		%	1		09/15/17 22:57

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/15/17 22:57
Container ID: 1176584003-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

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Results of **MWB09**

Client Sample ID: **MWB09**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584003
Lab Project ID: 1176584

Collection Date: 09/12/17 13:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0596	J	0.100	0.0310	mg/L	1		09/16/17 02:51
Surrogates								
4-Bromofluorobenzene (surr)	89.8		50-150		%	1		09/16/17 02:51

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 02:51
Container ID: 1176584003-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/27/2017 3:26:50PM

J flagging is activated

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Results of **MWB09**

Client Sample ID: **MWB09**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584003
Lab Project ID: 1176584

Collection Date: 09/12/17 13:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 20:04
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:04
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 20:04
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,2-Dichloroethane	0.160	J	0.500	0.150	ug/L	1		09/22/17 20:04
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:04
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:04
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:04
Benzene	0.740		0.400	0.120	ug/L	1		09/22/17 20:04
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 20:04
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:04
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:04
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:04

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Results of **MWB09**

Client Sample ID: **MWB09**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584003
Lab Project ID: 1176584

Collection Date: 09/12/17 13:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
cis-1,2-Dichloroethene	1.08		1.00	0.310	ug/L	1		09/22/17 20:04
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:04
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:04
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Dichlorodifluoromethane	0.820 J		1.00	0.310	ug/L	1		09/22/17 20:04
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:04
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 20:04
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:04
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 20:04
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:04
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:04
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 20:04
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 20:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		09/22/17 20:04
4-Bromofluorobenzene (surr)	103		85-114		%	1		09/22/17 20:04
Toluene-d8 (surr)	99.6		89-112		%	1		09/22/17 20:04

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Results of **MWB09**

Client Sample ID: **MWB09**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584003
Lab Project ID: 1176584

Collection Date: 09/12/17 13:30
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 20:04
Container ID: 1176584003-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW24**

Client Sample ID: **MW24**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584004
Lab Project ID: 1176584

Collection Date: 09/12/17 12:55
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.718		0.556	0.167	mg/L	1		09/15/17 23:18
Surrogates								
5a Androstane (surr)	86.8		50-150		%	1		09/15/17 23:18

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/15/17 23:18
Container ID: 1176584004-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.232	U	0.463	0.139	mg/L	1		09/15/17 23:18
Surrogates								
n-Triacontane-d62 (surr)	91.4		50-150		%	1		09/15/17 23:18

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/15/17 23:18
Container ID: 1176584004-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

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Results of **MW24**

Client Sample ID: **MW24**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584004
Lab Project ID: 1176584

Collection Date: 09/12/17 12:55
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0756	J	0.100	0.0310	mg/L	1		09/16/17 03:10
Surrogates								
4-Bromofluorobenzene (surr)	94		50-150		%	1		09/16/17 03:10

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 03:10
Container ID: 1176584004-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW24**

Client Sample ID: **MW24**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584004
Lab Project ID: 1176584

Collection Date: 09/12/17 12:55
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:21
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:21
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 20:21
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,2,4-Trimethylbenzene	0.670	J	1.00	0.310	ug/L	1		09/22/17 20:21
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:21
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 20:21
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,2-Dichloroethane	0.150	J	0.500	0.150	ug/L	1		09/22/17 20:21
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:21
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:21
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:21
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:21
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
4-Isopropyltoluene	0.400	J	1.00	0.310	ug/L	1		09/22/17 20:21
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:21
Benzene	0.620		0.400	0.120	ug/L	1		09/22/17 20:21
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:21
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 20:21
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:21
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21
Chlorobenzene	0.230	J	0.500	0.150	ug/L	1		09/22/17 20:21
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:21

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Results of **MW24**

Client Sample ID: **MW24**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584004
Lab Project ID: 1176584

Collection Date: 09/12/17 12:55
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
cis-1,2-Dichloroethene	0.970 J		1.00	0.310	ug/L	1		09/22/17 20:21
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:21
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:21
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Dichlorodifluoromethane	8.50		1.00	0.310	ug/L	1		09/22/17 20:21
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:21
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 20:21
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:21
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 20:21
sec-Butylbenzene	0.950 J		1.00	0.310	ug/L	1		09/22/17 20:21
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:21
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:21
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 20:21
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 20:21
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		09/22/17 20:21
4-Bromofluorobenzene (surr)	102		85-114		%	1		09/22/17 20:21
Toluene-d8 (surr)	97.8		89-112		%	1		09/22/17 20:21

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Results of **MW24**

Client Sample ID: **MW24**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584004
Lab Project ID: 1176584

Collection Date: 09/12/17 12:55
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 20:21
Container ID: 1176584004-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWA22**

Client Sample ID: **MWA22**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584005
Lab Project ID: 1176584

Collection Date: 09/12/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.175	J	0.556	0.167	mg/L	1		09/15/17 23:39
Surrogates								
5a Androstane (surr)	71.8		50-150		%	1		09/15/17 23:39

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/15/17 23:39
Container ID: 1176584005-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.232	U	0.463	0.139	mg/L	1		09/15/17 23:39
Surrogates								
n-Triacontane-d62 (surr)	76.3		50-150		%	1		09/15/17 23:39

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/15/17 23:39
Container ID: 1176584005-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

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Results of **MWA22**

Client Sample ID: **MWA22**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584005
Lab Project ID: 1176584

Collection Date: 09/12/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		09/16/17 03:29
Surrogates								
4-Bromofluorobenzene (surr)	79.4		50-150		%	1		09/16/17 03:29

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 03:29
Container ID: 1176584005-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWA22**

Client Sample ID: **MWA22**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584005
Lab Project ID: 1176584

Collection Date: 09/12/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 20:39
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:39
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 20:39
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:39
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:39
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:39
Benzene	0.200	U	0.400	0.120	ug/L	1		09/22/17 20:39
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 20:39
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:39
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:39
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:39

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Results of **MWA22**

Client Sample ID: **MWA22**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584005
Lab Project ID: 1176584

Collection Date: 09/12/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:39
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:39
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:39
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 20:39
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:39
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 20:39
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:39
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:39
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 20:39
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 20:39
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		09/22/17 20:39
4-Bromofluorobenzene (surr)	99.6		85-114		%	1		09/22/17 20:39
Toluene-d8 (surr)	97.9		89-112		%	1		09/22/17 20:39

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Results of **MWA22**

Client Sample ID: **MWA22**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584005
Lab Project ID: 1176584

Collection Date: 09/12/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 20:39
Container ID: 1176584005-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWA07**

Client Sample ID: **MWA07**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584006
Lab Project ID: 1176584

Collection Date: 09/14/17 09:50
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.42		0.566	0.170	mg/L	1		09/16/17 17:06
Surrogates								
5a Androstane (surr)	94.3		50-150		%	1		09/16/17 17:06

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/16/17 17:06
Container ID: 1176584006-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.553		0.472	0.142	mg/L	1		09/16/17 17:06
Surrogates								
n-Triacontane-d62 (surr)	98.1		50-150		%	1		09/16/17 17:06

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/16/17 17:06
Container ID: 1176584006-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

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Results of **MWA07**

Client Sample ID: **MWA07**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584006
Lab Project ID: 1176584

Collection Date: 09/14/17 09:50
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.101		0.100	0.0310	mg/L	1		09/16/17 03:49
Surrogates								
4-Bromofluorobenzene (surr)	111		50-150		%	1		09/16/17 03:49

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 03:49
Container ID: 1176584006-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWA07**

Client Sample ID: **MWA07**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584006
Lab Project ID: 1176584

Collection Date: 09/14/17 09:50
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 20:57
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:57
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 20:57
1,2-Dichlorobenzene	2.51		1.00	0.310	ug/L	1		09/22/17 20:57
1,2-Dichloroethane	0.170	J	0.500	0.150	ug/L	1		09/22/17 20:57
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:57
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:57
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:57
Benzene	1.20		0.400	0.120	ug/L	1		09/22/17 20:57
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 20:57
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 20:57
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 20:57
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 20:57

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Results of **MWA07**

Client Sample ID: **MWA07**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584006
Lab Project ID: 1176584

Collection Date: 09/14/17 09:50
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
cis-1,2-Dichloroethene	2.92		1.00	0.310	ug/L	1		09/22/17 20:57
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:57
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 20:57
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:57
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Isopropylbenzene (Cumene)	2.51		1.00	0.310	ug/L	1		09/22/17 20:57
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 20:57
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:57
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
n-Propylbenzene	1.59		1.00	0.310	ug/L	1		09/22/17 20:57
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 20:57
sec-Butylbenzene	3.82		1.00	0.310	ug/L	1		09/22/17 20:57
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
tert-Butylbenzene	0.570 J		1.00	0.310	ug/L	1		09/22/17 20:57
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Trichloroethene	0.530 J		1.00	0.310	ug/L	1		09/22/17 20:57
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 20:57
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 20:57
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 20:57
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 20:57
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		09/22/17 20:57
4-Bromofluorobenzene (surr)	102		85-114		%	1		09/22/17 20:57
Toluene-d8 (surr)	98.8		89-112		%	1		09/22/17 20:57

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Results of **MWA07**

Client Sample ID: **MWA07**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584006
Lab Project ID: 1176584

Collection Date: 09/14/17 09:50
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 20:57
Container ID: 1176584006-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWA05**

Client Sample ID: **MWA05**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584007
Lab Project ID: 1176584

Collection Date: 09/14/17 11:10
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aluminum	55400		1000	310	ug/L	10		09/21/17 08:48
Antimony	5.21		5.00	1.55	ug/L	1		09/21/17 08:45
Arsenic	31.5		25.0	7.50	ug/L	1		09/21/17 08:45
Barium	552		15.0	4.70	ug/L	1		09/21/17 08:45
Beryllium	1.29	J	2.00	0.650	ug/L	1		09/21/17 08:45
Cadmium	25.3		2.50	0.750	ug/L	1		09/21/17 08:45
Calcium	57200		2500	750	ug/L	1		09/21/17 08:45
Chromium	147		10.0	3.10	ug/L	1		09/21/17 08:45
Cobalt	45.4		20.0	6.00	ug/L	1		09/21/17 08:45
Copper	224		5.00	1.55	ug/L	1		09/21/17 08:45
Iron	105000		1250	390	ug/L	1		09/21/17 08:45
Lead	140		1.00	0.310	ug/L	1		09/21/17 08:45
Magnesium	40100		250	75.0	ug/L	1		09/21/17 08:45
Manganese	2290		5.00	1.55	ug/L	1		09/21/17 08:45
Molybdenum	6.71	J	10.0	3.10	ug/L	1		09/21/17 08:45
Nickel	158		10.0	3.10	ug/L	1		09/21/17 08:45
Phosphorus	1960		1000	310	ug/L	1		09/21/17 08:45
Potassium	11000		2500	750	ug/L	1		09/21/17 08:45
Selenium	12.5	U	25.0	7.50	ug/L	1		09/21/17 08:45
Silicon	99600		5000	1550	ug/L	1		09/25/17 12:57
Silver	2.50	U	5.00	1.55	ug/L	1		09/21/17 08:45
Sodium	23300		2500	750	ug/L	1		09/21/17 08:45
Thallium	2.50	U	5.00	1.55	ug/L	1		09/21/17 08:45
Tin	5.16		5.00	1.55	ug/L	1		09/21/17 08:45
Titanium	2440		125	38.8	ug/L	1		09/21/17 08:45
Vanadium	180		100	31.0	ug/L	1		09/21/17 08:45
Zinc	821		25.0	12.5	ug/L	1		09/21/17 08:45

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Results of **MWA05**

Client Sample ID: **MWA05**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584007
Lab Project ID: 1176584

Collection Date: 09/14/17 11:10
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Batch Information

Analytical Batch: MMS9946
Analytical Method: EP200.8
Analyst: VDL
Analytical Date/Time: 09/21/17 08:45
Container ID: 1176584007-C

Prep Batch: MXX31056
Prep Method: E200.2
Prep Date/Time: 09/19/17 08:15
Prep Initial Wt./Vol.: 4 mL
Prep Extract Vol: 50 mL

Analytical Batch: MMS9946
Analytical Method: EP200.8
Analyst: VDL
Analytical Date/Time: 09/21/17 08:48
Container ID: 1176584007-C

Prep Batch: MXX31056
Prep Method: E200.2
Prep Date/Time: 09/19/17 08:15
Prep Initial Wt./Vol.: 4 mL
Prep Extract Vol: 50 mL

Analytical Batch: MMS9952
Analytical Method: EP200.8
Analyst: VDL
Analytical Date/Time: 09/25/17 12:57
Container ID: 1176584007-C

Prep Batch: MXX31056
Prep Method: E200.2
Prep Date/Time: 09/19/17 08:15
Prep Initial Wt./Vol.: 4 mL
Prep Extract Vol: 50 mL

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Results of **MWA05**

Client Sample ID: **MWA05**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584007
Lab Project ID: 1176584

Collection Date: 09/14/17 11:10
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals Department**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Mercury	0.107	J	0.200	0.0620	ug/L	1		09/20/17 18:57

Batch Information

Analytical Batch: MCV5851
Analytical Method: EP245.1
Analyst: TMA
Analytical Date/Time: 09/20/17 18:57
Container ID: 1176584007-C

Prep Batch: MXX31072
Prep Method: METHOD
Prep Date/Time: 09/20/17 12:00
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 50 mL

Print Date: 09/27/2017 3:26:50PM

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Results of **MWA05**

Client Sample ID: **MWA05**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584007
Lab Project ID: 1176584

Collection Date: 09/14/17 11:10
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.933	J	2.22	0.667	mg/L	4		09/16/17 19:53
Surrogates								
5a Androstane (surr)	76.6		50-150		%	4		09/16/17 19:53

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/16/17 19:53
Container ID: 1176584007-A

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	2.42		1.85	0.556	mg/L	4		09/16/17 19:53
Surrogates								
n-Triacontane-d62 (surr)	77.1		50-150		%	4		09/16/17 19:53

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/16/17 19:53
Container ID: 1176584007-A

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Print Date: 09/27/2017 3:26:50PM

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Results of **MWE06**

Client Sample ID: **MWE06**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584008
Lab Project ID: 1176584

Collection Date: 09/13/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	27.6		0.566	0.170	mg/L	1		09/16/17 17:27
Surrogates								
5a Androstane (surr)	94.6		50-150		%	1		09/16/17 17:27

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/16/17 17:27
Container ID: 1176584008-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	3.17		0.472	0.142	mg/L	1		09/16/17 17:27
Surrogates								
n-Triacontane-d62 (surr)	94.2		50-150		%	1		09/16/17 17:27

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/16/17 17:27
Container ID: 1176584008-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 09/27/2017 3:26:50PM

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Results of **MWE06**

Client Sample ID: **MWE06**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584008
Lab Project ID: 1176584

Collection Date: 09/13/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.372		0.100	0.0310	mg/L	1		09/16/17 04:08
Surrogates								
4-Bromofluorobenzene (surr)	112		50-150		%	1		09/16/17 04:08

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 04:08
Container ID: 1176584008-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/27/2017 3:26:50PM

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Results of **MWE06**

Client Sample ID: **MWE06**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584008
Lab Project ID: 1176584

Collection Date: 09/13/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 21:14
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,2,4-Trimethylbenzene	117		1.00	0.310	ug/L	1		09/22/17 21:14
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:14
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 21:14
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,3,5-Trimethylbenzene	49.1		1.00	0.310	ug/L	1		09/22/17 21:14
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:14
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:14
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
4-Isopropyltoluene	19.3		1.00	0.310	ug/L	1		09/22/17 21:14
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:14
Benzene	4.51		0.400	0.120	ug/L	1		09/22/17 21:14
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 21:14
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:14
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:14
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:14

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Results of **MWE06**

Client Sample ID: **MWE06**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584008
Lab Project ID: 1176584

Collection Date: 09/13/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 21:14
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 21:14
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Ethylbenzene	8.02		1.00	0.310	ug/L	1		09/22/17 21:14
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:14
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Isopropylbenzene (Cumene)	4.25		1.00	0.310	ug/L	1		09/22/17 21:14
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 21:14
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:14
Naphthalene	270		10.0	3.10	ug/L	10		09/25/17 15:12
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
n-Propylbenzene	5.31		1.00	0.310	ug/L	1		09/22/17 21:14
o-Xylene	6.57		1.00	0.310	ug/L	1		09/22/17 21:14
P & M -Xylene	28.4		2.00	0.620	ug/L	1		09/22/17 21:14
sec-Butylbenzene	5.29		1.00	0.310	ug/L	1		09/22/17 21:14
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
tert-Butylbenzene	1.04		1.00	0.310	ug/L	1		09/22/17 21:14
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Toluene	1.12		1.00	0.310	ug/L	1		09/22/17 21:14
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:14
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:14
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 21:14
Xylenes (total)	35.0		3.00	1.00	ug/L	1		09/22/17 21:14
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		09/22/17 21:14
4-Bromofluorobenzene (surr)	99.8		85-114		%	1		09/22/17 21:14
Toluene-d8 (surr)	98.7		89-112		%	1		09/22/17 21:14

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Results of **MWE06**

Client Sample ID: **MWE06**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584008
Lab Project ID: 1176584

Collection Date: 09/13/17 15:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17230
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/25/17 15:12
Container ID: 1176584008-D

Prep Batch: VXX31373
Prep Method: SW5030B
Prep Date/Time: 09/25/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 21:14
Container ID: 1176584008-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **DPB04**

Client Sample ID: **DPB04**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584009
Lab Project ID: 1176584

Collection Date: 09/13/17 13:45
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.283	U	0.566	0.170	mg/L	1		09/16/17 17:48
Surrogates								
5a Androstane (surr)	86.8		50-150		%	1		09/16/17 17:48

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/16/17 17:48
Container ID: 1176584009-F

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.236	U	0.472	0.142	mg/L	1		09/16/17 17:48
Surrogates								
n-Triacontane-d62 (surr)	96.8		50-150		%	1		09/16/17 17:48

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/16/17 17:48
Container ID: 1176584009-F

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

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Results of **DPB04**

Client Sample ID: **DPB04**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584009
Lab Project ID: 1176584

Collection Date: 09/13/17 13:45
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		09/16/17 04:27
Surrogates								
4-Bromofluorobenzene (surr)	86.6		50-150		%	1		09/16/17 04:27

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 04:27
Container ID: 1176584009-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **DPB04**

Client Sample ID: **DPB04**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584009
Lab Project ID: 1176584

Collection Date: 09/13/17 13:45
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 21:32
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 21:32
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
Benzene	0.280	J	0.400	0.120	ug/L	1		09/22/17 21:32
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 21:32
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32

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Results of **DPB04**

Client Sample ID: **DPB04**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584009
Lab Project ID: 1176584

Collection Date: 09/13/17 13:45
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Chloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
cis-1,2-Dichloroethene	9.21		1.00	0.310	ug/L	1		09/22/17 21:32
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:32
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Freon-113	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		09/22/17 21:32
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
Naphthalene	0.500	U	1.00	0.310	ug/L	1		09/25/17 14:38
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
o-Xylene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		09/22/17 21:32
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Styrene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Toluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:32
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:32
Vinyl chloride	1.27		0.150	0.0500	ug/L	1		09/22/17 21:32
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		09/22/17 21:32
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/22/17 21:32
4-Bromofluorobenzene (surr)	97.8		85-114		%	1		09/22/17 21:32
Toluene-d8 (surr)	99		89-112		%	1		09/22/17 21:32

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Results of **DPB04**

Client Sample ID: **DPB04**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584009
Lab Project ID: 1176584

Collection Date: 09/13/17 13:45
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17230
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/25/17 14:38
Container ID: 1176584009-C

Prep Batch: VXX31373
Prep Method: SW5030B
Prep Date/Time: 09/25/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 21:32
Container ID: 1176584009-C

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MWX**

Client Sample ID: **MWX**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584010
Lab Project ID: 1176584

Collection Date: 09/13/17 13:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.288	U	0.577	0.173	mg/L	1		09/16/17 18:09
Surrogates								
5a Androstane (surr)	83.9		50-150		%	1		09/16/17 18:09

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/16/17 18:09
Container ID: 1176584010-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.240	U	0.481	0.144	mg/L	1		09/16/17 18:09
Surrogates								
n-Triacontane-d62 (surr)	92.6		50-150		%	1		09/16/17 18:09

Batch Information

Analytical Batch: XFC13805
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/16/17 18:09
Container ID: 1176584010-G

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 09/15/17 07:59
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

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Results of **MWX**

Client Sample ID: **MWX**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584010
Lab Project ID: 1176584

Collection Date: 09/13/17 13:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		09/16/17 04:46
Surrogates								
4-Bromofluorobenzene (surr)	85.9		50-150		%	1		09/16/17 04:46

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/16/17 04:46
Container ID: 1176584010-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/27/2017 3:26:50PM

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Results of **MWX**

Client Sample ID: **MWX**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584010
Lab Project ID: 1176584

Collection Date: 09/13/17 13:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 21:49
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:49
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 21:49
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:49
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:49
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:49
Benzene	0.280	J	0.400	0.120	ug/L	1		09/22/17 21:49
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 21:49
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 21:49
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 21:49
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 21:49

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Results of **MWX**

Client Sample ID: **MWX**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584010
Lab Project ID: 1176584

Collection Date: 09/13/17 13:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
cis-1,2-Dichloroethene	9.05		1.00	0.310	ug/L	1		09/22/17 21:49
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 21:49
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 21:49
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:49
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 21:49
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:49
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/25/17 14:55
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 21:49
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 21:49
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 21:49
Vinyl chloride	1.29		0.150	0.0500	ug/L	1		09/22/17 21:49
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 21:49
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/22/17 21:49
4-Bromofluorobenzene (surr)	97.9		85-114		%	1		09/22/17 21:49
Toluene-d8 (surr)	99.6		89-112		%	1		09/22/17 21:49

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Results of **MWX**

Client Sample ID: **MWX**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584010
Lab Project ID: 1176584

Collection Date: 09/13/17 13:00
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17230
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/25/17 14:55
Container ID: 1176584010-D

Prep Batch: VXX31373
Prep Method: SW5030B
Prep Date/Time: 09/25/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 21:49
Container ID: 1176584010-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584011
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		09/15/17 21:26
Surrogates								
4-Bromofluorobenzene (surr)	90.1		50-150		%	1		09/15/17 21:26

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 09/15/17 21:26
Container ID: 1176584011-A

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 09/15/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584011
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:12
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:12
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/22/17 19:12
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:12
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:12
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:12
Benzene	0.200	U	0.400	0.120	ug/L	1		09/22/17 19:12
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
Bromomethane	2.50	U	5.00	1.50	ug/L	1		09/22/17 19:12
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/22/17 19:12
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/22/17 19:12
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/22/17 19:12

Print Date: 09/27/2017 3:26:50PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584011
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/22/17 19:12
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/22/17 19:12
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:12
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		09/22/17 19:12
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:12
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/22/17 19:12
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Styrene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Toluene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/22/17 19:12
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/22/17 19:12
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/22/17 19:12
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/22/17 19:12
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		09/22/17 19:12
4-Bromofluorobenzene (surr)	98.2		85-114		%	1		09/22/17 19:12
Toluene-d8 (surr)	97.9		89-112		%	1		09/22/17 19:12

Print Date: 09/27/2017 3:26:50PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ARRC Terminal Reserve**
Lab Sample ID: 1176584011
Lab Project ID: 1176584

Collection Date: 09/12/17 11:47
Received Date: 09/14/17 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/22/17 19:12
Container ID: 1176584011-D

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 09/22/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1768748 [MXX/31056]
Blank Lab ID: 1414050

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584007

Results by **EP200.8**

Parameter	Results	LOQ/CL	DL	Units
Aluminum	10.0U	20.0	6.20	ug/L
Antimony	0.500U	1.00	0.310	ug/L
Arsenic	2.50U	5.00	1.50	ug/L
Barium	1.50U	3.00	0.940	ug/L
Beryllium	0.200U	0.400	0.130	ug/L
Cadmium	0.250U	0.500	0.150	ug/L
Calcium	250U	500	150	ug/L
Chromium	1.00U	2.00	0.620	ug/L
Cobalt	2.00U	4.00	1.20	ug/L
Copper	0.500U	1.00	0.310	ug/L
Iron	125U	250	78.0	ug/L
Lead	0.100U	0.200	0.0620	ug/L
Magnesium	25.0U	50.0	15.0	ug/L
Manganese	0.500U	1.00	0.310	ug/L
Molybdenum	1.00U	2.00	0.620	ug/L
Nickel	1.00U	2.00	0.620	ug/L
Phosphorus	100U	200	62.0	ug/L
Potassium	250U	500	150	ug/L
Selenium	2.50U	5.00	1.50	ug/L
Silicon	500U	1000	310	ug/L
Silver	0.500U	1.00	0.310	ug/L
Sodium	250U	500	150	ug/L
Thallium	0.500U	1.00	0.310	ug/L
Tin	0.500U	1.00	0.310	ug/L
Titanium	12.5U	25.0	7.75	ug/L
Vanadium	10.0U	20.0	6.20	ug/L
Zinc	2.50U	5.00	2.50	ug/L

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Method Blank

Blank ID: MB for HBN 1768748 [MXX/31056]
Blank Lab ID: 1414050

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584007

Results by **EP200.8**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: MMS9946
Analytical Method: EP200.8
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/21/2017 7:21:14AM

Prep Batch: MXX31056
Prep Method: E200.2
Prep Date/Time: 9/19/2017 8:15:53AM
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL

Analytical Batch: MMS9952
Analytical Method: EP200.8
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/25/2017 1:09:36PM

Prep Batch: MXX31056
Prep Method: E200.2
Prep Date/Time: 9/19/2017 8:15:53AM
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [MXX31056]
Blank Spike Lab ID: 1414051
Date Analyzed: 09/21/2017 07:24

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584007

Results by **EP200.8**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Aluminum	1000	987	99	(85-115)
Antimony	1000	1000	100	(85-115)
Arsenic	1000	991	99	(85-115)
Barium	1000	989	99	(85-115)
Beryllium	100	107	107	(85-115)
Cadmium	100	101	101	(85-115)
Calcium	10000	10400	104	(85-115)
Chromium	400	386	96	(85-115)
Cobalt	500	497	99	(85-115)
Copper	1000	1050	105	(85-115)
Iron	5000	5180	104	(85-115)
Lead	1000	995	100	(85-115)
Magnesium	10000	9790	98	(85-115)
Manganese	500	508	102	(85-115)
Molybdenum	400	376	94	(85-115)
Nickel	1000	1020	102	(85-115)
Phosphorus	500	525	105	(85-115)
Potassium	10000	9850	99	(85-115)
Selenium	1000	1040	104	(85-115)
Silver	100	101	101	(85-115)
Sodium	10000	9740	97	(85-115)
Thallium	10	9.80	98	(85-115)
Tin	100	96.3	96	(85-115)
Titanium	100	96.5	97	(85-115)
Vanadium	200	197	99	(85-115)
Zinc	1000	1040	104	(85-115)
Silicon	10000	9810	98	(85-115)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [MXX31056]
Blank Spike Lab ID: 1414051
Date Analyzed: 09/25/2017 13:12

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584007

Results by **EP200.8**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL

Batch Information

Analytical Batch: **MMS9946**
Analytical Method: **EP200.8**
Instrument: **Perkin Elmer Nexlon P5**
Analyst: **VDL**

Prep Batch: **MXX31056**
Prep Method: **E200.2**
Prep Date/Time: **09/19/2017 08:15**
Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

Analytical Batch: **MMS9952**
Analytical Method: **EP200.8**
Instrument: **Perkin Elmer Nexlon P5**
Analyst: **VDL**

Prep Batch: **MXX31056**
Prep Method: **E200.2**
Prep Date/Time: **09/19/2017 08:15**
Spike Init Wt./Vol.: 10000 ug/L Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1414055
MS Sample ID: 1414056 MS
MSD Sample ID:

Analysis Date: 09/21/2017 8:12
Analysis Date: 09/21/2017 8:15
Analysis Date:
Matrix: Drinking Water

QC for Samples: 1176584007

Results by **EP200.8**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Aluminum	52.1	1000	1010	96				70-130		
Antimony	0.500U	1000	1020	102				70-130		
Arsenic	2.50U	1000	1020	102				70-130		
Barium	21.8	1000	1030	101				70-130		
Beryllium	0.200U	100	106	106				70-130		
Cadmium	0.250U	100	101	101				70-130		
Calcium	4900	10000	15300	104				70-130		
Chromium	1.00U	400	407	102				70-130		
Cobalt	2.00U	500	509	102				70-130		
Copper	37.3	1000	1060	103				70-130		
Iron	125U	5000	5390	108				70-130		
Lead	2.13	1000	1000	100				70-130		
Magnesium	1980	10000	11700	97				70-130		
Manganese	16.6	500	526	102				70-130		
Molybdenum	1.00U	400	399	100				70-130		
Nickel	1.24J	1000	1070	107				70-130		
Phosphorus	1040	500	1580	109				70-130		
Potassium	1430	10000	11500	101				70-130		
Selenium	2.50U	1000	1050	105				70-130		
Silver	0.500U	100	103	103				70-130		
Sodium	20300	10000	31700	114				70-130		
Thallium	0.500U	10.0	9.89	99				70-130		
Tin	0.500U	100	98.8	99				70-130		
Titanium	12.5U	100	102	102				70-130		
Vanadium	10.0U	200	215	107				70-130		
Zinc	5.58	1000	1070	106				70-130		
Silicon	9400	10000	20900	115				70-130		

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Matrix Spike Summary

Original Sample ID: 1414055
MS Sample ID: 1414056 MS
MSD Sample ID:

Analysis Date: 09/25/2017 13:15
Analysis Date: 09/25/2017 13:18
Analysis Date:
Matrix: Drinking Water

QC for Samples: 1176584007

Results by **EP200.8**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: MMS9946
Analytical Method: EP200.8
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/21/2017 8:15:22AM

Prep Batch: MXX31056
Prep Method: DW Digest for Metals on ICP-MS
Prep Date/Time: 9/19/2017 8:15:53AM
Prep Initial Wt./Vol.: 20.00mL
Prep Extract Vol: 50.00mL

Analytical Batch: MMS9952
Analytical Method: EP200.8
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 9/25/2017 1:18:45PM

Prep Batch: MXX31056
Prep Method: DW Digest for Metals on ICP-MS
Prep Date/Time: 9/19/2017 8:15:53AM
Prep Initial Wt./Vol.: 20.00mL
Prep Extract Vol: 50.00mL

Print Date: 09/27/2017 3:26:56PM

Method Blank

Blank ID: MB for HBN 1768892 [MXX/31072]
Blank Lab ID: 1414725

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584007

Results by **EP245.1**

Parameter	Results	LOQ/CL	DL	Units
Mercury	0.100U	0.200	0.0620	ug/L

Batch Information

Analytical Batch: MCV5851
Analytical Method: EP245.1
Instrument: PSA Millennium mercury AA
Analyst: TMA
Analytical Date/Time: 9/20/2017 6:13:18PM

Prep Batch: MXX31072
Prep Method: METHOD
Prep Date/Time: 9/20/2017 12:00:00PM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 50 mL

Print Date: 09/27/2017 3:26:57PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [MXX31072]
Blank Spike Lab ID: 1414726
Date Analyzed: 09/20/2017 18:16

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584007

Results by **EP245.1**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Mercury	4	3.47	87	(85-115)

Batch Information

Analytical Batch: **MCV5851**
Analytical Method: **EP245.1**
Instrument: **PSA Millennium mercury AA**
Analyst: **TMA**

Prep Batch: **MXX31072**
Prep Method: **METHOD**
Prep Date/Time: **09/20/2017 12:00**
Spike Init Wt./Vol.: 4 ug/L Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/27/2017 3:26:59PM

Matrix Spike Summary

Original Sample ID: 1176597001
MS Sample ID: 1414727 MS
MSD Sample ID:

QC for Samples: 1176584007

Analysis Date: 09/20/2017 19:00
Analysis Date: 09/20/2017 19:03
Analysis Date:
Matrix: Water (Surface, Eff., Ground)

Results by **EP245.1**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Mercury	0.100U	8.00	6.85	86				70-130		

Batch Information

Analytical Batch: MCV5851
Analytical Method: EP245.1
Instrument: PSA Millennium mercury AA
Analyst: TMA
Analytical Date/Time: 9/20/2017 7:03:44PM

Prep Batch: MXX31072
Prep Method: Digestion Mercury 245.1 (W)
Prep Date/Time: 9/20/2017 12:00:00PM
Prep Initial Wt./Vol.: 25.00mL
Prep Extract Vol: 50.00mL

Print Date: 09/27/2017 3:27:00PM

Method Blank

Blank ID: MB for HBN 1768454 [VXX/31306]
Blank Lab ID: 1413321

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	90.4	50-150		%

Batch Information

Analytical Batch: VFC13883
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 9/15/2017 8:48:00PM

Prep Batch: VXX31306
Prep Method: SW5030B
Prep Date/Time: 9/15/2017 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 1176584 [VXX31306]
Blank Spike Lab ID: 1413324
Date Analyzed: 09/16/2017 01:16

Spike Duplicate ID: LCSD for HBN 1176584 [VXX31306]
Spike Duplicate Lab ID: 1413325
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

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	1.08	108	1.00	1.04	104	(60-120)	4.10	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	92.3	92	0.0500	92.2	92	(50-150)	0.15	

Batch Information

Analytical Batch: **VFC13883**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ST**

Prep Batch: **VXX31306**
Prep Method: **SW5030B**
Prep Date/Time: **09/15/2017 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 1769061 [VXX/31363]
Blank Lab ID: 1415560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1769061 [VXX/31363]
Blank Lab ID: 1415560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.310J	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	97.8	89-112		%

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Method Blank

Blank ID: MB for HBN 1769061 [VXX/31363]
Blank Lab ID: 1415560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS17224
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: FDR
Analytical Date/Time: 9/22/2017 5:22:00PM

Prep Batch: VXX31363
Prep Method: SW5030B
Prep Date/Time: 9/22/2017 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [VXX31363]
Blank Spike Lab ID: 1415561
Date Analyzed: 09/22/2017 17:40

Spike Duplicate ID: LCSD for HBN 1176584 [VXX31363]
Spike Duplicate Lab ID: 1415562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

	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	31.4	105	30	30.9	103	(78-124)	1.70	(< 20)
1,1,1-Trichloroethane	30	30.5	102	30	30.6	102	(74-131)	0.33	(< 20)
1,1,2,2-Tetrachloroethane	30	29.8	99	30	29.2	98	(71-121)	1.90	(< 20)
1,1,2-Trichloroethane	30	30.5	102	30	29.8	99	(80-119)	2.10	(< 20)
1,1-Dichloroethane	30	29.4	98	30	29.4	98	(77-125)	0.10	(< 20)
1,1-Dichloroethene	30	29.5	98	30	29.6	99	(71-131)	0.27	(< 20)
1,1-Dichloropropene	30	30.2	101	30	30.3	101	(79-125)	0.40	(< 20)
1,2,3-Trichlorobenzene	30	31.6	105	30	30.8	103	(69-129)	2.40	(< 20)
1,2,3-Trichloropropane	30	30.6	102	30	29.4	98	(73-122)	4.00	(< 20)
1,2,4-Trichlorobenzene	30	31.4	105	30	30.7	102	(69-130)	2.00	(< 20)
1,2,4-Trimethylbenzene	30	31.5	105	30	30.9	103	(79-124)	1.80	(< 20)
1,2-Dibromo-3-chloropropane	30	30.9	103	30	29.6	99	(62-128)	4.20	(< 20)
1,2-Dibromoethane	30	30.5	102	30	30.0	100	(77-121)	1.70	(< 20)
1,2-Dichlorobenzene	30	30.0	100	30	29.5	98	(80-119)	1.90	(< 20)
1,2-Dichloroethane	30	29.3	98	30	28.8	96	(73-128)	1.90	(< 20)
1,2-Dichloropropane	30	30.0	100	30	29.3	98	(78-122)	2.60	(< 20)
1,3,5-Trimethylbenzene	30	31.6	105	30	31.7	106	(75-124)	0.16	(< 20)
1,3-Dichlorobenzene	30	30.7	102	30	30.3	101	(80-119)	1.30	(< 20)
1,3-Dichloropropane	30	30.4	101	30	29.7	99	(80-119)	2.20	(< 20)
1,4-Dichlorobenzene	30	30.1	100	30	29.8	99	(79-118)	1.30	(< 20)
2,2-Dichloropropane	30	31.2	104	30	31.1	104	(60-139)	0.13	(< 20)
2-Butanone (MEK)	90	83.6	93	90	82.9	92	(56-143)	0.90	(< 20)
2-Chlorotoluene	30	30.7	102	30	29.9	100	(79-122)	2.40	(< 20)
2-Hexanone	90	92.5	103	90	90.5	101	(57-139)	2.20	(< 20)
4-Chlorotoluene	30	30.7	102	30	30.1	100	(78-122)	1.70	(< 20)
4-Isopropyltoluene	30	31.2	104	30	31.4	105	(77-127)	0.54	(< 20)
4-Methyl-2-pentanone (MIBK)	90	93.0	103	90	92.9	103	(67-130)	0.11	(< 20)
Benzene	30	29.2	97	30	29.5	98	(79-120)	0.89	(< 20)
Bromobenzene	30	29.8	99	30	29.4	98	(80-120)	1.50	(< 20)
Bromochloromethane	30	30.8	103	30	30.6	102	(78-123)	0.85	(< 20)
Bromodichloromethane	30	30.9	103	30	30.6	102	(79-125)	1.00	(< 20)
Bromoform	30	31.7	106	30	31.0	103	(66-130)	2.40	(< 20)
Bromomethane	30	37.4	125	30	35.1	117	(53-141)	6.30	(< 20)
Carbon disulfide	45	42.1	93	45	42.5	94	(64-133)	0.97	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [VXX31363]
Blank Spike Lab ID: 1415561
Date Analyzed: 09/22/2017 17:40

Spike Duplicate ID: LCSD for HBN 1176584 [VXX31363]
Spike Duplicate Lab ID: 1415562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	30.9	103	30	31.0	103	(72-136)	0.49	(< 20)
Chlorobenzene	30	29.3	98	30	28.9	96	(82-118)	1.20	(< 20)
Chloroethane	30	31.7	106	30	31.8	106	(60-138)	0.50	(< 20)
Chloroform	30	30.1	100	30	30.0	100	(79-124)	0.43	(< 20)
Chloromethane	30	29.4	98	30	30.7	102	(50-139)	4.30	(< 20)
cis-1,2-Dichloroethene	30	29.3	98	30	29.6	99	(78-123)	0.85	(< 20)
cis-1,3-Dichloropropene	30	30.7	102	30	30.5	102	(75-124)	0.85	(< 20)
Dibromochloromethane	30	31.4	105	30	30.6	102	(74-126)	2.40	(< 20)
Dibromomethane	30	29.4	98	30	30.4	101	(79-123)	3.10	(< 20)
Dichlorodifluoromethane	30	28.7	96	30	28.7	96	(32-152)	0.07	(< 20)
Ethylbenzene	30	30.3	101	30	29.9	100	(79-121)	1.30	(< 20)
Freon-113	45	45.2	100	45	45.7	102	(70-136)	1.20	(< 20)
Hexachlorobutadiene	30	31.2	104	30	31.9	106	(66-134)	2.20	(< 20)
Isopropylbenzene (Cumene)	30	31.2	104	30	30.8	103	(72-131)	1.30	(< 20)
Methylene chloride	30	29.6	99	30	29.4	98	(74-124)	0.37	(< 20)
Methyl-t-butyl ether	45	45.2	101	45	44.7	99	(71-124)	1.10	(< 20)
Naphthalene	30	31.5	105	30	31.0	103	(61-128)	1.40	(< 20)
n-Butylbenzene	30	31.9	106	30	31.8	106	(75-128)	0.38	(< 20)
n-Propylbenzene	30	30.7	102	30	30.2	101	(76-126)	1.70	(< 20)
o-Xylene	30	30.6	102	30	30.3	101	(78-122)	1.20	(< 20)
P & M -Xylene	60	61.4	102	60	60.9	101	(80-121)	0.85	(< 20)
sec-Butylbenzene	30	31.5	105	30	31.5	105	(77-126)	0.25	(< 20)
Styrene	30	30.0	100	30	29.4	98	(78-123)	2.30	(< 20)
tert-Butylbenzene	30	31.3	104	30	31.1	104	(78-124)	0.51	(< 20)
Tetrachloroethene	30	30.1	100	30	29.6	99	(74-129)	1.90	(< 20)
Toluene	30	27.8	93	30	27.4	91	(80-121)	1.60	(< 20)
trans-1,2-Dichloroethene	30	29.0	97	30	29.2	97	(75-124)	0.48	(< 20)
trans-1,3-Dichloropropene	30	32.0	107	30	31.2	104	(73-127)	2.60	(< 20)
Trichloroethene	30	29.9	100	30	29.8	99	(79-123)	0.27	(< 20)
Trichlorofluoromethane	30	32.0	107	30	31.9	106	(65-141)	0.19	(< 20)
Vinyl acetate	30	29.6	99	30	29.4	98	(54-146)	0.68	(< 20)
Vinyl chloride	30	29.9	100	30	30.4	101	(58-137)	1.60	(< 20)
Xylenes (total)	90	92.0	102	90	91.1	101	(79-121)	0.97	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [VXX31363]
Blank Spike Lab ID: 1415561
Date Analyzed: 09/22/2017 17:40

Spike Duplicate ID: LCSD for HBN 1176584 [VXX31363]
Spike Duplicate Lab ID: 1415562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584001, 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584008, 1176584009, 1176584010, 1176584011

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	102	102	30	101	101	(81-118)	0.43	
4-Bromofluorobenzene (surr)	30	98.2	98	30	98	98	(85-114)	0.20	
Toluene-d8 (surr)	30	100	100	30	99.1	99	(89-112)	0.94	

Batch Information

Analytical Batch: **VMS17224**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **FDR**

Prep Batch: **VXX31363**
Prep Method: **SW5030B**
Prep Date/Time: **09/22/2017 00:00**
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 1769161 [VXX/31373]
Blank Lab ID: 1416047

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584008, 1176584009, 1176584010

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Naphthalene	0.500U	1.00	0.310	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	109	81-118		%
4-Bromofluorobenzene (surr)	109	85-114		%
Toluene-d8 (surr)	96.5	89-112		%

Batch Information

Analytical Batch: VMS17230
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 9/25/2017 11:48:00AM

Prep Batch: VXX31373
Prep Method: SW5030B
Prep Date/Time: 9/25/2017 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [VXX31373]
Blank Spike Lab ID: 1416048
Date Analyzed: 09/25/2017 12:06

Spike Duplicate ID: LCSD for HBN 1176584 [VXX31373]
Spike Duplicate Lab ID: 1416049
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584008, 1176584009, 1176584010

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Naphthalene	30	28.4	95	30	30.5	102	(61-128)	7.30	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.4	98	30	98.1	98	(81-118)	0.27	
4-Bromofluorobenzene (surr)	30	98.8	99	30	96.5	97	(85-114)	2.30	
Toluene-d8 (surr)	30	101	101	30	101	101	(89-112)	0.03	

Batch Information

Analytical Batch: **VMS17230**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **FDR**

Prep Batch: **VXX31373**
Prep Method: **SW5030B**
Prep Date/Time: **09/25/2017 00:00**
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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Matrix Spike Summary

Original Sample ID: 1416050
MS Sample ID: 1416051 MS
MSD Sample ID: 1416052 MSD

Analysis Date: 09/25/2017 16:40
Analysis Date: 09/25/2017 20:45
Analysis Date: 09/25/2017 21:03
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584008, 1176584009, 1176584010

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Naphthalene	1.29	30.0	28.4	90	30.0	28.9	92	61-128	1.80	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.4	98	30.0	29.8	99	81-118	1.60	
4-Bromofluorobenzene (surr)		30.0	28.9	96	30.0	29.0	97	85-114	0.62	
Toluene-d8 (surr)		30.0	30.4	101	30.0	30.3	101	89-112	0.43	

Batch Information

Analytical Batch: VMS17230
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 9/25/2017 8:45:00PM

Prep Batch: VXX31373
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 9/25/2017 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

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Method Blank

Blank ID: MB for HBN 1768348 [XXX/38429]
Blank Lab ID: 1413017

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584007, 1176584008, 1176584009, 1176584010

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	85.1	60-120		%

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: JMG
Analytical Date/Time: 9/15/2017 7:30:00PM

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 9/15/2017 7:59:30AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [XXX38429]
Blank Spike Lab ID: 1413018
Date Analyzed: 09/15/2017 19:50

Spike Duplicate ID: LCSD for HBN 1176584 [XXX38429]
Spike Duplicate Lab ID: 1413019
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584007, 1176584008, 1176584009, 1176584010

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	20	19.4	97	20	19.7	98	(75-125)	1.70	(< 20)
Surrogates									
5a Androstane (surr)	0.4	98.3	98	0.4	102	102	(60-120)	3.70	

Batch Information

Analytical Batch: **XFC13800**
Analytical Method: **AK102**
Instrument: **HP 7890A FID SV E F**
Analyst: **JMG**

Prep Batch: **XXX38429**
Prep Method: **SW3520C**
Prep Date/Time: **09/15/2017 07:59**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1768348 [XXX/38429]
Blank Lab ID: 1413017

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584007, 1176584008, 1176584009, 1176584010

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	90.2	60-120		%

Batch Information

Analytical Batch: XFC13800
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: JMG
Analytical Date/Time: 9/15/2017 7:30:00PM

Prep Batch: XXX38429
Prep Method: SW3520C
Prep Date/Time: 9/15/2017 7:59:30AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1176584 [XXX38429]
Blank Spike Lab ID: 1413018
Date Analyzed: 09/15/2017 19:50

Spike Duplicate ID: LCSD for HBN 1176584 [XXX38429]
Spike Duplicate Lab ID: 1413019
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1176584002, 1176584003, 1176584004, 1176584005, 1176584006, 1176584007, 1176584008, 1176584009, 1176584010

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	19.8	99	20	19.7	99	(60-120)	0.39	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	91.1	91	0.4	89.8	90	(60-120)	1.50	

Batch Information

Analytical Batch: **XFC13800**
Analytical Method: **AK103**
Instrument: **HP 7890A FID SV E F**
Analyst: **JMG**

Prep Batch: **XXX38429**
Prep Method: **SW3520C**
Prep Date/Time: **09/15/2017 07:59**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 09/27/2017 3:27:16PM

SGS

SGS North America Inc.
CHAIN OF CUSTODY RECOR

1176584

Locations Nationwide
Alaska Maryland
New Jersey New York
North Carolina

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page ____ of ____

Section 1

CLIENT: Restoration Science

CONTACT: Emily Mahanna — PHONE #: 907-278-1023

PROJECT NAME: ARRC Terminal Reserve — Project/ PWSID/ PERMIT#: 17-1703

REPORTS TO: Emily Mahanna — E-MAIL: emahanna@restorsci.com

INVOICE TO: Restoration Science — QUOTE #: — P.O. #:

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Pres: Type: Comp Grab MI (Multi-incremental)	HCl AK102/103 - DRO/RRO	HCl AK101 - GRO	HCl SW8260C - VOC	HCl SW8260C - VOC	HCl AK102/103 - DRO/RRO	HCl AK101 - GRO	HCl SW8260C - VOC	HNO3 200.8/245.1 - Total Metals			REMARKS/ LOC ID
(1) A-C	DPA32	9/13/17	9:30	Water	3	G			✓								
(2) A-H	MWB17	9/12/17	11:47	H2O	8	G	✓	✓	✓								
(3) A-H	MWB09	9/12/17	13:30	H2O	8	G	✓	✓	✓								
(4) A-H	MW24	9/12/17	12:55	H2O	8	G	✓	✓	✓								
(5) A-H	MWA22	9/12/17	15:00	H2O	8	G	✓	✓	✓								
(6) A-H	MWA07	9/14/17	9:50	H2O	8	G	✓	✓	✓								
(7) A-C	MWA05	9/14/17	11:10	H2O	3	G	✓							✓			
(8) A-H	~~DUP~~ MWE06	9/13/17	15:00	H2O	8	G	✓	✓	✓								
(9) A-~~HG~~	~~DUP~~ DPB04	9/13/17	13:45	H2O	8	G	✓	✓	✓								
(10) A-H	UWX	9/13/17	13:00	H2O	8	G	✓	✓	✓			(11) A-~~H~~F		H80	9/14/17		

9/14/17

Section 5

Relinquished By:	Date	Time	Received By:
(1)	9/14/17	14:56	
(2)			
(3)			
(4)	9/14/17	1450	Received For Laboratory By: Collie

Section 4

DOD Project? Yes No

Cooler ID: _____

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:
* Analyze Trip blanks! Hold del.

Temp Blank °C: 2.5 D24 or Ambient [ ]

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: (Check) Hand Delivered [ ] Commerical Delivered [ ]

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

SGS

Returned Bottles Inventory

Name of individual returning bottles: Emily Mahanna

Date Received: 9/14/17

Client Name: Restoration Science

Received by: HD

Project Name: ARRC Terminal Reserve

SGS PM: CGH

HDPE/Nalgene:	1-L					
	500-ml					
	250-ml or 8-oz					
	125-ml or 4-oz					
	60-ml or 2-oz					
	other					
amber glass:	1-L					
	500-ml					
	250-ml or 8-oz					
	125-ml or 4-oz with or without septa					
	40-ml VOA vial	13				
	other					
Subtotal:		13				

Note: Returned bottles (regardless of size/pres.) are billed back at $4/bottle ***unless otherwise quoted*** *.*

Amount to Invoice Client $: 52.00

WO#: 1176584

e-Sample Receipt Form

SGS Workorder #: **1176584**

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 2.5 °C Therm. ID: D24
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
If samples 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".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC.	Yes	
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	No	Sample 9 only had 5 volatile vials not 6, log in 2GRO, and 3VOC.
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition
1176584001-A	HCL to pH < 2	OK
1176584001-B	HCL to pH < 2	OK
1176584001-C	HCL to pH < 2	OK
1176584002-A	HCL to pH < 2	OK
1176584002-B	HCL to pH < 2	OK
1176584002-C	HCL to pH < 2	OK
1176584002-D	HCL to pH < 2	OK
1176584002-E	HCL to pH < 2	OK
1176584002-F	HCL to pH < 2	OK
1176584002-G	HCL to pH < 2	OK
1176584002-H	HCL to pH < 2	OK
1176584003-A	HCL to pH < 2	OK
1176584003-B	HCL to pH < 2	OK
1176584003-C	HCL to pH < 2	OK
1176584003-D	HCL to pH < 2	OK
1176584003-E	HCL to pH < 2	OK
1176584003-F	HCL to pH < 2	OK
1176584003-G	HCL to pH < 2	OK
1176584003-H	HCL to pH < 2	OK
1176584004-A	HCL to pH < 2	OK
1176584004-B	HCL to pH < 2	OK
1176584004-C	HCL to pH < 2	OK
1176584004-D	HCL to pH < 2	OK
1176584004-E	HCL to pH < 2	OK
1176584004-F	HCL to pH < 2	OK
1176584004-G	HCL to pH < 2	OK
1176584004-H	HCL to pH < 2	OK
1176584005-A	HCL to pH < 2	OK
1176584005-B	HCL to pH < 2	OK
1176584005-C	HCL to pH < 2	OK
1176584005-D	HCL to pH < 2	OK
1176584005-E	HCL to pH < 2	OK
1176584005-F	HCL to pH < 2	OK
1176584005-G	HCL to pH < 2	OK
1176584005-H	HCL to pH < 2	OK
1176584006-A	HCL to pH < 2	OK
1176584006-B	HCL to pH < 2	OK
1176584006-C	HCL to pH < 2	OK
1176584006-D	HCL to pH < 2	OK
1176584006-E	HCL to pH < 2	OK
1176584006-F	HCL to pH < 2	OK
1176584006-G	HCL to pH < 2	OK
1176584006-H	HCL to pH < 2	OK
1176584007-A	HCL to pH < 2	OK
1176584007-B	HCL to pH < 2	OK
1176584007-C	HNO3 to pH < 2	OK
1176584008-A	HCL to pH < 2	OK
1176584008-B	HCL to pH < 2	OK
1176584008-C	HCL to pH < 2	OK
1176584008-D	HCL to pH < 2	OK
1176584008-E	HCL to pH < 2	OK
1176584008-F	HCL to pH < 2	OK
1176584008-G	HCL to pH < 2	OK
1176584008-H	HCL to pH < 2	OK
1176584009-A	HCL to pH < 2	OK
1176584009-B	HCL to pH < 2	OK
1176584009-C	HCL to pH < 2	OK
1176584009-D	HCL to pH < 2	OK
1176584009-E	HCL to pH < 2	OK
1176584009-F	HCL to pH < 2	OK
1176584009-G	HCL to pH < 2	OK
1176584010-A	HCL to pH < 2	OK
1176584010-B	HCL to pH < 2	OK
1176584010-C	HCL to pH < 2	OK
1176584010-D	HCL to pH < 2	OK
1176584010-E	HCL to pH < 2	OK
1176584010-F	HCL to pH < 2	OK
1176584010-G	HCL to pH < 2	OK
1176584010-H	HCL to pH < 2	OK
1176584011-A	HCL to pH < 2	OK
1176584011-B	HCL to pH < 2	OK
1176584011-C	HCL to pH < 2	OK
1176584011-D	HCL to pH < 2	OK
1176584011-E	HCL to pH < 2	OK
1176584011-F	HCL to pH < 2	OK

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM- The container was received damaged.
FR- The container was received frozen and not usable for Bacteria or BOD analyses.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Attachment E:

ADEC Lab Review Checklist

Laboratory Data Review Checklist

Completed by: Emily Mahanna

Title: ARRC – Terminal Reserve Date: 11/9/2017

CS Report Name: ARRC Terminal Reserve Report Date: 9/27/2017

Consultant Firm: Restoration Science & Engineering, LLC

Laboratory Name: SGS North America, Inc. Laboratory Report Number: 1176584

ADEC File Number: 2100.38.447 ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ☒Yes No NA (Please explain.) Comments:

      SGS North America, Inc. located in Anchorage, Alaska.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐Yes ☐ No ☒NA (Please explain.) Comments:

      All samples were analyzed at SGS North America

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ☒Yes No NA (Please explain.) Comments:

      A copy of the signed COC is provided at the end of this document.

   b. Correct analyses requested?
      ☒Yes No NA (Please explain.) Comments:

      SGS completed the requested analyses requested on the COC.

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      ☒Yes ☐ No NA (Please explain.) Comments:

      The sample cooler temperature blank was 2.5°C when delivered to SGS.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      ☒**Yes** ☐ No ☐ NA (Please explain.) Comments:

      Waters were acidified.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
☒Yes ☐ No NA (Please explain.) Comments:

All samples were received in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
☒Yes ☐ No ☐NA (Please explain.) Comments:

Sample DBP04 contained only 2 GRO vials instead of 3.

e. Data quality or usability affected? (Please explain.)
Comments:

Data quality and usability was not affected, enough sample volume was collected to proceed with the GRO analysis.

4. Case Narrative
a. Present and understandable?
☒Yes No ☐ NA (Please explain.) Comments:

The case narrative is present and understandable on page 2 of the lab report.

b. Discrepancies, errors or QC failures identified by the lab?
☒Yes ☐ No ☐NA (Please explain.) Comments:

MWA05 metals LOQ for multiple analytes did not meet QC criteria due to matrix interference.

c. Were all corrective actions documented?
☒ Yes ☐ No ☐NA (Please explain.) Comments:

No corrective actions were required.

d. What is the effect on data quality/usability according to the case narrative?
Comments:

There is no effect on data quality and usability, the analytes with non-detects had LOQs below ADEC Groundwater Cleanup Levels.

5. Samples Results
a. Correct analyses performed/reported as requested on COC?
☒Yes No NA (Please explain.) Comments:

The correct analyses were performed and reported as requested on the COC.

b. All applicable holding times met?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?
☐Yes ☐ No ☒NA (Please explain.) Comments:

All samples were water samples.

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

SGS refers to the PQL as the LOQ and reports data below the PQL but above the detection limit (DL) as estimated results with a "J". Constituents that were analyzed for but not detected are reported as a value equal to 2 times the DL and flagged with a "U". All PQLs were below the cleanup level.

e. Data quality or usability affected?
Comments:

There is no effect on data quality or usability.

6. QC Samples
a. Method Blank
i. One method blank reported per matrix, analysis and 20 samples?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

There is one method blank for each requested analyses and matrix per 20 samples submitted.

ii. All method blank results less than PQL?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

All method blank results are less than the LOQ (PQL).

iii. If above PQL, what samples are affected?
Comments:

No method blank samples were reported above the LOQ (PQL).

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
☐Yes ☐ No ☒NA (Please explain.) Comments:

No method blank samples were reported above the LOQ (PQL).

v. Data quality or usability affected? (Please explain.)

Data quality or usability was not affected.

c. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☒Yes ☐ No ☐ NA (Please explain.) Comments:

One LCS and LCSDs were performed per analysis (less than 20 samples submitted).

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☒ Yes ☐ No ☐NA (Please explain.) Comments:

One sample duplicated was reported per matrix, analysis and 20 samples.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

All percent recoveries were within method and laboratory limits.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
☐Yes ☒ No ☐ NA (Please explain.) Comments:

Percent recoveries for 1,2-dibromo-3-chloropropane (21.00%), 2-Butanone (MEK) (29.40 %) and 4-Meythl-2-pentanone (MIBK) (20.30%) exceeded laboratory limits.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments:

Sample RSE-4 was the only sample affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☒ Yes ☐ No ☐NA (Please explain.) Comments:

Data flags are clearly defined and described in the case narrative. In the exceedances described above, data is flagged with an asterisks (*).

vii. Data quality or usability affected? (Use comment box to explain.)
Comments:

No corrective actions were required. All affected analytes were not detected within RSE-4.

d. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Surrogate recoveries are reported for all organic analyses.

☒Yes ☐ No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
☒Yes ☐ No ☐ NA (Please explain.) Comments:

All %R were reported and within limits.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
☐ Yes ☐ No ☒NA (Please explain.) Comments:

No samples had failed surrogate recoveries.

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:

Data quality or usability not affected

e. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☒Yes ☐ No NA (Please explain.) Comments:

One trip blank included per sample cooler containing volatile samples.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
☒Yes No ☐ NA (Please explain.) Comments:

Trip blank is clearly indicated on the COC.

iii. All results less than PQL?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

All results are non-detect at the LOQ (PQL).

iv. If above PQL, what samples are affected?
Comments:

No affected samples.

v. Data quality or usability affected? (Please explain.)
Comments:

Data quality and usability not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

RSE-X is a bling duplicate of RSE-3.

ii. Submitted blind to lab?
☒Yes ☐ No ☐ NA (Please explain.) Comments:

Duplicate samples were submitted blind to the lab.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒Yes ☐ No NA (Please explain.) Comments:

All RPDs were less than 30%.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality or usability is not affected.

g. Decontamination or Equipment Blank (If not used explain why).

Yes ☒ No NA (Please explain.) Comments:

An equipment blank was not used because all tubing was clean and dedicated to each well, and the submersible pump was thoroughly decontaminated between each well use.

i. All results less than PQL?

Yes No ☒NA (Please explain.) Comments:

There are no decontamination or equipment blanks.

ii. If above PQL, what samples are affected?

Comments:

There are no decontamination equipment blanks.

Data quality or usability was not affected.

iii. Data quality or usability affected? (Please explain.)

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?
      ☒Yes No NA (Please explain.) Comments:

Data flags and qualifiers are defined appropriately. Page 4 of the lab report describes the qualifiers used.

Attachment F:

Field Notes

RSE GROUNDWATER SAMPLING FORM DATE: 9/12/17 WEATHER: Cloudy 55°F, Wind 0-5mph

PROJECT NAME: Terminal Reserve SITE LOCATION: Whitney Rd SAMPLER: E. Mahanna
PROJECT NO.: WELL NUMBER: MWA22 COMPANY: RSE
CONTACT #:

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 20.53' x3

B) DEPTH TO WATER FROM TOC (FT): 16.84' x3

C) COLUMN OF WATER IN WELL (FT): 3.69
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = ~~XX GAL/FT~~
2-IN = 0.17 GAL/FT

PURGE METHOD: Submersible pump
e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): 3.69'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.62
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 2 gallons

WATER OBSERVATIONS

dark brown, murky

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
14:50	—	—	1	9.59	5.30	0.629	0.443	0.31	—	1.5	169.∞
14:55	—	—	2	8.93	5.30	0.65	30.451	0.32	—	1.67	169.9

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
MWA22	9/12/17	15:00	E. Mahanna

SAMPLE ID: MWA22
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
DRO/RRO, GRO, VOCs

COMMENTS:
Well found w/ tubing in it. otherwise in good condition. Well cover will not shut.

* x3 = measured 3 times

RSE GROUNDWATER SAMPLING FORM DATE: 9/14/15 WEATHER: Rainy 55°F

PROJECT NAME: Terminal Reserve SITE LOCATION: Whitney + Ocean Park SAMPLER: E Mahanna
PROJECT NO.: WELL NUMBER: MWA05 COMPANY: RSE
CONTACT #: 907-278-1022

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 12.21' x3

B) DEPTH TO WATER FROM TOC (FT): 11.8' x3

C) COLUMN OF WATER IN WELL (FT): 0.41'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = XX GAL/FT
2-IN = 0.17 GAL/FT

PURGE METHOD: Submersible pump
*e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): 0.41'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.07 gallons
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 0.25 gallons

WATER OBSERVATIONS

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
11:05	—	—	0.5	10.04	5.74	0.320	0.229	0.15	—	1.54	91.3

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
MWA05	9/14/15	11:10	E Mahanna

SAMPLE ID: MWA05
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: N/A

LAB ANALYSIS REQUESTED:

~~GRO~~, DRO/RRO, ~~VOCs~~, Metals

COMMENTS:

Well was found as PVC w/ no cap or monument. Cut top part of PVC w/ Rock stuck in it, placed plug in well. Requires monument cap & to be cut down

* 3 ? Measured 3 times

* Well Ran dry after collection of DRO/RRO & Metals. Waited 45 mins. No recharge. Was unable to sample for VOCs & GRO

RSE GROUNDWATER SAMPLING FORM DATE: 9/12/17 WEATHER: Sunny 50°F

PROJECT NAME: Terminal Reserve SITE LOCATION: CPP Automotive SAMPLER:
PROJECT NO.: WELL NUMBER: MWB17 COMPANY: RSE
CONTACT #:

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 13.02' x3

B) DEPTH TO WATER FROM TOC (FT): 11.14' x3

C) COLUMN OF WATER IN WELL (FT): 1.88'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = XX GAL/FT
2-IN = 0.17 GAL/FT

PURGE METHOD: Submersible Pump
*e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): ~~1.88'~~ 1.88'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.32 gallons
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 1 gallon

WATER OBSERVATIONS

Brown turbid

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 55 Cc
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
11:42	—	—	0.5	10.25	5.32	0.751	0.539	0.37	—	5.02	167.5
11:45	—	—	1	10.26	5.32	0.729	0.524	0.36	—	4.58	158.0

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
MWB17	9/12/17	11:47	EM

SAMPLE ID: MWB17
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
DRO/RRO, GRO, VOCs

COMMENTS:
Well found in good condition, lid to well unable to close. 2" Well w/ Yellow Stickup

* x3 = Checked 3 times

RSE GROUNDWATER SAMPLING FORM DATE: 9/12/17 WEATHER: Cloudy 55°F Wind 0-5mph

PROJECT NAME: Terminal Reserve SITE LOCATION: Pacific Rim Decorators SAMPLER: E. Maharra
PROJECT NO.: WELL NUMBER: MW 24 COMPANY:
CONTACT #:

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 6-11'

B) DEPTH TO WATER FROM TOC (FT): 3.42 x3

C) COLUMN OF WATER IN WELL (FT): 2.69
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = XX GAL/FT
2-IN = 0.17 GAL/FT

PURGE METHOD: Submersible Pump
*e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): 2.69
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.46
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 1.5

WATER OBSERVATIONS

light Brown, strong Hydrocarbon Odor

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

	TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
12	12:47	—	—	0.5	12.97	5.37	0.524	0.401	0.25	—	1.43	-36.9
12	12:49	—	—	1.0	12.92	5.40	0.493	0.378	0.24	—	0.76	-48.2
12	12:53	—	—	1.5	12.83	5.41	0.487	0.367	0.24	—	0.70	-53.9

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
MW24	9/12/17	12:55	E. Maharra

SAMPLE ID: MW24
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
DRO/RRO, GRO, VOCs

COMMENTS:
Well found in good condition. Stickup is too high & needs to be cut down to achieve a level mount

* x3 = measured 3 times

RSE GROUNDWATER SAMPLING FORM DATE: 9/13/17 WEATHER: Cloudy 55°F Wind S-Omph

PROJECT NAME: Terminal Reserve SITE LOCATION: Post & Whitney Rd SAMPLER: E Mahanna
PROJECT NO.: WELL NUMBER: DPA32 COMPANY: RSE
CONTACT #: 907 278 1023

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 15.15' x 3

B) DEPTH TO WATER FROM TOC (FT): 12.56' x3

C) COLUMN OF WATER IN WELL (FT): 2.59'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = XX GAL/FT
2-IN = 0.17 GAL/FT

PURGE METHOD: ~~Submersible Pump~~ Perry Pump
*e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.15

E) COLUMN OF WATER IN WELL (FT): 2.59'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.39 gal
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 1.25 gal

WATER OBSERVATIONS

Clear

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
~~9:17~~	—	—	0.5	16.35	5.72	0.935	0.673	0.46	—	2.59	15.5

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
DPA32	9/13/17	9:30	E Mahanna

SAMPLE ID: DPA32
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: ✓ N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
VOCs

COMMENTS:
Found locked in good condition. 1.5" Well ⇒ 9:20 Purged dry after 0.5 gallons Perry Pump.
t x 3 = measured 3 times

Collected samples after allowing to recharge

RSE GROUNDWATER SAMPLING FORM DATE: 9/13/17 WEATHER: Cloudy Wind 5-10mph 55 °F

PROJECT NAME: Terminal Reserve **SITE LOCATION:** Behind DIU Factory **SAMPLER:**
PROJECT NO.: **WELL NUMBER:** DPB04 **COMPANY:**
CONTACT #:

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 25.07'

B) DEPTH TO WATER FROM TOC (FT): 12.11'

C) COLUMN OF WATER IN WELL (FT): 12.96'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION 1-in = XX GAL/FT 2-IN = 0.17 GAL/FT PURGE METHOD: Perry Pump

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.14 *e.g. peristaltic or bladder pump, Bailer

E) COLUMN OF WATER IN WELL (FT): ~~1.85'~~ 12.96' **WATER OBSERVATIONS**
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 1.8'
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 5.4

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
13:18	—	—	1	8.76	5.59	0.533	0.368	0.26	—	1.4	-2.7
13:25	—	—	2	9.12	5.76	0.527	0.357	0.26	—	1.5	-24.0
13:32	—	—	3	9.08	5.79	0.523	0.356	0.26	—	1.5	-25.1
13:39	—	—	4	9.09	5.81	0.524	0.358	0.25	—	1.53	-26.8
13:46	—	—	5	9.14	5.84	0.525	0.355	0.25	—	1.52	-27.1

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
DPB04	9/13/17	13:45	EMcharvica

SAMPLE ID: DPB04
FIELD DUPLICATE: MW-X 13:00
EQUIPMENT BLANK: N/A
TRIP BLANK: N/A

LAB ANALYSIS REQUESTED:
DRO/RRO, VOCs, GRO

COMMENTS:
Well found in good condition, #1.25" well => perry pump

RSE GROUNDWATER SAMPLING FORM **DATE:** 9/13/17 **WEATHER:**

PROJECT NAME: Terminal Reserve **SITE LOCATION:** **SAMPLER:** E. Mahanna
PROJECT NO.: **WELL NUMBER:** MWE06 **COMPANY:** RSE
CONTACT #: 907-278-1023

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 10.86'

B) DEPTH TO WATER FROM TOC (FT): 7.83'

C) COLUMN OF WATER IN WELL (FT): 3.03'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

~~1-in = XX GAL/FT~~
2-IN = 0.17 GAL/FT

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): 3.03'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 0.51
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 1.5 gallons

PURGE METHOD: Submersible Pump
*e.g. peristaltic or bladder pump, Bailer

WATER OBSERVATIONS

Hydrocarbon odor

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
12:00	—	—	1	12.18	5.35	0.827	0.621	0.40	—	0.50	-55.0
12:05	—	—	2	11.45	5.36	0.654	0.484	0.32	—	0.51	-55.2

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
9/13/17 MWE06		15:00	

SAMPLE ID: MWE06
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
GRO, DRO/RRO, VOCs

COMMENTS:

RSE GROUNDWATER SAMPLING FORM DATE: 9/14/17 WEATHER: Cloudy 50°F Wind 0-5mph

PROJECT NAME: Terminal Reserve **SITE LOCATION:** WRIGHT AUTO **SAMPLER:** E Mahanna
PROJECT NO.: **WELL NUMBER:** MWA07 **COMPANY:** RSE
CONTACT #: 9072781023

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 19.95' x 3

B) DEPTH TO WATER FROM TOC (FT): 11.75' x 3

C) COLUMN OF WATER IN WELL (FT): 8.2'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

PURGE INFORMATION

1-in = XX GAL/FT
2-IN = 0.17 GAL/FT

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

PURGE METHOD: Submersible pump
*e.g. peristaltic or bladder pump, Bailer

E) COLUMN OF WATER IN WELL (FT): ~~1.39~~ 8.2'
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 1.39
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 4 gallons

WATER OBSERVATIONS

light grey, turbid, ~~slight sheen~~ sheen spots

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
9:39	—	—	1	8.02	5.44	1.071	0.723	0.53	—	0.71	-58.3
9:43	—	—	2	7.45	5.560	0.973	0.647	0.48	—	0.71	-66.3
9:47	—	—	3	7.50	5.59	0.961	0.639	0.48	—	0.70	-67.9
9:50	—	—	4	7.40	5.61	0.959	0.637	0.47	—	0.67	-69.5

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
9/14/17	MWA07	9:50	E Mahanna

SAMPLE ID: MWA07
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED: GRO, DRO/RRO, VOCs

COMMENTS:
Well found in good condition.

* x3 ⇒ measured 3 times

RSE GROUNDWATER SAMPLING FORM DATE: 9/12/17 WEATHER: Cloudy

PROJECT NAME: Terminal Reserve **SITE LOCATION:** Pacific Rim Decorator **SAMPLER:**
PROJECT NO.: **WELL NUMBER:** MWB09 **COMPANY:** IRSE
CONTACT #:

WATER COLUMN INFORMATION

A) TOTAL DEPTH OF WELL (FT): 11.86' x3

B) DEPTH TO WATER FROM TOC (FT): 3.81' x3

C) COLUMN OF WATER IN WELL (FT): 7.87'
*row "A" value minus row "B" value

WELL LOCATION MAP AND SURVEY

MWB09 ↑N
MW24

PURGE INFORMATION

~~1-in = XX GAL/FT~~
2-IN = 0.17 GAL/FT

PURGE METHOD: Submersible Pump
*e.g. peristaltic or bladder pump, Bailer

D) GALLONS PER FOOT OF 2-INCH SCREEN: 0.17

E) COLUMN OF WATER IN WELL (FT): 7.87
*value from row "C" in previous section

F) VOLUME OF WATER IN WELL (GAL): 1.33 gal
*row "D" value multiplied by row "E" value

TOTAL VOLUME REMOVED (GAL): 4 gallons

WATER OBSERVATIONS

Turbid, grey
Strong Hydrocarbon Odor

WATER LEVEL AND FIELD PARAMETERS

INSTRUMENT: YSI 556
*e.g. YSI 63, YSI 556, other

TIME	DTW	DRAW-DOWN (-) / RECHARGE (+)	GALLONS REMOVED	TEMP. (°C)	pH (pH Units)	CONDUCTIVITY (mS/cm)	SP. CONDUCTANCE (mS/cm)	SALINITY (ppt)	TURBIDITY (NTU)	O_2 (mg/L)	REDOX (mV)
13:16	—	—	1	10.87	5.90	0.404	0.295	0.20	—	0.55	-98.2
13:20	—	—	2	10.83	5.91	0.407	0.296	0.20	—	0.54	-98.5
13:23	—	—	3	10.06	5.90	0.403	0.288	0.19	—	0.52	-79.4
13:26	—	—	4	9.96	5.91	0.398	0.283	0.19	—	0.50	-75.9

Odor or Sheen Observed?
Notes:

SAMPLE INFORMATION (Also See Lab COC)

SAMPLE ID	DATE:	TIME	SAMPLER
MWB09	9/12/17	13:30	E Mahanna

SAMPLE ID: MWB09
FIELD DUPLICATE: N/A
EQUIPMENT BLANK: N/A
TRIP BLANK: ✓

LAB ANALYSIS REQUESTED:
DRO/ERO, GRO, VOCs

COMMENTS:
Well B. stick up needs to be cut, PVC is too tall. Needs to be flush, otherwise good condition

* x3 = Measured 3 times