GROUNDWATER MONITORING REPORT

Alaska Railroad Corporation (ARRC)

Former Mammoth Trucking Facility
1048 Whitney Road
Anchorage, Alaska
ADEC File No. 2100.26.202

Prepared For:
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December 2012

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ABBREVIATIONS AND ACRONYMS

AAC	Alaska Administrative Code
ARRC	Alaska Railroad Corporation
ADEC	Alaska Department of Environmental Conservation
CS	Contaminated Sites
DRO	Diesel Range Organics
GRO	Gasoline Range Organics
LOQ	Limit of Quantitation
mg/L	Milligrams per Liter
µg/L	Micrograms per Liter
NAPL	Non-Aqueous Phase Liquids
PCE	Tetrachloroethene
RRO	Residual Range Organics
RSE	Restoration Science & Engineering, LLC
TCE	Trichloroethene
UST	Underground Storage Tank
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

On September 13 and 14, 2012 RSE qualified personnel provided environmental sampling services upon five (5) existing groundwater monitoring wells at the Alaska Railroad Corporation (ARRC) Former Mammoth Trucking site located in Anchorage Alaska. RSE qualified person, Lucus Gamble, collected groundwater samples for laboratory analyses to assess groundwater petroleum hydrocarbon and volatile organic compounds (VOC) concentrations.

Laboratory groundwater samples analyzed for DRO/RRO indicate that groundwater conditions for monitoring well CHMWE2 are above ADEC Table C cleanup levels and exceed ADEC 18 AAC 75 cleanup criteria. Additionally, laboratory groundwater samples analyzed for PCE (CHMWE1), TCE (CHMWE2), and vinyl chloride (CHMWE2 and CHMWE5) indicate that groundwater conditions are above ADEC Table C cleanup levels and exceed ADEC 18 AAC 75 cleanup criteria. The data from the 2012 groundwater sampling event are consistent with the data reported by Clarus during the 2010 groundwater sampling event (Clarus, 2010).

1.0 INTRODUCTION

1.1 PROPERTY DESCRIPTION AND SITE HISTORY

The Alaska Railroad Corporation (ARRC) Former Mammoth Trucking Site is located at 1048 Whitney Road in Anchorage, Alaska (Figure 1). The subject property is presently leased to Alaska West Express from the ARRC (Figure 2). According to the Alaska Department of Environmental Conservation (ADEC) Contaminated Site (CS) database, the site is located at 61.224801° N and 149.864036° W (datum unknown).

According to Clarus (2010), in 1990 the following underground storage tanks (USTs) were removed from the Former Mammoth Trucking Facility:

One (1) 500-gallon gasoline UST;

One (1) 2,000-gallon diesel UST;

One (1) 12,000-gallon diesel UST;

One (1) 300-gallon used oil UST; and

One (1) 1,000-gallon used oil UST

During UST removal obvious impacts to the subsurface were noted. In 1994, a new tenant assumed the lease for the subject property and installed four groundwater monitoring wells. Groundwater sampling performed by EMCON Alaska Inc. indicated diesel range organics (DRO), gasoline range organics (GRO), and VOCs, including vinyl chloride and

tetrachloroethene (PCE) above ADEC groundwater cleanup levels. These wells were reportedly buried beneath new asphalt or destroyed between 1994 and 1997.

In 1997 CH2MHill began a groundwater study on an adjacent property whereas they began sampling monitoring MW-1 to determine if petroleum hydrocarbon free product or solvents were migrating towards Ship Creek from up-gradient sources north and east of Whitney Road. Free product was not detected during the CH2MHill investigation. However, PCE was detected in 1997 and again in 1998.

In 1998, CH2MHill attempted to locate the remaining wells installed in 1994. While most of the wells were not located, some of the monitoring wells were recovered. However, CH2MHill was unable to sample these wells due to damage. During the same year, CH2MHill installed nine soil borings; five of which were completed as monitoring wells. In December 1998, CH2MHill collected groundwater samples from each well for DRO, residual range organics (RRO), benzene, toluene, ethylbenzene and total xylenes (collectively referred to as BTEX), as well a specific VOCs. DRO, benzene and PCE were detected above ADEC groundwater cleanup levels.

In 1999, CH2MHill collected groundwater samples from five monitoring wells and analyzed the samples for DRO, RRO, GRO, BTEX and VOCs. DRO, RRO, benzene, vinyl chloride, PCE and trichlorethene (TCE) were detected above ADEC groundwater cleanup levels.

In 2010, Clarus collected groundwater samples from the existing monitoring wells at the Former Mammoth Trucking Facility. PCE was detected above ADEC groundwater cleanup levels in monitoring well CHMWE1. DRO, RRO, TCE and vinyl chloride were detected above ADEC groundwater cleanup levels in monitoring well CHMWE2. Vinyl chloride was detected above ADEC groundwater cleanup levels in monitoring wells CHMWE4 and CHMWE5. No contaminants of potential concern (COPCs) were detected above ADEC groundwater cleanup levels in monitoring well MW-1.

The table on the following page illustrates the historic highest concentration level from any one monitoring well located at the Former Mammoth Trucking Facility for the COPCs described above according to Clarus, 2010:

Table 1. Historic Highest Concentrations for Contaminants of Potential Concerns (Clarus, 2010)

COPCs	Historic Highest Concentration (mg/L)	Reference	ADEC Table C Cleanup Level (mg/L)
Petroleum Hydrocarbons			
DRO	26.6	CH2MHill, 1999	1.5
RRO	11.9	CH2MHill, 1999	1.1
GRO	3.1	EMCON, 1994	2.2
Volatile Organic Compounds			
Benzene	0.007	CH2MHill, 1999	0.005
Vinyl chloride	0.0179	Clarus, 2010	0.002
PCE	0.044	CH2MHill, 1999	0.005
TCE	0.02	CH2MHill, 1999	0.005

The data provided in the Clarus (2010) report varies from the COPC data shown on the ADEC CS database, whereas the highest reported DRO concentration observed by CH2MHill in 1999 was 93.2 mg/L (ADEC, 2012).

1.2 SITE ASSESSMENT OBJECTIVES

The purpose of this site characterization was to document existing groundwater petroleum hydrocarbon and VOC concentrations at the former Mammoth Trucking ARRC lease site, located near Ship Creek in Anchorage, Alaska. Restoration Science & Engineering, LLC (RSE) provided a qualified sampler to collect groundwater samples from existing ARRC groundwater monitoring wells.

2.0 GROUNDWATER SAMPLING METHODOLOGY

Groundwater samples were collected from existing monitoring wells MW-1, CHMWE1, CHMWE2, CHMWE4, and CHMWE5 (Figure 2). Groundwater elevations were measured and the absence of free-product (or NAPL) was confirmed. Prior to sample collection, each monitoring well was purged of at least three times the groundwater volume in the well, as measured prior to sampling. Water quality parameters were recorded at one-gallon intervals during purging at each monitoring well. Groundwater monitoring well locations are shown on Figure 2, Appendix A.

Groundwater samples were collected in method-specific containers using clean, dedicated tubing and a peristaltic pump. RSE employed low flow sampling techniques during sample collection such that sample aeration was minimized. Each container was placed into a cooler and maintained at 2° and 6° C. The groundwater samples were delivered to SGS Environmental Services for analyses located in Anchorage, Alaska. Groundwater samples were analyzed for diesel range organics (DRO) by AK Method 102, residual range organics (RRO) by AK Method 103, gasoline range organics (GRO) by AK Method 101, and VOCs also by EPA Method 8260B.

3.0 RESULTS AND FINDINGS

RSE field scientists did not observe a sheen or hydrocarbon odor while purging or sampling any of the five monitoring wells sampled during this groundwater monitoring event. No free-product (or NAPL) was detected on the groundwater surface.

Groundwater samples CHMWE1, CHMWE4, CHMWE5 and MW-1 all exhibited concentrations of target analytes that were "not detectable" or below Table C cleanup levels. Groundwater samples CHMWE2 (4.25 mg/L) and blind duplicate sample CHMWEX (4.5 mg/L) exhibited concentrations of DRO greater than the ADEC Table C cleanup level of 1.5 mg/L. Additionally, groundwater sample CHMWEX (1.24 mg/L) exhibited a RRO result greater than the ADEC Table C cleanup level of 1.1 mg/L. Groundwater sample CHMWEX is a blind duplicate of sample CHMWE2. Laboratory results for all groundwater samples are compared to the Table C cleanup levels in Tables B1, Appendix B. Groundwater quality measurements from each monitoring well are provided in Table B3, Appendix B.

Groundwater sample CHMWE1 (40.5 µg/L) exhibited tetrachloroethene (PCE) results greater than the ADEC Table C cleanup level of 0.005 mg/L. Groundwater samples CHMWE2 (9.47 µg/L) and blind duplicate sample CHMWEX (9.63 µg/L) exhibited concentrations of trichloroethene (TCE) greater than the ADEC Table C cleanup level of 0.005 mg/L. Additionally, groundwater samples CHMWE2 (3.96 µg/L) and blind duplicate sample CHMWEX (6.77 µg/L) exhibited concentrations of vinyl chloride greater than the ADEC Table C cleanup level of 0.002 mg/L. Groundwater sample CHMWE5 (25.8 µg/L) also exhibited a vinyl chloride results greater than the ADEC Table C cleanup level of 0.002 mg/L.

The results from the laboratory groundwater analyses indicate there are still petroleum hydrocarbons and VOC contaminants of potential concern present in the shallow unconfined aquifer at the ARRC Former Mammoth Trucking site.

4.0 DISCUSSION OF LOCAL GROUNDWATER

Depth to groundwater varied among the five wells. Groundwater was observed between 3.85 feet below top of casing at CHMWE2 and 9.58 feet below top of casing at CHMWE1. A groundwater elevation survey was not conducted during this field effort as access to monitoring wells CHMWE4 and CHMWE5 were limited by vehicles and trailers. Generally, the groundwater gradient at this location trends in southerly direction towards Ship Creek.

5.0 INVESTIGATIVE-DERIVED WASTE

Purge water from monitoring wells MW-1, CHMWE1, CHMWE2, CHMWE4, and CHMWE5 was contained in individually labeled 5-gallon buckets and transported by ARRC personnel to an

ARRC facility and disposed of through an oil/water separator located within the ARRC Anchorage yard.

Items, such as gloves, tubing and unused laboratory containers were placed into a dumpster for offsite disposal. Field equipment and other non-consumables were decontaminated at RSE's office using a detergent and hot water.

6.0 DATA QUALITY AND SITE ASSESSMENT LIMITATIONS

Groundwater samples were collected and analyzed in accordance with the provisions of 18 AAC 75. Field documentation was reviewed for completeness, accuracy, and the presence of unexpected results. All samples were analyzed by SGS Environmental Services. Data deliverable packages show acceptable method and laboratory instrument performance. The laboratory data was reviewed internally by RSE staff and is suitable for its intended use for comparison of sample results with ADEC cleanup standards. Appendix C provides a copy of the laboratory analytical report, chain-of-custody, and ADEC Laboratory Review Checklist. Both RSE and the contract-laboratory maintain a complete set of data deliverables, which are assembled to meet the criteria established in 18 AAC 75.

7.0 CONCLUSION

Laboratory groundwater samples analyzed for DRO/RRO indicate that groundwater conditions for monitoring well CHMWE2 are above ADEC Table C cleanup levels and do not meet ADEC 18 AAC 75 criteria. Additionally, laboratory groundwater samples analyzed for PCE (CHMWE1), TCE (CHMWE2), and vinyl chloride (CHMWE2 and CHMWE5) indicate that groundwater conditions are above ADEC Table C cleanup levels and do not meet ADEC 18 AAC 75 criteria. The data from the 2012 groundwater sampling event is consistent with the data reported by Clarus during the 2010 groundwater sampling event (Clarus, 2010).

8.0 REFERENCES

ADEC Contaminated Sites Database. http://dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=23887. Accessed November 2012.

Clarus Technologies, LLC, Groundwater Monitoring Report, Former Mammoth Trucking Facility, Anchorage, Alaska, D-0012-01. Dated December 10, 2010.

Restoration Science & Engineering, LLC, Work Plan for Groundwater Sampling, Former Mammoth Trucking Facility, 1048 Whitney Road, Anchorage, Alaska, ADEC File No. 2100.26.202. Dated October 2008.

APPENDIX A:

FIGURES

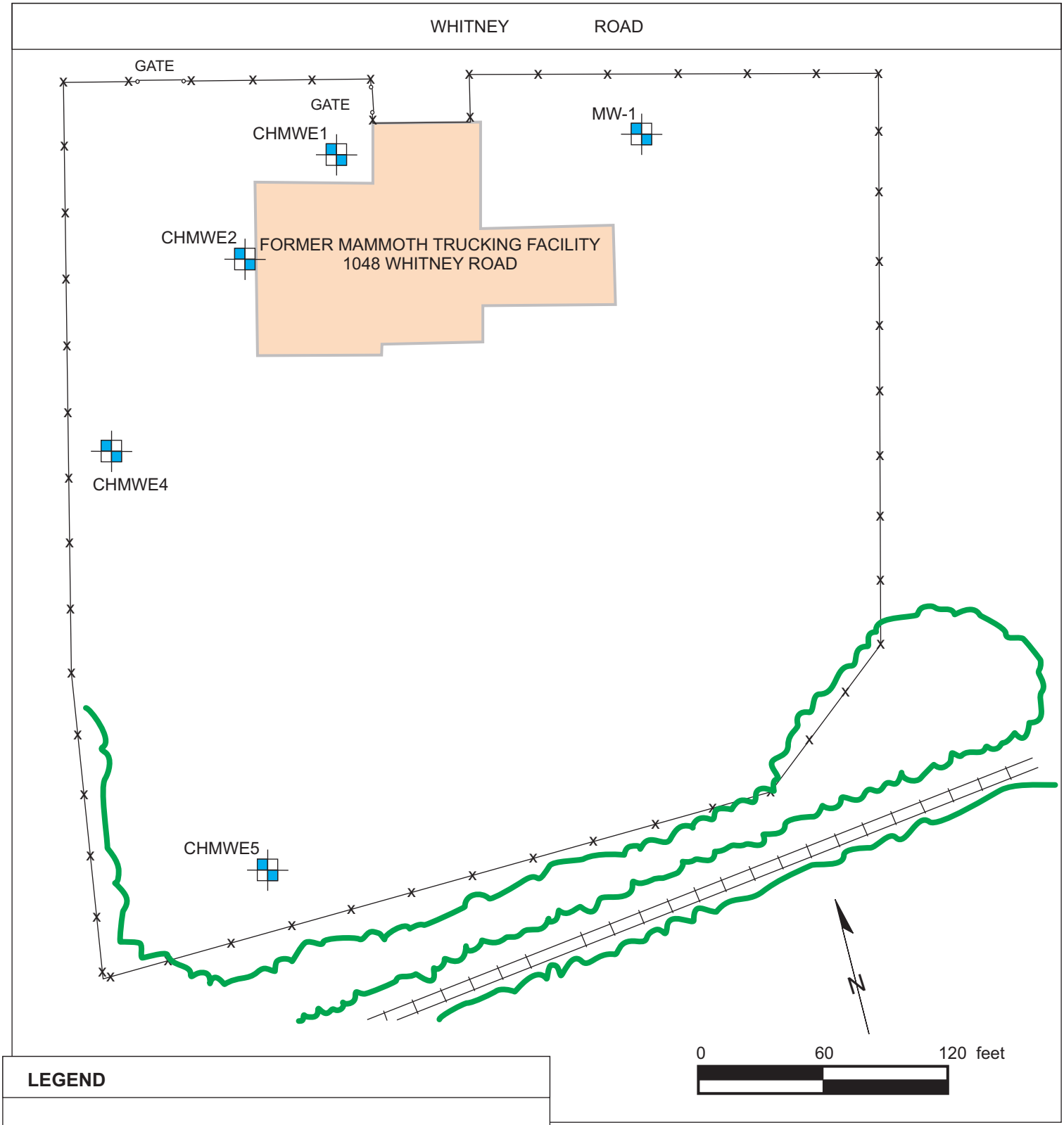
Site Vicinity Map

Former Mammoth Trucking Facility
Anchorage, Alaska

clarus environmental services

Figure 1 **12/2010**
D-0012-01

Groundwater Sampling Locations
Former Mammoth Trucking Facility
Anchorage, Alaska



LEGEND

CHMWE1

MONITORING WELL LOCATION

clarus environmental services

Figure 2 **12/2010**
D-0012-01

APPENDIX B:

TABLES

TABLE B1 - HYDROCARBON CONCENTRATIONS IN GROUNDWATER
ARRC FORMER MAMMOTH TRUCKING FACILITY
ANCHORAGE, ALASKA

Sample ID	CHMWE1	CHMWE2	CHMWE4	CHMWE5	MW-1	CHMWEX	ADEC Table C Groundwater
Date	9/13/2012	9/13/2012	9/13/2012	9/13/2012	9/13/2012	9/13/2012	Cleanup Levels (mg/L)
Units	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
Gasoline Range Organics	0.0319J	0.0683J	*0.062U*	0.0513J	*0.062U*	0.0670J	2.2
Diesel Range Organics	*0.36U*	4.25	0.918	1.11	*0.36U*	4.5	1.5
Residual Range Organics	0.166J	1.06	0.532	0.455J	0.161J	1.24	1.1

NOTES:
1) Gasoline range organics analyses by Method AK 10
2) Diesel range organics analyses by Method AK 102
3) Residual range organics analyses by Method AK 103
4) An italicized value with a U qualifier indicates the analyte was not detected at the stated Limit of Quantitation (LC
5) Bolded values with a J qualifier indicate that the concentration is an estimate below the LC
6) Yellow highlighted values indicate that the concentration is above the applicable cleanup stand

TABLE B2 - VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN GROUNDWATER
ARRC FORMER MAMMOTH TRUCKING FACILITY
ANCHORAGE, ALASKA

Sample ID Date	CHMWE1 9/13/2012	CHMWE2 9/14/2012	CHMWE4 9/13/2012	CHMWE5 9/13/2012	MW-1 9/13/2012	CHMWEX 9/13/2012	ADEC Table C Groundwater Cleanup Level	
Units	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(mg/L)**	**(µg/L)**
1,1,1,2-Tetrachloroethane	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	--	--
1,1,1-Trichloroethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.2	200
1,1,2,2-Tetrachloroethane	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.0043	4.3
1,1,2-Trichloroethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.005	5
1,1-Dichloroethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	7.3	7300
1,1-Dichloroethene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.007	7
1,1-Dichloropropene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
1,2,3-Trichlorobenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
1,2,3-Trichloropropane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.00012	0.12
1,2,4-Trichlorobenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.07	70
1,2,4-Trimethylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	1.8	1800
1,2-Dibromo-3-chloropropane	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	0.0002	0.2
1,2-Dibromoethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
1,2-Dichlorobenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.6	600
1,2-Dichloroethane	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.005	5
1,2-Dichloropropane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.005	5
1,3,5-Trimethylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	1.8	1800
1,3-Dichlorobenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	3.3	3300
1,3-Dichloropropane	*0.24U*	*0.24U*	*0.24U*	*0.24U*	*0.24U*	*0.24U*	--	--
1,4-Dichlorobenzene	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.075	75
2,2-Dichloropropane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
2-Butanone (MEK)	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	22	22000
2-Chlorotoluene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
2-Hexanone	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	--	--
4-Chlorotoluene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
4-Isopropyltoluene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
4-Methyl-2-pentanone (MIBK)	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	*6.2U*	2.9	2900
Benzene	*0.24U*	**0.810**	*0.24U*	**3.09**	*0.24U*	**0.820**	0.005	5
Bromobenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
Bromochloromethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
Bromodichloromethane	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.014	14
Bromoform	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.11	110
Bromomethane	*1.88U*	*1.88U*	*1.88U*	*1.88U*	*1.88U*	*1.88U*	--	--
Carbon disulfide	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	3.7	3700
Carbon tetrachloride	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.005	5
Chlorobenzene	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.1	100
Chloroethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.29	290
Chloroform	**0.490**	*0.6U*	*0.6U*	*0.6U*	**0.440**	*0.6U*	0.14	140
Chloromethane	*0.62U*	*0.62U*	*0.62U*	**0.450**	*0.62U*	*0.62U*	--	--
cis-1,2-Dichloroethene	*0.62U*	**10.5**	*0.62U*	**1.11**	*0.62U*	**11.3**	0.07	70
cis-1,3-Dichloropropene	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	0.0085	8.5
Dibromochloromethane	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	*0.3U*	--	--
Dibromomethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
Dichlorodifluoromethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	7.3	7300
Ethylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.7	700
Hexachlorobutadiene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.0073	7.3
Isopropylbenzene (Cumene)	*0.62U*	**1.56**	*0.62U*	*0.62U*	*0.62U*	**1.63**	3.7	3700
Methylene chloride	*2U*	*2U*	*2U*	*2U*	*2U*	*2U*	0.005	5
Methyl-t-butyl ether	*3U*	*3U*	*3U*	*3U*	*3U*	*3U*	0.47	470
Naphthalene	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	0.73	730
n-Butylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.37	370
n-Propylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	--	--
o-Xylene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	10	10000
P & M -Xylene	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	*1.24U*	10	10000
sec-Butylbenzene	*0.62U*	**1.07**	*0.62U*	*0.62U*	*0.62U*	**1.22**	0.37	370
Styrene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.1	100
tert-Butylbenzene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.37	370
Tetrachloroethene	**40.5**	*0.62U*	*0.62U*	*0.62U*	**1.79**	*0.62*	0.005	5
Toluene	*0.62U*	*0.62U*	*0.62U*	**0.890**	*0.62U*	*0.62U*	1	1000
trans-1,2-Dichloroethene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.1	100
trans-1,3-Dichloropropene	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	0.0085	8.5
Trichloroethene	**1.22**	**9.47**	*0.62U*	*0.62U*	*0.62U*	**9.63**	0.005	5
Trichlorofluoromethane	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	*0.62U*	11	11000
Vinyl chloride	*0.62U*	**3.96**	*0.62U*	**25.8**	*0.62U*	**6.77**	0.002	2
Xylenes (total)	*1.88U*	*1.88U*	*1.88U*	*1.88U*	*1.88U*	*1.88U*	10	10000

Notes:
1) Volatile organic compound analyses by Method EPA 8260
2) An italicized value with a U qualifier indicates the analyte was not detected at the stated Limit of Quantitation (LOQ)
3) Yellow highlighted values indicate that the concentration is above the applicable cleanup standarc
4) Light blue highlighted values indicate that the concentration is not detected at the stated LOQ, but the LOQ is above the applicable cleanup standarc

TABLE B3 - GROUNDWATER QUALITY MEASUREMENTS
ARRC FORMER MAMMOTH TRUCKING FACILITY
ANCHORAGE, ALASKA

	PURGE VOLUME (gal)	TEMP. (°C)	pH (pH units)	COND. (µs/cm)	SP. COND (µs/cm)	SAL. (ppt)	NOTES
CHMWE1	1	10.1	6.30	314.9	439.3	0.2	DTW: 9.58 ft below TOC, no sheen, no odor, slightly turbid during initial purge, clear by 2nd gallon, sampled at 12:50
	2	9.1	6.37	338.9	486	0.2	
	3	9.0	6.38	353.8	510	0.2	
CHMWE2	1	11.6	6.48	--	1464	0.7	DTW: 7.23 ft below TOC, no sheen, no odor, well did not recharge after 0.75 gallons, returned 09/14/12 to sample (09:31), CHMWEX blind duplicate
	2	10.4	6.27	778	1076	0.5	
CHMWE4	1	7.1	6.20	125.3	189.6	0.1	DTW: 3.85 ft below TOC, no sheen, no odor, sampled at 14:27
	2	9.0	6.28	133.2	192.0	0.1	
	3	8.8	6.31	186.1	268.8	0.1	
CHMWE5	1	5.1	6.32	703	1127	0.6	DTW: 7.95 ft below TOC, no sheen, no odor, sampled at 13:43
	2	4.7	6.43	672	1098	0.5	
	3	4.5	6.46	664	1088	0.5	
MW-1	1	11.0	6.12	323.6	442.8	0.2	DTW: 9.57 ft below TOC, no sheen, no odor, sampled at 15:11
	2	11.1	6.12	309.8	422.5	0.2	
	3	10.7	6.14	308.5	424.3	0.2	

NOTES:
1) Cond. means "conductivity
2) Sp. Cond. means "specific conductance'
3) Sal. means "salinity'
4) DTW means "depth to water'
5) TOC means "top of casing'
6) Water quality parameters measured with a YSI 6

APPENDIX C:

SGS LABORATORY REPORT, CHAIN-OF-CUSTODY, AND ADEC LABORATORY REVIEW CHECKLIST

Laboratory Report of Analysis

To: AK Railroad Corp
327 W Ship Creek Ave
Anchorage, AK 99501
(907)265-2384

Report Number: **1124371**

Client Project: **12-985 Former Mammoth Trucking**

Dear Russ Grandell,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

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

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
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Case Narrative

SGS Client: **AK Railroad Corp**
SGS Project: **1124371**
Project Name/Site:
Project Contact: **Russ Grandell**

Refer to sample receipt form for information on sample condition.

CHMWE2 (1124371003) PS

AK102 - The pattern is consistent with a weathered middle distillate.
AK103 - Unknown hydrocarbon with several peaks is present.

CHMWE4 (1124371004) PS

AK102/103 - Unknown hydrocarbon with several peaks is present.

CHMWE5 (1124371005) PS

AK102 - Unknown hydrocarbon with several peaks is present.

CHMWEX (1124371006) PS

AK102 - The pattern is consistent with a weathered middle distillate.
AK103 - Unknown hydrocarbon with several peaks is present.

CCV for HBN 1378388 [VMS/13116 (1115530) CCV

8260B - CCV recovery for multiple analytes does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.

CCV for HBN 1378828 [VMS/13124 (1116212) CCV

8260B - CCV recovery for multiple analytes does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.

CCV for HBN 1379367 [VMS/13131 (1116685) CCV

8260B - CCV recovery for chloroethane, methyl iodide and n-hexane does not meet QC criteria (biased high). These analtyes were not detected above the LOQ in the associated samples.

IB for HBN 1380107 (XFC/10613) (1117728) IB

AK102/103 - IB recoveries for 5a-androstane and n triacontane (surrogates) do not meet QC criteria (biased low); however the sample surrogates are within criteria.

LCS for HBN 1378387 [VXX/24025 (1115527) LCS

8260B - LCS recovery for chloromethane, acetone, and 2-hexanone does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.

LCS for HBN 1378826 [VXX/24040 (1116206) LCS

8260B - LCS recovery for bromomethane and methyl iodide does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.

LCS for HBN 1379366 [VXX/24053 (1116682) LCS

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

LCSD for HBN 1378387 [VXX/2402 (1115528) LCSD

8260B - LCSD recovery for several analytes does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.
8260B - LCS/LCSD RPD for acetone does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

LCSD for HBN 1378826 [VXX/2404 (1116207) LCSD

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Case Narrative

SGS Client: **AK Railroad Corp**
SGS Project: **1124371**
Project Name/Site:
Project Contact: **Russ Grandell**

Refer to sample receipt form for information on sample condition.

8260B - LCS/LCSD RPD for 2,2-dichloroproane does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

LCSD for HBN 1379366 [VXX/2405 (1116683) LCSD

8260B - LCSD recovery for methyl iodide does not meet QC criteria (biased high). This analyte was not detected above the LOQ in the associated samples.
8260B - LCS/LCSD RPD for chloroethane and vinyl acetate does not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

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

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
AK102				
1115486	LCS for HBN 1378381 [XXX/28015	XFC10613	Diesel Range Organics	BLC
AK103				
1115486	LCS for HBN 1378381 [XXX/28015	XFC10613	Residual Range Organics	BLC

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

Print Date: 09/26/2012 5:15:35PM

Laboratory Qualifiers

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

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

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

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW-1	1124371001	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
CHMWE1	1124371002	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
CHMWE2	1124371003	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
CHMWE4	1124371004	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
CHMWE5	1124371005	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
CHMWEX	1124371006	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
Trip Blank	1124371007	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)
	1124371008	09/13/2012	09/14/2012	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260B	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **MW-1**
Lab Sample ID: 1124371001
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Residual Range Organics	0.161J	mg/L
Chloroform	0.440J	ug/L
Tetrachloroethene	1.79	ug/L

Client Sample ID: **CHMWE1**
Lab Sample ID: 1124371002
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Residual Range Organics	0.166J	mg/L
Gasoline Range Organics	0.0319J	mg/L
Chloroform	0.490J	ug/L
Tetrachloroethene	40.5	ug/L
Trichloroethene	1.22	ug/L

Client Sample ID: **CHMWE2**
Lab Sample ID: 1124371003
Semivolatile Organic Fuels

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	4.25	mg/L
Residual Range Organics	1.06	mg/L
Gasoline Range Organics	0.0683J	mg/L
Benzene	0.810	ug/L
cis-1,2-Dichloroethene	10.5	ug/L
Isopropylbenzene (Cumene)	1.56	ug/L
sec-Butylbenzene	1.07	ug/L
Trichloroethene	9.47	ug/L
Vinyl chloride	3.96	ug/L

Client Sample ID: **CHMWE4**
Lab Sample ID: 1124371004
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.918	mg/L
Residual Range Organics	0.532	mg/L

Client Sample ID: **CHMWE5**
Lab Sample ID: 1124371005
Semivolatile Organic Fuels

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	1.11	mg/L
Residual Range Organics	0.455J	mg/L
Gasoline Range Organics	0.0513J	mg/L
Benzene	3.09	ug/L
Chloromethane	0.450J	ug/L
cis-1,2-Dichloroethene	1.11	ug/L
Toluene	0.890J	ug/L
Vinyl chloride	25.8	ug/L

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Detectable Results Summary

Client Sample ID: **CHMWEX**
Lab Sample ID: 1124371006

Semivolatile Organic Fuels

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	4.50	mg/L
Residual Range Organics	1.24	mg/L
Gasoline Range Organics	0.0670J	mg/L
Benzene	0.820	ug/L
cis-1,2-Dichloroethene	11.3	ug/L
Isopropylbenzene (Cumene)	1.63	ug/L
sec-Butylbenzene	1.22	ug/L
Trichloroethene	9.63	ug/L
Vinyl chloride	6.77	ug/L

Print Date: 09/26/2012 5:15:37PM

Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371001
Lab Project ID: 1124371

Collection Date: 09/13/12 15:11
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1	09/25/12 11:07
Surrogates							
5a Androstane	78.7		50-150		%	1	09/25/12 11:07

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 11:07

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	0.161	J	0.500	0.150	mg/L	1	09/25/12 11:07
Surrogates							
n-Triacontane-d62	82.9		50-150		%	1	09/25/12 11:07

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 11:07

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371001
Lab Project ID: 1124371

Collection Date: 09/13/12 15:11
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1	09/17/12 17:34
Surrogates							
4-Bromofluorobenzene	103		50-150		%	1	09/17/12 17:34

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 17:34

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371001
Lab Project ID: 1124371

Collection Date: 09/13/12 15:11
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:05
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/18/12 20:05
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:05
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:05
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:05
Benzene	0.240	U	0.400	0.120	ug/L	1	09/18/12 20:05
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/18/12 20:05
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:05
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Chloroform	0.440	J	1.00	0.300	ug/L	1	09/18/12 20:05
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:05
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05

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Results of **MW-1**

Client Sample ID: **MW-1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371001
Lab Project ID: 1124371

Collection Date: 09/13/12 15:11
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/18/12 20:05
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/18/12 20:05
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:05
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:05
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Styrene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Tetrachloroethene	1.79		1.00	0.310	ug/L	1	09/18/12 20:05
Toluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Trichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:05
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/18/12 20:05
Surrogates							
1,2-Dichloroethane-D4	106		70-120		%	1	09/18/12 20:05
4-Bromofluorobenzene	96.5		75-120		%	1	09/18/12 20:05
Toluene-d8	99.3		85-120		%	1	09/18/12 20:05

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/18/12 20:05

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 09/18/12 10:34
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE1**

Client Sample ID: **CHMWE1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371002
Lab Project ID: 1124371

Collection Date: 09/13/12 12:50
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	0.360	U	0.600	0.180	mg/L	1	09/25/12 11:28
Surrogates							
5a Androstane	84.4		50-150		%	1	09/25/12 11:28

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 11:28

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	0.166	J	0.500	0.150	mg/L	1	09/25/12 11:28
Surrogates							
n-Triacontane-d62	91.7		50-150		%	1	09/25/12 11:28

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 11:28

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **CHMWE1**

Client Sample ID: **CHMWE1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371002
Lab Project ID: 1124371

Collection Date: 09/13/12 12:50
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0319	J	0.100	0.0310	mg/L	1	09/17/12 17:52
Surrogates							
4-Bromofluorobenzene	99.4		50-150		%	1	09/17/12 17:52

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 17:52

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE1**

Client Sample ID: **CHMWE1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371002
Lab Project ID: 1124371

Collection Date: 09/13/12 12:50
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:32
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/18/12 20:32
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:32
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:32
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 20:32
Benzene	0.240	U	0.400	0.120	ug/L	1	09/18/12 20:32
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/18/12 20:32
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:32
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Chloroform	0.490	J	1.00	0.300	ug/L	1	09/18/12 20:32
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 20:32
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32

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Results of **CHMWE1**

Client Sample ID: **CHMWE1**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371002
Lab Project ID: 1124371

Collection Date: 09/13/12 12:50
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/18/12 20:32
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/18/12 20:32
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:32
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/18/12 20:32
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Styrene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Tetrachloroethene	40.5		1.00	0.310	ug/L	1	09/18/12 20:32
Toluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Trichloroethene	1.22		1.00	0.310	ug/L	1	09/18/12 20:32
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 20:32
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/18/12 20:32
Surrogates							
1,2-Dichloroethane-D4	105		70-120		%	1	09/18/12 20:32
4-Bromofluorobenzene	95.5		75-120		%	1	09/18/12 20:32
Toluene-d8	97.1		85-120		%	1	09/18/12 20:32

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/18/12 20:32

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 09/18/12 10:34
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE2**

Client Sample ID: **CHMWE2**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371003
Lab Project ID: 1124371

Collection Date: 09/13/12 09:31
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	4.25		0.600	0.180	mg/L	1	09/25/12 11:48
Surrogates							
5a Androstane	76.5		50-150		%	1	09/25/12 11:48

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 11:48

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	1.06		0.500	0.150	mg/L	1	09/25/12 11:48
Surrogates							
n-Triacontane-d62	79		50-150		%	1	09/25/12 11:48

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 11:48

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **CHMWE2**

Client Sample ID: **CHMWE2**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371003
Lab Project ID: 1124371

Collection Date: 09/13/12 09:31
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0683	J	0.100	0.0310	mg/L	1	09/17/12 16:57
Surrogates							
4-Bromofluorobenzene	114		50-150		%	1	09/17/12 16:57

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 16:57

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE2**

Client Sample ID: **CHMWE2**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371003
Lab Project ID: 1124371

Collection Date: 09/13/12 09:31
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:00
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/18/12 21:00
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:00
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:00
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:00
Benzene	0.810		0.400	0.120	ug/L	1	09/18/12 21:00
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/18/12 21:00
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:00
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Chloroform	0.600	U	1.00	0.300	ug/L	1	09/18/12 21:00
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
cis-1,2-Dichloroethene	10.5		1.00	0.310	ug/L	1	09/18/12 21:00
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:00
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00

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Results of **CHMWE2**

Client Sample ID: **CHMWE2**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371003
Lab Project ID: 1124371

Collection Date: 09/13/12 09:31
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Isopropylbenzene (Cumene)	1.56		1.00	0.310	ug/L	1	09/18/12 21:00
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/18/12 21:00
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/18/12 21:00
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:00
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:00
sec-Butylbenzene	1.07		1.00	0.310	ug/L	1	09/18/12 21:00
Styrene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Toluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Trichloroethene	9.47		1.00	0.310	ug/L	1	09/18/12 21:00
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:00
Vinyl chloride	3.96		1.00	0.310	ug/L	1	09/18/12 21:00
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/18/12 21:00
Surrogates							
1,2-Dichloroethane-D4	107		70-120		%	1	09/18/12 21:00
4-Bromofluorobenzene	95.7		75-120		%	1	09/18/12 21:00
Toluene-d8	99.1		85-120		%	1	09/18/12 21:00

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/18/12 21:00

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 09/18/12 10:34
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE4**

Client Sample ID: **CHMWE4**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371004
Lab Project ID: 1124371

Collection Date: 09/13/12 14:27
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	0.918		0.600	0.180	mg/L	1	09/25/12 12:09
Surrogates							
5a Androstane	73		50-150		%	1	09/25/12 12:09

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 12:09

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	0.532		0.500	0.150	mg/L	1	09/25/12 12:09
Surrogates							
n-Triacontane-d62	77.8		50-150		%	1	09/25/12 12:09

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 12:09

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **CHMWE4**

Client Sample ID: **CHMWE4**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371004
Lab Project ID: 1124371

Collection Date: 09/13/12 14:27
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1	09/17/12 17:16
Surrogates							
4-Bromofluorobenzene	103		50-150		%	1	09/17/12 17:16

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 17:16

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE4**

Client Sample ID: **CHMWE4**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371004
Lab Project ID: 1124371

Collection Date: 09/13/12 14:27
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:27
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/18/12 21:27
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:27
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:27
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 21:27
Benzene	0.240	U	0.400	0.120	ug/L	1	09/18/12 21:27
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/18/12 21:27
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:27
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Chloroform	0.600	U	1.00	0.300	ug/L	1	09/18/12 21:27
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 21:27
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27

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Results of **CHMWE4**

Client Sample ID: **CHMWE4**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371004
Lab Project ID: 1124371

Collection Date: 09/13/12 14:27
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/18/12 21:27
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/18/12 21:27
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:27
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/18/12 21:27
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Styrene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Toluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Trichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 21:27
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/18/12 21:27
Surrogates							
1,2-Dichloroethane-D4	109		70-120		%	1	09/18/12 21:27
4-Bromofluorobenzene	95.6		75-120		%	1	09/18/12 21:27
Toluene-d8	98.5		85-120		%	1	09/18/12 21:27

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/18/12 21:27

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 09/18/12 10:34
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE5**

Client Sample ID: **CHMWE5**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371005
Lab Project ID: 1124371

Collection Date: 09/13/12 13:43
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	1.11		0.600	0.180	mg/L	1	09/25/12 12:29
Surrogates							
5a Androstane	78.8		50-150		%	1	09/25/12 12:29

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 12:29

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	0.455	J	0.500	0.150	mg/L	1	09/25/12 12:29
Surrogates							
n-Triacontane-d62	83.3		50-150		%	1	09/25/12 12:29

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 12:29

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **CHMWE5**

Client Sample ID: **CHMWE5**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371005
Lab Project ID: 1124371

Collection Date: 09/13/12 13:43
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0513	J	0.100	0.0310	mg/L	1	09/17/12 18:11
Surrogates							
4-Bromofluorobenzene	104		50-150		%	1	09/17/12 18:11

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 18:11

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWE5**

Client Sample ID: **CHMWE5**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371005
Lab Project ID: 1124371

Collection Date: 09/13/12 13:43
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/20/12 21:35
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/20/12 21:35
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/20/12 21:35
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/20/12 21:35
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/20/12 21:35
Benzene	3.09		0.400	0.120	ug/L	1	09/20/12 21:35
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/20/12 21:35
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/20/12 21:35
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Chloroform	0.600	U	1.00	0.300	ug/L	1	09/20/12 21:35
Chloromethane	0.450	J	1.00	0.310	ug/L	1	09/20/12 21:35
cis-1,2-Dichloroethene	1.11		1.00	0.310	ug/L	1	09/20/12 21:35
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 21:35
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35

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Results of **CHMWE5**

Client Sample ID: **CHMWE5**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371005
Lab Project ID: 1124371

Collection Date: 09/13/12 13:43
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/20/12 21:35
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/20/12 21:35
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/20/12 21:35
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/20/12 21:35
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Styrene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Toluene	0.890	J	1.00	0.310	ug/L	1	09/20/12 21:35
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Trichloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 21:35
Vinyl chloride	25.8		1.00	0.310	ug/L	1	09/21/12 15:00
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/20/12 21:35
Surrogates							
1,2-Dichloroethane-D4	105		70-120		%	1	09/20/12 21:35
4-Bromofluorobenzene	102		75-120		%	1	09/20/12 21:35
Toluene-d8	100		85-120		%	1	09/20/12 21:35

Batch Information

Analytical Batch: VMS13124
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/20/12 21:35

Prep Batch: VXX24040
Prep Method: SW5030B
Prep Date/Time: 09/20/12 10:52
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS13131
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/21/12 15:00

Prep Batch: VXX24053
Prep Method: SW5030B
Prep Date/Time: 09/21/12 11:02
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWEX**

Client Sample ID: **CHMWEX**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371006
Lab Project ID: 1124371

Collection Date: 09/13/12 17:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Diesel Range Organics	4.50		0.600	0.180	mg/L	1	09/25/12 12:50
Surrogates							
5a Androstane	73.2		50-150		%	1	09/25/12 12:50

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/12 12:50

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Residual Range Organics	1.24		0.500	0.150	mg/L	1	09/25/12 12:50
Surrogates							
n-Triacontane-d62	75.2		50-150		%	1	09/25/12 12:50

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/12 12:50

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 09/19/12 09:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **CHMWEX**

Client Sample ID: **CHMWEX**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371006
Lab Project ID: 1124371

Collection Date: 09/13/12 17:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0670	J	0.100	0.0310	mg/L	1	09/17/12 18:29
Surrogates							
4-Bromofluorobenzene	111		50-150		%	1	09/17/12 18:29

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 18:29

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **CHMWEX**

Client Sample ID: **CHMWEX**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371006
Lab Project ID: 1124371

Collection Date: 09/13/12 17:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/20/12 22:08
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/20/12 22:08
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/20/12 22:08
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/20/12 22:08
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/20/12 22:08
Benzene	0.820		0.400	0.120	ug/L	1	09/20/12 22:08
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/20/12 22:08
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/20/12 22:08
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Chloroform	0.600	U	1.00	0.300	ug/L	1	09/20/12 22:08
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
cis-1,2-Dichloroethene	11.3		1.00	0.310	ug/L	1	09/20/12 22:08
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/20/12 22:08
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08

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Results of **CHMWEX**

Client Sample ID: **CHMWEX**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371006
Lab Project ID: 1124371

Collection Date: 09/13/12 17:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Isopropylbenzene (Cumene)	1.63		1.00	0.310	ug/L	1	09/20/12 22:08
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/20/12 22:08
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/20/12 22:08
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/20/12 22:08
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/20/12 22:08
sec-Butylbenzene	1.22		1.00	0.310	ug/L	1	09/20/12 22:08
Styrene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Toluene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Trichloroethene	9.63		1.00	0.310	ug/L	1	09/20/12 22:08
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/20/12 22:08
Vinyl chloride	6.77		1.00	0.310	ug/L	1	09/21/12 15:34
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/20/12 22:08
Surrogates							
1,2-Dichloroethane-D4	103		70-120		%	1	09/20/12 22:08
4-Bromofluorobenzene	99.6		75-120		%	1	09/20/12 22:08
Toluene-d8	98.4		85-120		%	1	09/20/12 22:08

Batch Information

Analytical Batch: VMS13124
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/20/12 22:08

Prep Batch: VXX24040
Prep Method: SW5030B
Prep Date/Time: 09/20/12 10:52
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS13131
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/21/12 15:34

Prep Batch: VXX24053
Prep Method: SW5030B
Prep Date/Time: 09/21/12 11:02
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: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371007
Lab Project ID: 1124371

Collection Date: 09/13/12 09:31
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Gasoline Range Organics	0.0620	U	0.100	0.0310	mg/L	1	09/17/12 19:06
Surrogates							
4-Bromofluorobenzene	102		50-150		%	1	09/17/12 19:06

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Analyst: EAB
Analytical Date/Time: 09/17/12 19:06

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 09/17/12 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: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371008
Lab Project ID: 1124371

Collection Date: 09/13/12 08:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
1,1,1-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,1,2,2-Tetrachloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
1,1,2-Trichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,1-Dichloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,1-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,1-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2,3-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2,3-Trichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2,4-Trichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2,4-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2-Dibromo-3-chloropropane	1.24	U	2.00	0.620	ug/L	1	09/18/12 13:45
1,2-Dibromoethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,2-Dichloroethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
1,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,3,5-Trimethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,3-Dichlorobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
1,3-Dichloropropane	0.240	U	0.400	0.120	ug/L	1	09/18/12 13:45
1,4-Dichlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
2,2-Dichloropropane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
2-Butanone (MEK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 13:45
2-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
2-Hexanone	6.20	U	10.0	3.10	ug/L	1	09/18/12 13:45
4-Chlorotoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
4-Isopropyltoluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
4-Methyl-2-pentanone (MIBK)	6.20	U	10.0	3.10	ug/L	1	09/18/12 13:45
Benzene	0.240	U	0.400	0.120	ug/L	1	09/18/12 13:45
Bromobenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Bromochloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Bromodichloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
Bromoform	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Bromomethane	1.88	U	3.00	0.940	ug/L	1	09/18/12 13:45
Carbon disulfide	1.24	U	2.00	0.620	ug/L	1	09/18/12 13:45
Carbon tetrachloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Chlorobenzene	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
Chloroethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Chloroform	0.600	U	1.00	0.300	ug/L	1	09/18/12 13:45
Chloromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
cis-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
cis-1,3-Dichloropropene	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
Dibromochloromethane	0.300	U	0.500	0.150	ug/L	1	09/18/12 13:45
Dibromomethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Dichlorodifluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **12-985 Former Mammoth Trucking**
Lab Sample ID: 1124371008
Lab Project ID: 1124371

Collection Date: 09/13/12 08:00
Received Date: 09/14/12 11:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Date Analyzed
Ethylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Hexachlorobutadiene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Isopropylbenzene (Cumene)	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Methyl-t-butyl ether	3.00	U	5.00	1.50	ug/L	1	09/18/12 13:45
Methylene chloride	2.00	U	5.00	1.00	ug/L	1	09/18/12 13:45
n-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
n-Propylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Naphthalene	1.24	U	2.00	0.620	ug/L	1	09/18/12 13:45
o-Xylene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
P & M -Xylene	1.24	U	2.00	0.620	ug/L	1	09/18/12 13:45
sec-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Styrene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
tert-Butylbenzene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Tetrachloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Toluene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
trans-1,2-Dichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
trans-1,3-Dichloropropene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Trichloroethene	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Trichlorofluoromethane	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Vinyl chloride	0.620	U	1.00	0.310	ug/L	1	09/18/12 13:45
Xylenes (total)	1.88	U	3.00	0.940	ug/L	1	09/18/12 13:45
Surrogates							
1,2-Dichloroethane-D4	103		70-120		%	1	09/18/12 13:45
4-Bromofluorobenzene	93.2		75-120		%	1	09/18/12 13:45
Toluene-d8	99.1		85-120		%	1	09/18/12 13:45

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Analyst: JPI
Analytical Date/Time: 09/18/12 13:45

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 09/18/12 10:34
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1378258 [VXX/24021]
Blank Lab ID: 1115305

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006, 1124371007

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0620 U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene	104	50-150		%

Batch Information

Analytical Batch: VFC11166
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: EAB
Analytical Date/Time: 9/17/2012 4:39:00PM

Prep Batch: VXX24021
Prep Method: SW5030B
Prep Date/Time: 9/17/2012 8:00:15AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24021]
Blank Spike Lab ID: 1115306
Date Analyzed: 09/17/2012 16:21

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24021]
Spike Duplicate Lab ID: 1115307
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006, 1124371007

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	1.07	107	1.00	1.02	102	(60-120)	4.30	(< 20)
Surrogates									
4-Bromofluorobenzene		111	111	0.0500	108		(50-150)	2.50	

Batch Information

Analytical Batch: **VFC11166**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **EAB**

Prep Batch: **VXX24021**
Prep Method: **SW5030B**
Prep Date/Time: **09/17/2012 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 1378387 [VXX/24025]
Blank Lab ID: 1115526

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.620 U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.620 U	1.00	0.310	ug/L
1,1-Dichloroethane	0.620 U	1.00	0.310	ug/L
1,1-Dichloroethene	0.620 U	1.00	0.310	ug/L
1,1-Dichloropropene	0.620 U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.620 U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.620 U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.620 U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.620 U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	1.24 U	2.00	0.620	ug/L
1,2-Dibromoethane	0.620 U	1.00	0.310	ug/L
1,2-Dichlorobenzene	0.620 U	1.00	0.310	ug/L
1,2-Dichloroethane	0.300 U	0.500	0.150	ug/L
1,2-Dichloropropane	0.620 U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.620 U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.620 U	1.00	0.310	ug/L
1,3-Dichloropropane	0.240 U	0.400	0.120	ug/L
1,4-Dichlorobenzene	0.300 U	0.500	0.150	ug/L
2,2-Dichloropropane	0.620 U	1.00	0.310	ug/L
2-Butanone (MEK)	6.20 U	10.0	3.10	ug/L
2-Chlorotoluene	0.620 U	1.00	0.310	ug/L
2-Hexanone	6.20 U	10.0	3.10	ug/L
4-Chlorotoluene	0.620 U	1.00	0.310	ug/L
4-Isopropyltoluene	0.620 U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	6.20 U	10.0	3.10	ug/L
Benzene	0.240 U	0.400	0.120	ug/L
Bromobenzene	0.620 U	1.00	0.310	ug/L
Bromochloromethane	0.620 U	1.00	0.310	ug/L
Bromodichloromethane	0.300 U	0.500	0.150	ug/L
Bromoform	0.620 U	1.00	0.310	ug/L
Bromomethane	1.88 U	3.00	0.940	ug/L
Carbon disulfide	1.24 U	2.00	0.620	ug/L
Carbon tetrachloride	0.620 U	1.00	0.310	ug/L
Chlorobenzene	0.300 U	0.500	0.150	ug/L
Chloroethane	0.620 U	1.00	0.310	ug/L
Chloroform	0.330J	1.00	0.300	ug/L

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Blank ID: MB for HBN 1378387 [VXX/24025]
Blank Lab ID: 1115526

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.620 U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.300 U	0.500	0.150	ug/L
Dibromochloromethane	0.300 U	0.500	0.150	ug/L
Dibromomethane	0.620 U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.620 U	1.00	0.310	ug/L
Ethylbenzene	0.620 U	1.00	0.310	ug/L
Hexachlorobutadiene	0.620 U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.620 U	1.00	0.310	ug/L
Methylene chloride	2.00 U	5.00	1.00	ug/L
Methyl-t-butyl ether	3.00 U	5.00	1.50	ug/L
Naphthalene	1.24 U	2.00	0.620	ug/L
n-Butylbenzene	0.620 U	1.00	0.310	ug/L
n-Propylbenzene	0.620 U	1.00	0.310	ug/L
o-Xylene	0.620 U	1.00	0.310	ug/L
P & M -Xylene	1.24 U	2.00	0.620	ug/L
sec-Butylbenzene	0.620 U	1.00	0.310	ug/L
Styrene	0.620 U	1.00	0.310	ug/L
tert-Butylbenzene	0.620 U	1.00	0.310	ug/L
Tetrachloroethene	0.620 U	1.00	0.310	ug/L
Toluene	0.620 U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.620 U	1.00	0.310	ug/L
Trichloroethene	0.620 U	1.00	0.310	ug/L
Trichlorofluoromethane	0.620 U	1.00	0.310	ug/L
Vinyl chloride	0.620 U	1.00	0.310	ug/L
Xylenes (total)	1.88 U	3.00	0.940	ug/L
Surrogates				
1,2-Dichloroethane-D4	104	70-120		%
4-Bromofluorobenzene	95.2	75-120		%
Toluene-d8	99.6	85-120		%

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Method Blank

Blank ID: MB for HBN 1378387 [VXX/24025]
Blank Lab ID: 1115526

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS13116
Analytical Method: SW8260B
Instrument: HP 5890 Series II MS1 VJA
Analyst: JPI
Analytical Date/Time: 9/18/2012 11:02:00AM

Prep Batch: VXX24025
Prep Method: SW5030B
Prep Date/Time: 9/18/2012 10:34:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank ID: MB for HBN 1378826 [VXX/24040]
Blank Lab ID: 1116205

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371005, 1124371006

Results by **SW8260B**

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

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Method Blank

Blank ID: MB for HBN 1378826 [VXX/24040]
Blank Lab ID: 1116205

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371005, 1124371006

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.620 U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.300 U	0.500	0.150	ug/L
Dibromochloromethane	0.300 U	0.500	0.150	ug/L
Dibromomethane	0.620 U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.620 U	1.00	0.310	ug/L
Ethylbenzene	0.620 U	1.00	0.310	ug/L
Hexachlorobutadiene	0.620 U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.620 U	1.00	0.310	ug/L
Methylene chloride	2.00 U	5.00	1.00	ug/L
Methyl-t-butyl ether	3.00 U	5.00	1.50	ug/L
Naphthalene	1.24 U	2.00	0.620	ug/L
n-Butylbenzene	0.620 U	1.00	0.310	ug/L
n-Propylbenzene	0.620 U	1.00	0.310	ug/L
o-Xylene	0.620 U	1.00	0.310	ug/L
P & M -Xylene	1.24 U	2.00	0.620	ug/L
sec-Butylbenzene	0.620 U	1.00	0.310	ug/L
Styrene	0.620 U	1.00	0.310	ug/L
tert-Butylbenzene	0.620 U	1.00	0.310	ug/L
Tetrachloroethene	0.620 U	1.00	0.310	ug/L
Toluene	0.620 U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.620 U	1.00	0.310	ug/L
Trichloroethene	0.620 U	1.00	0.310	ug/L
Trichlorofluoromethane	0.620 U	1.00	0.310	ug/L
Xylenes (total)	1.88 U	3.00	0.940	ug/L
Surrogates				
1,2-Dichloroethane-D4	99.8	70-120		%
4-Bromofluorobenzene	101	75-120		%
Toluene-d8	97.6	85-120		%

Batch Information

Analytical Batch: VMS13124
Analytical Method: SW8260B
Instrument: HP 5890 Series II MS1 VJA
Analyst: JPI
Analytical Date/Time: 9/20/2012 11:27:00AM

Prep Batch: VXX24040
Prep Method: SW5030B
Prep Date/Time: 9/20/2012 10:52:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/26/2012 5:15:41PM

Method Blank

Blank ID: MB for HBN 1379366 [VXX/24053]
Blank Lab ID: 1116681

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371005, 1124371006

Results by **SW8260B**

Parameter	Results	LOQ/CL	DL	Units
Vinyl chloride	0.620 U	1.00	0.310	ug/L
Surrogates				
1,2-Dichloroethane-D4	102	70-120		%
4-Bromofluorobenzene	99.7	75-120		%
Toluene-d8	98.1	85-120		%

Batch Information

Analytical Batch: VMS13131
Analytical Method: SW8260B
Instrument: HP 5890 Series II MS1 VJA
Analyst: JPI
Analytical Date/Time: 9/21/2012 11:37:00AM

Prep Batch: VXX24053
Prep Method: SW5030B
Prep Date/Time: 9/21/2012 11:02:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24025]
Blank Spike Lab ID: 1115527
Date Analyzed: 09/18/2012 12:24

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24025]
Spike Duplicate Lab ID: 1115528
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

	Blank Spike (ug/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	30.1	100	30	30.0	100	(80-130)	0.47	(< 20)
1,1,1-Trichloroethane	30	29.9	100	30	29.7	99	(65-130)	0.67	(< 20)
1,1,2,2-Tetrachloroethane	30	31.9	106	30	31.9	106	(65-130)	0.13	(< 20)
1,1,2-Trichloroethane	30	31.2	104	30	30.8	103	(75-125)	1.30	(< 20)
1,1-Dichloroethane	30	27.5	92	30	26.9	90	(70-135)	2.30	(< 20)
1,1-Dichloroethene	30	27.1	90	30	26.4	88	(70-130)	2.50	(< 20)
1,1-Dichloropropene	30	30.4	101	30	29.5	98	(75-130)	3.00	(< 20)
1,2,3-Trichlorobenzene	30	33.3	111	30	33.4	111	(55-140)	0.27	(< 20)
1,2,3-Trichloropropane	30	33.6	112	30	33.6	112	(75-125)	0.03	(< 20)
1,2,4-Trichlorobenzene	30	32.0	107	30	31.7	106	(65-135)	1.10	(< 20)
1,2,4-Trimethylbenzene	30	29.4	98	30	29.1	97	(75-130)	1.10	(< 20)
1,2-Dibromo-3-chloropropane	30	35.6	119	30	36.2	121	(50-130)	1.70	(< 20)
1,2-Dibromoethane	30	31.8	106	30	31.8	106	(80-120)	0.09	(< 20)
1,2-Dichlorobenzene	30	28.7	96	30	28.2	94	(70-120)	1.80	(< 20)
1,2-Dichloroethane	30	29.6	99	30	29.6	99	(70-130)	0.10	(< 20)
1,2-Dichloropropane	30	29.3	98	30	29.4	98	(75-125)	0.20	(< 20)
1,3,5-Trimethylbenzene	30	29.4	98	30	29.0	97	(75-130)	1.30	(< 20)
1,3-Dichlorobenzene	30	29.3	98	30	28.7	96	(75-125)	2.00	(< 20)
1,3-Dichloropropane	30	30.4	101	30	30.6	102	(75-125)	0.92	(< 20)
1,4-Dichlorobenzene	30	29.7	99	30	29.4	98	(75-125)	1.20	(< 20)
2,2-Dichloropropane	30	29.0	97	30	28.9	96	(70-135)	0.41	(< 20)
2-Butanone (MEK)	90	126	140	90	148	165	* (30-150)	16.30	(< 20)
2-Chlorotoluene	30	28.4	95	30	27.7	92	(75-125)	2.60	(< 20)
2-Hexanone	90	119	132 *	90	129	144	* (55-130)	8.80	(< 20)
4-Chlorotoluene	30	28.0	93	30	27.5	92	(75-130)	1.70	(< 20)
4-Isopropyltoluene	30	30.0	100	30	29.4	98	(75-130)	2.10	(< 20)
4-Methyl-2-pentanone (MIBK)	90	120	134	90	121	135	(60-135)	0.89	(< 20)
Benzene	30	29.6	99	30	29.4	98	(80-120)	0.81	(< 20)
Bromobenzene	30	29.1	97	30	28.7	96	(75-125)	1.30	(< 20)
Bromochloromethane	30	29.8	99	30	30.1	100	(65-130)	0.93	(< 20)
Bromodichloromethane	30	29.7	99	30	29.5	98	(75-120)	0.68	(< 20)
Bromoform	30	32.6	109	30	32.5	108	(70-130)	0.34	(< 20)
Bromomethane	30	34.6	115	30	38.8	129	(30-145)	11.50	(< 20)
Carbon disulfide	45	43.0	96	45	42.8	95	(35-160)	0.54	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24025]
Blank Spike Lab ID: 1115527
Date Analyzed: 09/18/2012 12:24

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24025]
Spike Duplicate Lab ID: 1115528
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

	Blank Spike (ug/L)				Spike Duplicate ()				
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	30.8	103	30	31.3	104	(65-140)	1.60	(< 20)
Chlorobenzene	30	29.6	99	30	29.3	98	(80-120)	0.75	(< 20)
Chloroethane	30	25.3	84	30	26.1	87	(60-135)	3.20	(< 20)
Chloroform	30	29.1	97	30	28.4	95	(65-135)	2.40	(< 20)
Chloromethane	30	38.4	128 *	30	39.6	132 *	(40-125)	3.20	(< 20)
cis-1,2-Dichloroethene	30	29.4	98	30	29.1	97	(70-125)	0.86	(< 20)
cis-1,3-Dichloropropene	30	30.8	103	30	30.8	103	(70-130)	0.00	(< 20)
Dibromochloromethane	30	30.6	102	30	30.6	102	(60-135)	0.00	(< 20)
Dibromomethane	30	30.7	102	30	30.7	102	(75-125)	0.20	(< 20)
Dichlorodifluoromethane	30	32.2	107	30	31.4	105	(30-155)	2.60	(< 20)
Ethylbenzene	30	30.4	101	30	29.7	99	(75-125)	2.30	(< 20)
Hexachlorobutadiene	30	31.4	105	30	30.7	102	(50-140)	2.30	(< 20)
Isopropylbenzene (Cumene)	30	30.5	102	30	30.4	101	(75-125)	0.30	(< 20)
Methyl-t-butyl ether	45	45.4	101	45	46.4	103	(65-125)	2.20	(< 20)
Methylene chloride	30	26.9	90	30	27.4	91	(55-140)	1.60	(< 20)
n-Butylbenzene	30	30.6	102	30	29.7	99	(70-135)	3.10	(< 20)
n-Propylbenzene	30	28.9	96	30	28.3	94	(70-130)	2.00	(< 20)
Naphthalene	30	37.8	126	30	38.5	128	(55-140)	1.90	(< 20)
o-Xylene	30	30.0	100	30	29.3	98	(80-120)	2.10	(< 20)
P & M -Xylene	60	59.1	98	60	58.4	97	(75-130)	1.20	(< 20)
sec-Butylbenzene	30	29.0	97	30	28.8	96	(70-125)	0.73	(< 20)
Styrene	30	30.6	102	30	30.7	102	(65-135)	0.26	(< 20)
tert-Butylbenzene	30	29.0	97	30	28.9	96	(70-130)	0.38	(< 20)
Tetrachloroethene	30	31.9	106	30	31.3	104	(45-150)	1.90	(< 20)
Toluene	30	28.9	96	30	28.8	96	(75-120)	0.35	(< 20)
trans-1,2-Dichloroethene	30	28.4	95	30	27.9	93	(60-140)	1.60	(< 20)
trans-1,3-Dichloropropene	30	30.9	103	30	30.6	102	(55-140)	0.94	(< 20)
Trichloroethene	30	30.4	101	30	29.9	100	(70-125)	1.60	(< 20)
Trichlorofluoromethane	30	28.9	96	30	27.7	92	(60-145)	4.10	(< 20)
Vinyl chloride	30	30.5	102	30	30.5	102	(50-145)	0.16	(< 20)
Xylenes (total)	90	89.0	99	90	87.7	97	(80-120)	1.50	(< 20)
Surrogates									
1,2-Dichloroethane-D4		100	100	30	101		(70-120)	1.00	

Print Date: 09/26/2012 5:15:42PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24025]
Blank Spike Lab ID: 1115527
Date Analyzed: 09/18/2012 12:24

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24025]
Spike Duplicate Lab ID: 1115528
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371008

Results by **SW8260B**

	Blank Spike (%)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
4-Bromofluorobenzene		95.9	96	30	96.7		(75-120)	0.87	
Toluene-d8		98.2	98	30	99.5		(85-120)	1.30	

Batch Information

Analytical Batch: **VMS13116**
Analytical Method: **SW8260B**
Instrument: **HP 5890 Series II MS1 VJA**
Analyst: **JPI**

Prep Batch: **VXX24025**
Prep Method: **SW5030B**
Prep Date/Time: **09/18/2012 10:34**
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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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24040]
Blank Spike Lab ID: 1116206
Date Analyzed: 09/20/2012 12:35

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24040]
Spike Duplicate Lab ID: 1116207
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371005, 1124371006

Results by **SW8260B**

	Blank Spike (ug/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	31.5	105	30	31.9	106	(80-130)	1.20	(< 20)
1,1,1-Trichloroethane	30	33.0	110	30	31.8	106	(65-130)	3.50	(< 20)
1,1,2,2-Tetrachloroethane	30	31.1	104	30	30.8	103	(65-130)	1.00	(< 20)
1,1,2-Trichloroethane	30	30.4	101	30	31.0	103	(75-125)	1.90	(< 20)
1,1-Dichloroethane	30	31.7	106	30	30.3	101	(70-135)	4.50	(< 20)
1,1-Dichloroethene	30	36.4	121	30	35.3	118	(70-130)	3.10	(< 20)
1,1-Dichloropropene	30	33.4	111	30	32.6	109	(75-130)	2.40	(< 20)
1,2,3-Trichlorobenzene	30	29.4	98	30	29.6	99	(55-140)	0.58	(< 20)
1,2,3-Trichloropropane	30	28.7	96	30	29.7	99	(75-125)	3.70	(< 20)
1,2,4-Trichlorobenzene	30	31.9	106	30	31.8	106	(65-135)	0.34	(< 20)
1,2,4-Trimethylbenzene	30	31.8	106	30	31.1	104	(75-130)	2.30	(< 20)
1,2-Dibromo-3-chloropropane	30	29.9	100	30	29.8	100	(50-130)	0.13	(< 20)
1,2-Dibromoethane	30	30.4	101	30	29.8	99	(80-120)	1.90	(< 20)
1,2-Dichlorobenzene	30	29.7	99	30	29.6	99	(70-120)	0.44	(< 20)
1,2-Dichloroethane	30	31.2	104	30	30.3	101	(70-130)	2.90	(< 20)
1,2-Dichloropropane	30	33.0	110	30	31.3	104	(75-125)	5.40	(< 20)
1,3,5-Trimethylbenzene	30	31.3	104	30	30.3	101	(75-130)	3.10	(< 20)
1,3-Dichlorobenzene	30	30.7	102	30	29.8	99	(75-125)	3.10	(< 20)
1,3-Dichloropropane	30	30.4	101	30	29.7	99	(75-125)	2.60	(< 20)
1,4-Dichlorobenzene	30	30.2	101	30	30.0	100	(75-125)	0.80	(< 20)
2,2-Dichloropropane	30	31.4	105	30	24.5	82	(70-135)	24.70 *	(< 20)
2-Butanone (MEK)	90	93.1	103	90	96.8	108	(30-150)	3.90	(< 20)
2-Chlorotoluene	30	30.7	102	30	29.8	99	(75-125)	2.90	(< 20)
2-Hexanone	90	87.1	97	90	90.4	100	(55-130)	3.80	(< 20)
4-Chlorotoluene	30	30.7	102	30	29.6	99	(75-130)	3.70	(< 20)
4-Isopropyltoluene	30	32.4	108	30	31.4	105	(75-130)	2.90	(< 20)
4-Methyl-2-pentanone (MIBK)	90	90.7	101	90	96.1	107	(60-135)	5.80	(< 20)
Benzene	30	32.0	107	30	31.0	103	(80-120)	3.00	(< 20)
Bromobenzene	30	30.5	102	30	29.5	98	(75-125)	3.40	(< 20)
Bromochloromethane	30	31.6	105	30	29.8	100	(65-130)	5.90	(< 20)
Bromodichloromethane	30	32.5	108	30	31.0	103	(75-120)	4.60	(< 20)
Bromoform	30	30.9	103	30	32.1	107	(70-130)	3.70	(< 20)
Bromomethane	30	43.7	146 *	30	42.8	143	(30-145)	2.10	(< 20)
Carbon disulfide	45	55.3	123	45	52.6	117	(35-160)	4.90	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24040]
Blank Spike Lab ID: 1116206
Date Analyzed: 09/20/2012 12:35

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24040]
Spike Duplicate Lab ID: 1116207
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371005, 1124371006

Results by **SW8260B**

	Blank Spike (ug/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	33.6	112	30	31.1	104	(65-140)	7.70	(< 20)
Chlorobenzene	30	30.4	101	30	30.4	101	(80-120)	0.26	(< 20)
Chloroethane	30	37.5	125	30	33.8	113	(60-135)	10.40	(< 20)
Chloroform	30	31.5	105	30	31.0	103	(65-135)	1.80	(< 20)
Chloromethane	30	37.5	125	30	36.7	122	(40-125)	2.20	(< 20)
cis-1,2-Dichloroethene	30	32.3	108	30	31.9	106	(70-125)	1.40	(< 20)
cis-1,3-Dichloropropene	30	34.2	114	30	32.0	107	(70-130)	6.50	(< 20)
Dibromochloromethane	30	31.6	105	30	31.3	104	(60-135)	0.98	(< 20)
Dibromomethane	30	30.1	100	30	27.4	91	(75-125)	9.50	(< 20)
Dichlorodifluoromethane	30	38.5	128	30	38.0	127	(30-155)	1.20	(< 20)
Ethylbenzene	30	30.5	102	30	30.3	101	(75-125)	0.56	(< 20)
Hexachlorobutadiene	30	31.8	106	30	31.2	104	(50-140)	2.10	(< 20)
Isopropylbenzene (Cumene)	30	30.2	101	30	30.3	101	(75-125)	0.40	(< 20)
Methyl-t-butyl ether	45	47.4	105	45	45.0	100	(65-125)	5.20	(< 20)
Methylene chloride	30	33.2	111	30	32.1	107	(55-140)	3.30	(< 20)
n-Butylbenzene	30	33.2	111	30	32.1	107	(70-135)	3.30	(< 20)
n-Propylbenzene	30	31.6	105	30	30.6	102	(70-130)	3.10	(< 20)
Naphthalene	30	29.5	98	30	30.1	100	(55-140)	2.00	(< 20)
o-Xylene	30	30.9	103	30	30.5	102	(80-120)	1.30	(< 20)
P & M -Xylene	60	60.9	101	60	59.8	100	(75-130)	1.80	(< 20)
sec-Butylbenzene	30	31.5	105	30	30.6	102	(70-125)	2.60	(< 20)
Styrene	30	30.8	103	30	30.7	102	(65-135)	0.29	(< 20)
tert-Butylbenzene	30	31.5	105	30	30.8	103	(70-130)	2.30	(< 20)
Tetrachloroethene	30	31.7	106	30	31.7	106	(45-150)	0.13	(< 20)
Toluene	30	29.3	98	30	29.0	97	(75-120)	1.00	(< 20)
trans-1,2-Dichloroethene	30	33.0	110	30	31.2	104	(60-140)	5.50	(< 20)
trans-1,3-Dichloropropene	30	31.3	104	30	30.4	101	(55-140)	3.00	(< 20)
Trichloroethene	30	31.1	104	30	31.0	103	(70-125)	0.32	(< 20)
Trichlorofluoromethane	30	35.2	117	30	33.3	111	(60-145)	5.40	(< 20)
Xylenes (total)	90	91.8	102	90	90.3	100	(80-120)	1.60	(< 20)
Surrogates									
1,2-Dichloroethane-D4		98.8	99	30	98.1		(70-120)	0.68	
4-Bromofluorobenzene		102	102	30	100		(75-120)	2.20	

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24040]
Blank Spike Lab ID: 1116206
Date Analyzed: 09/20/2012 12:35

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24040]
Spike Duplicate Lab ID: 1116207
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371005, 1124371006

Results by **SW8260B**

		Blank Spike (%)			Spike Duplicate ()				
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Toluene-d8		98.1	98	30	99.8		(85-120)	1.80	

Batch Information

Analytical Batch: **VMS13124**
Analytical Method: **SW8260B**
Instrument: **HP 5890 Series II MS1 VJA**
Analyst: **JPI**

Prep Batch: **VXX24040**
Prep Method: **SW5030B**
Prep Date/Time: **09/20/2012 10:52**
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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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [VXX24053]
Blank Spike Lab ID: 1116682
Date Analyzed: 09/21/2012 12:11

Spike Duplicate ID: LCSD for HBN 1124371 [VXX24053]
Spike Duplicate Lab ID: 1116683
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371005, 1124371006

Results by **SW8260B**

	Blank Spike (ug/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Vinyl chloride	30	34.2	114	30	32.8	109	(50-145)	4.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4		100	100	30	101		(70-120)	0.46	
4-Bromofluorobenzene		102	102	30	99.1		(75-120)	2.90	
Toluene-d8		99.3	99	30	98.6		(85-120)	0.71	

Batch Information

Analytical Batch: **VMS13131**
Analytical Method: **SW8260B**
Instrument: **HP 5890 Series II MS1 VJA**
Analyst: **JPI**

Prep Batch: **VXX24053**
Prep Method: **SW5030B**
Prep Date/Time: **09/21/2012 11:02**
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 1378381 [XXX/28015]
Blank Lab ID: 1115485

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.360 U	0.600	0.180	mg/L
Surrogates				
5a Androstane	82.5	60-120		%

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: EAB
Analytical Date/Time: 9/25/2012 10:06:00AM

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 9/19/2012 9:00:00AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [XXX28015]
Blank Spike Lab ID: 1115486
Date Analyzed: 09/25/2012 10:27

Spike Duplicate ID: LCSD for HBN 1124371 [XXX28015]
Spike Duplicate Lab ID: 1115487
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	18.4	92	20	18.1	90	(75-125)	1.90	(< 20)
Surrogates									
5a Androstane		89.6	90	0.4	88		(60-120)	1.80	

Batch Information

Analytical Batch: **XFC10613**
Analytical Method: **AK102**
Instrument: **HP 7890A FID SV E F**
Analyst: **EAB**

Prep Batch: **XXX28015**
Prep Method: **SW3520C**
Prep Date/Time: **09/19/2012 09:00**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1378381 [XXX/28015]
Blank Lab ID: 1115485

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.300 U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62	87.5	60-120		%

Batch Information

Analytical Batch: XFC10613
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: EAB
Analytical Date/Time: 9/25/2012 10:06:00AM

Prep Batch: XXX28015
Prep Method: SW3520C
Prep Date/Time: 9/19/2012 9:00:00AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1124371 [XXX28015]
Blank Spike Lab ID: 1115486
Date Analyzed: 09/25/2012 10:27

Spike Duplicate ID: LCSD for HBN 1124371 [XXX28015]
Spike Duplicate Lab ID: 1115487
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1124371001, 1124371002, 1124371003, 1124371004, 1124371005, 1124371006

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate ()					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	19.2	96	20	18.4	92	(60-120)	4.30	(< 20)
Surrogates									
n-Triacontane-d62		88.3	88	0.4	86.7		(60-120)	1.90	

Batch Information

Analytical Batch: **XFC10613**
Analytical Method: **AK103**
Instrument: **HP 7890A FID SV E F**
Analyst: **EAB**

Prep Batch: **XXX28015**
Prep Method: **SW3520C**
Prep Date/Time: **09/19/2012 09:00**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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CHAIN OF CUSTODY RECORD

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

Page 1 of 1

1

CLIENT: ALASKA RAILROAD CORPORATION

CONTACT: RUSSELL GRANDEL PHONE NO: 265-2429

PROJECT NAME: FORMER MAMMOTH TRUCKING FACILITY PROJECT/ PWSID/ PERMIT#: 12-995

REPORTS TO: RSE & ARRL E-MAIL: GRANDELR@AHRR.COM

INVOICE TO: ARRL QUOTE #: ARRL TERM CONTRAC P.O. #: PRICING

2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative Used: HCl	TYPE C = COMP G = GRAB MI = Multi Incremental Soils	DRO/RRO AK 102/103	GRO AK 101 HCl	VOC EPA 8260 HCl								REMARKS/ LOC ID
(1) A-H	MW-1	09/13/12		H_2O	8	G		x	x	x								
(2) A-H	CHMWE1	9/14/12 LL		H_2O	8	G		x	x	x								
(3) A-H	CHMWE2			H_2O	8	G		x	x	x								
(4) A-H	CHMWE4			H_2O	8	G		x	x	x								
(5) A-H	CHMWE5			H_2O	8	G		x	x	x								
(6) A-H	CHMWEX	9/13/12		H_2O	8	G		x	x	x								missing (1) DRO/RRO
(8) (7) A-C	TB																	JAR - BROKEN IN FIELD

5

Relinquished By: (1)	Date	Time	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By: 1100 9/14/12

4

DOD Project? YES NO

Cooler ID: _____

Data Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Temp Blank °C: 2.1 #11

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

SGS-00082 (6/12)

[ ] 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

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CHAIN OF CUSTODY RECORD

112437 1

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

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

Page 1 of 1

1

CLIENT: ALASKA RAILROAD CORPORATION

CONTACT: RUSSELL GRANDEL PHONE NO: 265-2429

PROJECT NAME: FORMER MAMMOTH TRUCKING FACILITY PROJECT/ PWSID/ PERMIT#: 12-985

REPORTS TO: RSE & ARRL E-MAIL: GRANDELR@AKRR.COM

INVOICE TO: ARRL QUOTE #: ARRL TERM CONTRACT

P.O. #: PRICING

2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative Used: HCl	TYPE C = COMP G = GRAB MI = Multi Incremental Soils	DRO/RRO AK 102/103	GRO AK 101	VOC EPA 8260	REMARKS/ LOC ID
	MW-1	09/13/12	15:11	H_2O	8	G		X	X	X	
	CHMWE1	9/14/12	12:50	H_2O	8	G		X	X	X	
	CHMWE2		09:31	H_2O	8	G		X	X	X	
	CHMWE4		14:27	H_2O	8	G		X	X	X	
	CHMWE5		13:43	H_2O	8	G		X	X	X	
	CHMWEX	9/13/12	12:00	H_2O	8	G		X	X	X	
											Missing (1) DRO/RRO JAR - BROKEN IN FIELD

3

5

Relinquished By: (1)	Date	Time	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

4

DOD Project? YES NO

Cooler ID: _____

Data Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Temp Blank °C: _____

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

SGS-00082 (6/12)

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[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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1124371

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable.	Yes No (N/A)	
COC accompanied samples?	(Yes) No N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)?	(Yes) No N/A	
** Note: Exemption permitted for chilled samples collected less than 8 hours ago.*		
Cooler ID: (1) @ (2-1) w/ Therm.ID: (11)		
Cooler ID: _____ @ _____ w/ Therm.ID: _____		
Cooler ID: _____ @ _____ w/ Therm.ID: _____		
Cooler ID: _____ @ _____ w/ Therm.ID: _____		
Cooler ID: _____ @ _____ w/ Therm.ID: _____		
Note: If non-compliant, use form FS-0029 to document affected samples/analyses. If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."		
If temperature(s) <0°C, were all sample containers ice free?	Yes No (N/A)	
Delivery method (specify all that apply): (Client)	Note ABN/ tracking #	
USPS Alert Courier Road Runner AK Air		
Lynden Carlile ERA PenAir	See Attached ~~or N/A~~	
FedEx UPS NAC Other:		
→ *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	Yes No (N/A)	
→ For samples received with payment, note amount ($) and cash / check / CC **(circle one)** or note:		N/A
→ For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed.	SRF Initiated by: SC	N/A
Were samples received within hold time? *Note: Refer to form F-083 "Sample Guide" for hold time information.*	(Yes) No N/A	.No time of collection on COC or bottle.
Do samples **match COC*** (i.e., sample IDs, dates/times collected)? ** Note: Exemption permitted if times differ <1hr; in which case, use times on COC.* SC 4/19/17	Yes (No) N/A	
Were analyses requested unambiguous?	(Yes) No N/A	
Were samples in **good condition** (no leaks/cracks/~~breakage~~)?	(Yes) No N/A	
Packing material used (specify all that apply): (Bubble Wrap) Separate plastic bags Vermiculite Other:		
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)?	(Yes) No N/A	
Were all soil VOAs **field extracted** with MeOH+BFB?	Yes No (N/A)	
Were **proper containers** (type/mass/volume/preservative*) used? ** Note: Exemption permitted for waters to be analyzed for metals.*	(Yes) No N/A	
Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	(Yes) No N/A	
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No (N/A)	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant?**	(Yes) No N/A	
If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No (N/A)	
For **RUSH/SHORT Hold Time** or **site-specific QC** (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent?	Yes No (N/A)	SRF Completed by: SC
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?		PM = N/A
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	Yes No N/A	Peer Reviewed by: N/A

Additional notes (if applicable):

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

SGS North America Inc.
200 W. Potter Dr., Anchorage, AK 99518 (ph) 907-562-2343, (fax) 907-561-5301
3180 Peger Rd., Fairbanks, AK 99701 (ph) 907-474-8656, (fax) 907-474-9685

Sample Kit Request

☑ **Client pickup Date:** 9/10/2012 **Time:** 1400
☐ **Deliver to client:**
☐ **Shipment Method:**
Airline Carrier:
Airbill Number:
Date to ship by:
Notes:
Kit request taken by: JAN **Date:** 9/7/2012
Kit prepared by: JC **Date:** 9-10-12
Kit checked by: AmB **Date:** 9/10/12
Kit shipped by: **Date:**
Estimated date for **samples returning** to the lab:

Client Name: Restoration Science
Ordered By: Lucas Gamble **e-mail:** Lgamble@restorsci.com
Phone #: 907-278-1023
Project Name: Alaska RR Former Mammoth Trucking Facility
Quote #:
Delivery: Client Pick-up

1124371

PM Reminders:
☐ **Track all Lot#** ☐ **SOW/SAP/QAPP** ☐ **Profile Build/Project Notice** ☐ **Total # Bottles includes bottles for % Solids** ☐ **Regulatory/Special Requirements** ☐ **DQOs** ☐ **Problem Matrix**

Notes:

No. Samples	Matrix	Analysis	Container Size & Type		Pres.	Bottle Lot #	Pres. Lot #	Hold Time	# QC Bottles	Total Bottles
7	Water	GRO, AK101	3 x 40 mL	amber	HCl					21
7	Water	VOC, 8260B	3 x 40 mL	amber	HCl					21
7	Water	DRO/RRO, AK102/103	**2 x 250mL**	amber	HCl					14

☐ Pack for Shipping via air carrier
☑ 125mL Temperature Blank
☐ 500mL Temperature Blank
☐ Soil VOA Trip Blank - Lot#:
☑ Water VOA Trip Blank - Lot#: 1108222
☐ 524 VOA Trip Blank - Lot#:
☐ Low Level Mercury - Lot#:
☑ SGS COCs - ***Circle req'd format:*** * Blank COC * ~~Drinking Water~~ COC template * UST COC template * Landfill COC template * COC initiated by PM (attached) * WasteWater COC template * Mining COC template * TCLP COC template
☑ Custody Seals
☑ Labels
☑ Coolers
☑ Bubble Wrap
☑ Gel Ice (***circle one:*** in each cooler OR in a separate cooler)
☑ Pack similar bottles together OR custom packing ***(circle one)***
☐ Send Instructions
☐ Include Foreign Soil Permit

Other Notes/Reminders for Kit Prep:

2 Trip Blanks needed; six vials total
FROZEN ICE PLEASE

Attention Client/Sampler: ***Please remember the following sampling guidelines -***

1. Do not rinse container before filling and be aware of any acid preservative in container.
2. Fill container to top, but do not overfill (except volatiles which should be headspace free).
3. Label the container with your sample/site ID, as well as the date & time of collection.
4. Fill in the Chain of Custody.
5. Add frozen gel packs or ice to your cooler & pack to prevent breakage.

Note: Charges may be invoiced for bottles which are unused or improperly used.

If you have any questions concerning this sample kit, please contact your Project Manager for assistance. ***Thank you.***

Laboratory Data Review Checklist

Completed by: Lucus Gamble

Title: Environmental Sciences Manager Date: December 1, 2012

CS Report Name: ARRC Former Mammoth Trucking Report Date: December 2012

Consultant Firm: Restoration Science & Engineering, LLC

Laboratory Name: SGS Environmental Services Laboratory Report Number: 1124371

ADEC File Number: 2100.26.202 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 Environmental Services 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:

      Samples were not transferred to a "network" laboratory

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

      The COC is provided at the end of the lab report

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

      AK 101, EPA Methods 8026, AK 102, and AK 103

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 temperature blank measured 2.1° C

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

      HCl was used to preserve GRO/VOC and DRO/RRO in water

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

Sample condition is documented at the end of the lab report

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:

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

Data quality or usability not affected

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

   Provided on pages 2 and 3 of the lab report

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

   However, QC failures were not detected above the LOQ in associated samples

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

   No corrective actions needed

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

   Data quality or usability not affected

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

   GRO by AK 101, VOCs by EPA 8260, DRO by AK 102 and RRO by AK 103

   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:

No soil 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:

Two VOC compounds, 1,2,3-Trichloropropane and 1,2-Dibromo-3-chloropropane are ND above the Cleanup level or MDL

e. Data quality or usability affected?
Comments:

NA

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

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

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

      NA

      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 affected samples

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

      Data quality or usability not affected

   b. 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:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No **NA** (Please explain.) Comments:

No metals or inorganics

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:

See Case Narrative on Pages 2 and 3 of the lab report

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:

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

Comments:

NA

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No **NA** (Please explain.) Comments:

No affected samples

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

Comments:

Data quality or usability not affected

c. Surrogates – Organics Only

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

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:

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 failed surrogate recoveries

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

Comments:

Data quality or usability not affected

d. 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:

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:

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

NA

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

Comments:

Data quality or usability not affected

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain.) Comments:

Water sample CHMWEX is a blind duplicate of CHMWE2

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

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:

5.71% RPD for DRO, 15.65% RPD for RRO, 1.68% for TCE, and 52.38 for vinyl chloride (FAILED)

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

Comments:

Data quality or usability not affected

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

Yes No **NA** (Please explain.) Comments:

i. All results less than PQL?

Yes No **NA** (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA

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

Comments:

NA

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No NA (Please explain.) Comments: