AP - 051

ANNUAL MONITORING REPORT

3/25/2008

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March 25, 2008

Glenn von Gonten
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: 2007 Annual Groundwater Report, Former Caribou Refinery, Kirtland, New Mexico

Dear Mr. von Gonten:

Introduction

This report provides results of the 2007 groundwater monitoring event for the Maverik Country Stores site (former Caribou Refinery) in Kirtland, New Mexico (**Figure 1**). This monitoring event was completed during the week of November 13, 2007 to meet the annual monitoring requirements for the site. The scope of work completed included:

- Fluid level measurements of the site wells;
- Low-flow groundwater sampling of nine wells in and around the impoundment area;
- Analytical evaluation of volatile organic compounds (VOCs) in groundwater.

Field methods, results and conclusions from the 2007 groundwater sampling event are discussed below.

Groundwater Sampling

The groundwater sampling activities were completed on November 13 and November 14, 2007. Prior to sampling site-wide fluid levels were measured using an oil/water interface probe to establish groundwater elevations (**Table 1**) for compilation of the site potentiometric surface map (**Figure 2**). During the measurement of the fluid levels, well condition was noted and the wells were secured with new locks. Fluid levels were not obtainable from four of the site wells including:

- MW-06 (unable to locate, possibly abandoned or destroyed)
- MW-04 (has been converted to an irrigation well within a pump house by Mr. Roland Jackson)

Two other wells are damaged including:

- MW-18 (loose monument, damaged PVC casing)
- MW-07 (loose monument, damaged PVC casing)

None of the monitoring wells contained measurable thicknesses of light non-aqueous phase liquids (LNAPL) during this event. Based on the November 2007 groundwater elevations, the groundwater flow direction is to the south-southwest across the site under a horizontal gradient ranging from .005 near the site to .008 east of the site in the residential area (**Figure 2**). This flow direction is consistent with past monitoring events.

Nine monitoring wells were low-flow sampled using a peristaltic pump and flow-through cell. Field parameters measured during the sampling event included pH, specific conductance, dissolved oxygen, oxygen reduction potential (ORP) and temperature. Field measurements are provided on the groundwater sampling forms in **Attachment A**. Groundwater samples were shipped to Test America in Arvada, Colorado under chain of custody protocol and analyzed for volatile organic compounds (VOCs) EPA Method 8260. Laboratory deliverables and ENSR data validation reports are provided in **Attachment B**.

Results of the groundwater sampling are summarized in **Table 2**. The groundwater results show that benzene, toluene, ethyl benzene, and xylene (BTEX) concentrations are confined to the slurry wall impoundment area (**Figure 3**). Other detected compounds from within the slurry wall wells (MW-17 and MW-22) included 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, isopropyl benzene, acetone, and naphthalene (**Table 2**). The VOC concentrations in the other downgradient wells (MW-10, MW-19 and MW-20) and cross gradient wells (MW-9, MW-16, and MW-21) were all reported at concentrations below the standard analytical detection limits for VOCs (**Table 2**). The upgradient well, MW-18, located on the northern edge of the impoundment had concentrations of acetone (90 µg/L), a possible laboratory artifact, and 1,2,4 trimethylbenzene (4.6 µg/L). The precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable, based on the data submitted (**Attachment B**).

In addition to standard groundwater field parameters (pH, temperature, and conductivity), dissolved oxygen (DO) and oxidation reduction potential (ORP) were measured within a flow through cell during groundwater sampling. Both DO and ORP levels are lower within the impoundment area wells compared to surrounding wells (**Attachment A**). The depressed DO and ORP is attributable to biodegradation of hydrocarbons within the impoundment. Well MW-21 on the east side of the impoundment continues to have a conductivity level of greater than an order of magnitude above other site wells. The elevated conductivity is presumed to be from salt solutions that are used and stored by the current property tenant. Review of historic data indicates that conductivity levels in MW-21 spiked in between October 1999 and October 2000, and have since declined.

Conclusions

The annual groundwater sampling of the Former Caribou Refinery was completed in November 2007. Nine wells in and around the slurry wall impoundment areas were low-flow sampled for VOCs. Fluid levels were measured from 17 wells to establish groundwater flow conditions. Groundwater flow is to the south-southwesterly groundwater flow across the site toward the San Juan River. Groundwater results were below analytical reporting limits for all 8260 VOCs with the exception of wells located within the slurry wall impoundment area (MW-17 and MW-22) and one well on the northern upgradient margin of the impoundment (MW-18). Groundwater within the slurry wall contains a suite of VOCs, primarily benzene, ethyl benzene, xylenes and trimethylbenzene compounds. The maximum benzene concentration was 22 µg/L in MW-17.

Through time and compared to the 2006 data set (RETEC, 2006), the groundwater VOC concentrations have declined appreciably likely through biodegradation processes. Evidence of natural attenuation of hydrocarbons in the slurry wall is also supported by reduction of DO and ORP in groundwater within the impoundment. Compounds such as 1,2-DCA are no longer detected in site groundwater and VOCs such as benzene have decreased by two orders of magnitude since the early 1990s. Overall, the slurry wall impoundment is functioning as designed and no off-site migration of hydrocarbons is occurring.

Sincerely,

Bjorn Selvig
Project Geologist

Attachments

cc: Dennis Riding, Maverik Country Stores, Inc.
Jenny Phillips, ENSR

Table 1 Monitoring Well Construction Summary and November 2007 Fluid Levels, Maverik Country Stores, Inc. (Former Caribou Refinery)

Well ID	Completion Date	Total Depth (ft. BGS)	Well Diameter (in.)	Top of Steel Casing Elevation (ft. AMSL)	Top of PVC Casing Elevation (ft. AMSL)	Ground Surface Elevation (ft. AMSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Screen Length (ft.)	Top of Screen Elevation (ft. AMSL)	Bottom of Screen Elevation (ft. AMSL)	Depth to Groundwater (feet) November 2007	Product Thickness (feet)	Groundwater Elevation (ft. AMSL)	Comments
MW-1	1987	21.5	2	5207.79	5207.24	5205.75	11.5	21.5	10	5194.25	5184.25	10.35		5196.89	
MW-2	1987	15	2	5197.10	5196.93	5195.25	5	15	10	5190.25	5180.25	6.35		5190.58	
MW-3	1987	14.5	2	5183.00	5181.46	5181.06	4.5	14.5	10	5176.56	5166.56	3.17		5178.29	
MW-4	1987	15	2	5178.41	5177.1	5176.14	5	15	10	5171.14	5161.14	NM		NM	Converted to irrigation well
MW-5	1987	15	2	5175.62	5175.09	5173.67	5	15	10	5168.67	5158.67	6.26		5168.83	
MW-6	1987	15.5	2	5176.40	5176.01	5174.23	5.5	15.5	10	5168.73	5158.73	NM		NM	
MW-7	1987	15	2	5183.71	5182.84	5181.73	5	15	10	5176.73	5166.73	5.64		5177.20	
MW-8	1987	15	2	5186.00	5185.87	5184.02	5	15	10	5179.02	5169.02	5.34		5180.53	
MW-9	1987	15	2	5191.39	5191.22	5189.33	5	15	10	5184.33	5174.33	4.53		5186.69	
MW-10	1987	12.5	2	5189.80	5189.30	5187.47	2.5	12.5	10	5184.97	5174.97	4.48		5184.82	
MW-11	1987	33	2	5197.26	5197.15	5194.97	23	33	10	5171.97	5161.97	NM		NM	abandoned 1990
MW-12	1987	12	2	5196.66	5196.19	5194.80	2	12	10	5192.80	5182.80	NM		NM	abandoned 1990
MW-13	1987	5	2	5187.76	na	5187.56	0	5	5	5187.56	5182.56	NM		NM	destroyed
MW-14	1989	6	2	na	5194.47	5190.70	1	6	5	5189.70	5184.70	8.10		5186.37	
MW-15	1989	6	2	na	5188.80	5185.40	1	6	5	5184.40	5179.40	5.17		5183.63	
MW-16	1990	13	2	na	5194.98	5193.74	3	13	10	5190.74	5180.74	6.31		5188.67	
MW-17	1993	15	2	5196.49	5195.91	5193.43	5	15	10	5188.43	5178.43	9.01		5186.90	
MW-18	1993	15	2	5202.27	5201.75	5199.14	5	15	10	5194.14	5184.14	12.07		5189.68	
MW-19	1990	12.5	2	na	5189.54	5188.28	2.5	12.5	10	5185.78	5175.78	3.56		5185.98	
MW-20	1990	12	2	na	5191.05	5190.10	2	12	10	5188.10	5178.10	4.74		5186.31	
MW-21	1990	13	2	na	5194.81	5193.62	3	13	10	5190.62	5180.62	6.65		5188.16	
MW-22	1990	13	2	na	5195.86	5194.58	3	13	10	5191.58	5181.58	7.55		5188.31	
P-1	1993	8	2	na	5197.66	5195.74	3	8	5	5192.74	5187.74	8.18		5189.48	
P-2	1993	8	2	na	5192.32	5190.50	3	8	5	5187.50	5182.50	5.07		5187.25	
P-3	1993	8	2	na	5193.21	5191.44	3	8	5	5188.44	5183.44	6.00		5187.21	
P-4	1993	8	2	na	5198.82	5197.06	3	8	5	5194.06	5189.06	9.41		5189.41	

Notes:

AMSL = Above mean sea level

BGS = Below ground surface

NM = Not Measured

na = not applicable

Table 2 Groundwater Results, Maverik Country Stores, Inc. (Former Caribou Refinery)

Wells / Units	MW-9 (µg/L)	MW-10 (µg/L)	MW-16 (µg/L)	MW-17 (µg/L)	MW-18 (µg/L)	MW-19 (µg/L)	MW-20 (µg/L)	MW-20D (µg/L)	MW-21 (µg/L)	MW-22 (µg/L)
Chemical										
1,1,1,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	**0.22 J**	< 1.0	< 1.0	**35**	**4.6**	< 1.0	< 1.0	< 1.0	< 1.0	**16**
1,2-Dibromo-3-chloropropane (DBCP)	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane (EDB)	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	**0.17 J**	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	**0.21 J**	< 1.0	< 1.0	< 1.0
1,2-Dichloroethene (total)	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	< 1.0	< 1.0	< 1.0	**9.2**	**0.16 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	**0.3 J**	< 1.0	**0.29 J**	< 4.0	< 1.0	< 1.0	**0.25 J**	**0.23 J**	**0.22 J**	**0.21 J**
1,3-Dichloropropane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Butanone (MEK)	< 6.0	< 6.0	< 6.0	< 24	**2.7 J**	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0
2-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	< 1.0	< 1.0	< 1.0	**1.2 J**	**0.87 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.37 J**
4-Methyl-2-pentanone	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone	**4.3 J**	**4.8 J**	**2.5 J**	< 40	**90.0**	**7.5 J**	< 10	< 10	< 10	< 10
Benzene	< 1.0	< 1.0	< 1.0	**22**	**0.27 J**	< 1.0	< 1.0	< 1.0	< 1.0	**14**
Bromobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

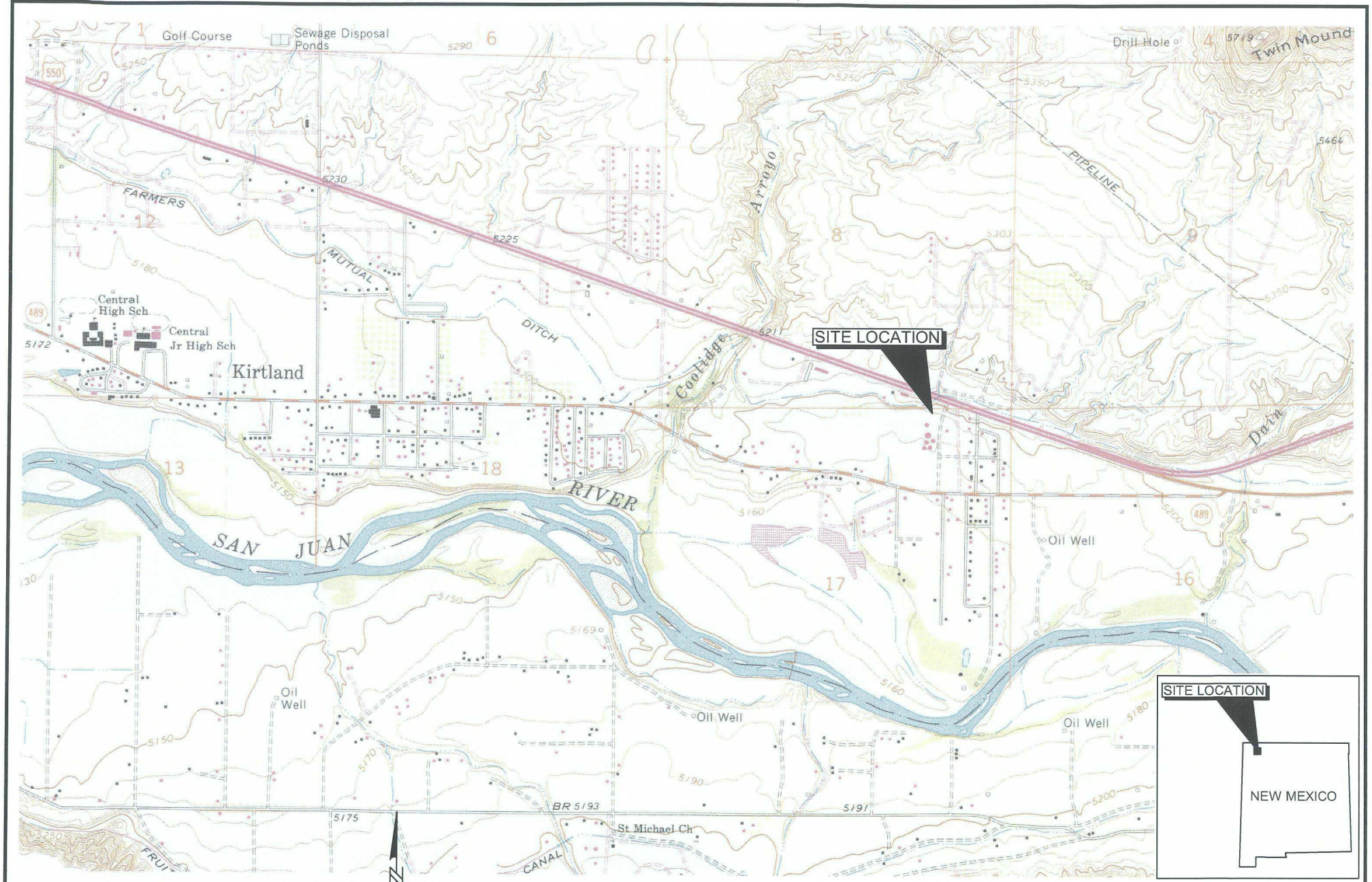
Table 2 Groundwater Results, Maverik Country Stores, Inc. (Former Caribou Refinery)

Wells / Units	MW-9 (µg/L)	MW-10 (µg/L)	MW-16 (µg/L)	MW-17 (µg/L)	MW-18 (µg/L)	MW-19 (µg/L)	MW-20 (µg/L)	MW-20D (µg/L)	MW-21 (µg/L)	MW-22 (µg/L)
Chemical										
cis-1,2-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	< 1.0	< 1.0	< 1.0	**2.9 J**	**0.41 J**	< 1.0	< 1.0	< 1.0	< 1.0	**15**
Hexachlorobutadiene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	< 1.0	< 1.0	< 1.0	**1.2 J**	**1.0**	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**
Methyl tert-butyl ether	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	< 5.0	< 5.0	< 5.0	< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
m-Xylene & p-Xylene	< 2.0	< 2.0	< 2.0	**28**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	**2.8**
Naphthalene	**0.25 J**	< 1.0	< 1.0	**2.8 J**	**0.24 J**	< 1.0	< 1.0	< 1.0	< 1.0	**0.67 J**
n-Butylbenzene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	< 1.0	< 1.0	< 1.0	**1.8 J**	**0.67 J**	< 1.0	< 1.0	< 1.0	< 1.0	**3.0**
o-Xylene	< 1.0	< 1.0	< 1.0	**3.1 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.81 J**
sec-Butylbenzene	< 1.0	< 1.0	< 1.0	**2.4 J**	**1.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	< 1.0	< 1.0	< 1.0	< 4.0	**0.31 J**	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**
Tetrachloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.41 J**
trans-1,2-Dichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	< 3.0	< 3.0	< 3.0	< 12	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethene	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes (total)	< 2.0	< 2.0	< 2.0	**31**	**0.21 J**	< 2.0	< 2.0	< 2.0	< 2.0	**3.6**

Notes:

J - Estimated result. Result is less than RL

File: H:\Maverik\12501001\Figure 1 Site Location Map.dwg Layout: FIGURE 1 User: lpaul Plotted: Mar 03, 2008 – 12:54pm Xref's:



ENSR | AECOM

2007 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

DATE: 03/03/08 | DRWN: LP/FTC

SITE LOCATION MAP

FIGURE 1

Co. Road 6261

Co. RoadD 6259

Co. RoadD 6263

Co. RoadD 6271

U.S. Highway 64

CO. Road 6100

MW-01
5196.89

MW-02
5190.58

MW-03
5178.29*

MW-04
NM

MW-05
5168.8

MW-07
5177.20*

MW-08
5180.53

MW-09
5186.69

MW-10
5184.82

MW-14
5186.37

MW-15
5183.63

MW-16
5188.67

MW-17
5186.90

MW-18
5189.68

MW-19
5185.98

MW-20
5186.31

MW-21
5188.16

MW-22
5188.31

P1
5189.48

P2
5187.3

P3
5187.21

P4
5189.41

5195 5193 5191 5189 5187 5185 5183 5181 5179

(Out of Service)

DITCH IS FILLED IN
AT THIS LOCATION

WESTSIDE
IRRIGATION DITCH

FARMER'S MUTUAL
IRRIGATION DITCH

MURRAY
PROPERTY
DITCH

G. Nelson

R. Jackson

Ryan

A. Jackson

M. Stone
(Abandoned)

WM. H. Walker

V. Murray
(Out of Service)

J. Bloomfield
(Out of Service)

C. Bloomfield

LEGEND

MW-4
5196.89 — MONITORING WELL WITH NOVEMBER 2007 GROUNDWATER ELEVATION

P1 — PIEZOMETER

E. Gray — PRIVATE WELL

APPROX. DIRECTION OF GROUNDWATER FLOW

SLURRY WALL

MAVERIK (CARIBOU) FORMER REFINERY BOUNDARY

* ELEVATION ESTIMATED (WELL DAMAGED)

ENSR | AECOM

100 0 200

1"=200'

2007 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

DATE: 03/03/08 | DRWN: LP/FTC

**POTENTIOMETRIC SURFACE MAP
NOVEMBER 13, 2007**

FIGURE 2

LEGEND

MW-4 — MONITORING WELL WITH NOVEMBER 2007 BTEX CONCENTRATIONS

Chemical (ug/L)	MW-22
Benzene	14
Toluene	0.41 J
Ethylbenzene	15
Xylenes (total)	3.6

J - Estimated result. Result is less than RL

P1 — PIEZOMETER

E. Gray — PRIVATE WELL

SLURRY WALL

MAVERIK (CARIBOU) FORMER REFINERY BOUNDARY

Chemical (ug/L)	MW-22
Benzene	14
Toluene	0.41 J
Ethylbenzene	15
Xylenes (total)	3.6

Chemical (ug/L)	MW-21
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-20
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-18
Benzene	0.27 J
Toluene	< 1.0
Ethylbenzene	0.41 J
Xylenes (total)	0.21 J

Chemical (ug/L)	MW-10
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-17
Benzene	22
Toluene	< 4.0
Ethylbenzene	2.9 J
Xylenes (total)	31

Chemical (ug/L)	MW-19
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-16
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

Chemical (ug/L)	MW-9
Benzene	< 1.0
Toluene	< 1.0
Ethylbenzene	< 1.0
Xylenes (total)	< 2.0

MW-15 MW-21 MW-20 MW-22 MW-18 MW-10 P4 P3 P1 P2 MW-17 MW-19 WESTSIDE IRRIGATION DITCH MW-16 MW-14 MW-09 DITCH IS FILLED IN AT THIS LOCATION MURRAY PROPERTY DITCH

40 0 80

SCALE IN FEET

ENSR | AECOM

2007 Annual Groundwater Report
Maverik (Caribou) Former Refinery
Kirtland, New Mexico (12501001-210)

DATE: 03/03/08 | DRWN: LP/FTC

BTEXCONCENTRATIONS IN GROUNDWATER NOVEMBER 1, 2007

FIGURE 3

File: H:\Maverik\12501001\Figure 3 Btex Concentrations in GW_Nov 2007.dwg Layout: FIGURE 3 User: lpaul Plotted: Mar 04, 2008 - 8:36am Xref's:

Attachment A

Field Forms

Groundwater Sampling Form

Well ID: MW-~~3~~9
Sampler(s): S. Jolan

Well Condition

Bump Posts: NA
Well Label: Yes
Visibility: Good
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra (Peristaltic)
Depth to water (ft): 4.53
Depth to product (ft): —
Total depth (ft): 16.66

Water column thickness (ft): 12.13
One Purge Volume (gal): 2.0

Groundwater Field Parameters

Date: 11/13/07 Start Time: 1351

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1357	0.8	7.32	2.722	17.58	0.24	75.7	—	clear w/ suspended black particles
1403	1.5	7.36	2.717	17.50	0.16	54.7	—	" "
1408	2.0	7.36	2.722	17.48	0.14	46.3	—	" "

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	—	—	YSI 556 Vendor calibrated
pH and SpC Calibration	—	—	YSI 556 " "
ORP Calibration	—	—	YSI 556 " "
~~Turbidity~~			~~Hanna~~

Sample Collection and Analytical Information

Date: 11/13/07 Time: 1410

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3x40ml	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments:

Groundwater Sampling Form

Well ID: MW- 10
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Well Label: Y/CS
Visibility: Good
Surface Pad: Good
Secured: Y/CS

Fluid Level/Purge Volume Information

Date: Time:

Purge Method: Waterra/Peristaltic
Depth to water (ft): 4.48
Depth to product (ft):
Total depth (ft): 15.20

Water column thickness (ft): 10.72
One Purge Volume (gal): 1.8

Groundwater Field Parameters

Date: 11/14/07 Start Time: 0918

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
0924	0.8	7.62	1.580	14.27	0.32	89.9	—	clear
0929	1.2	7.57	1.572	13.97	0.28	90.1	—	" "
0934	1.9	7.55	1.568	13.87	0.24	87.2	—	" "
0937	2.1	7.54	1.567	14.01	0.22	86.2	—	" "

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	11/14/07	0830	YSI 556
pH and SpC Calibration	" "	" "	YSI 556
ORP Calibration	—	—	YSI 556 vendor cal.
~~Turbidity~~			Hanna

Sample Collection and Analytical Information

Date: 11/14/07 Time: 0940

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, ~~Hanna Turbidity Meter~~

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3 x 40 mL	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments:

Groundwater Sampling Form

Well ID: MW- 16
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Visibility: Good
Secured: Yes
Well Label: Yes
Surface Pad: Good

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 6.31
Depth to product (ft): —
Total depth (ft): 14.61

Water column thickness (ft): 8.3
One Purge Volume (gal): 1.4

Groundwater Field Parameters

Date: 11/13/07 Start Time: 1421

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1427	0.8	7.20	2.864	17.24	0.74	46.8	—	clear w/ v. small suspended particles
1432	1.3	7.18	2.781	17.03	0.56	42.2	—	" "
1436	1.6	7.18	2.771	17.05	0.40	39.3	—	" "
1440	1.9	7.18	2.765	17.08	0.31	33.4	—	" "
1444	2.2	7.18	2.755	17.07	0.25	29.7	—	" "
1447	2.5	7.19	2.756	17.06	0.23	30.8	-	clear
1500	2.8	7.18	2.753	17.12	0.21	31.5	—	clear

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	—	—	YSI 556 Vendor cal.
pH and SpC Calibration	—	—	YSI 556 " "
ORP Calibration	—	—	YSI 556 " "
~~Turbidity~~			~~Hanna~~

Sample Collection and Analytical Information

Date: 11/13/07 Time: 1503

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3 x 40ml	HCl	—
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments:

Groundwater Sampling Form

Well ID: MW- 17
Sampler(s): S. Johnson

Well Condition

Bump Posts: N/A
Well Label: Yes
Visibility: Good
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 9.01
Depth to product (ft): —
Total depth (ft): 16.66
Water column thickness (ft): 7.65
One Purge Volume (gal): 1.3

Groundwater Field Parameters

Date: 11/14/07 Start Time: 1028

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1031 ~~0.3~~	0.3	7.31	2.880	18.15	0.14	-130.9	—	~~clear~~ gray, lots of suspended black particles
1037	1.1	7.30	2.907	18.14	0.38	-157.7	—	" "
1040	1.4	7.38	2.902	18.15	0.60	-165.9	—	" "
				Purged Dry, wait 5 min to sample				

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	11/14/07	0830	YSI 556
pH and SpC Calibration	"	"	YSI 556
ORP Calibration	—	—	YSI 556, Vendor cal.
~~Turbidity~~			Hanna

Sample Collection and Analytical Information

Date: 11/14/07 Time: 1050

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3x 40 ml	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments: Odor in purge water (chlorinated? NAPL?)
Lots of particulates (black suspended particles) in sample

Groundwater Sampling Form

Well ID: MW-18
Sampler(s):

Well Condition

Bump Posts: NA
Well Label: Yes
Visibility: Good
Surface Pad: Cracked
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 12.07
Depth to product (ft): —
Total depth (ft): 12.44
Water column thickness (ft): 0.37
One Purge Volume (gal): 0.1

Groundwater Field Parameters

Date: 11/14/07 Start Time: 0856

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
0858	< 0.1	6.75	0.31	15.95	2.26	67.7	—	cloudy, brown lots of dirt/sand
				Purged Dry, come back to sample				

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	11/14/07	0830	YSI 556
pH and SpC Calibration	"	"	YSI 556
ORP Calibration	—	—	YSI 556 Vendor cal.
Turbidity			Hanna

Sample Collection and Analytical Information

Date: 11/14/07 Time: 1140

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3 x 40ml	HCl	come back to sample, tubing was clogged on 11/13/07
☐					
☐					
☐					lots of dirt in sample
☐					
☐					
☐					
☐					

Comments:

Unable to pull any water out of well
Total Depth Varies considerably from previously gauging, well may have been damaged, surface pad is cracked
[illegible] around the well has been moved [illegible] when ~~have~~ pushed

Groundwater Sampling Form

Well ID: MW- 19
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Well Label: Yes
Visibility: Good
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 3.56
Depth to product (ft): —
Total depth (ft): 14.19
Water column thickness (ft): 10.63
One Purge Volume (gal): 1.8

Groundwater Field Parameters

Date: 11/14/07 Start Time: 0951

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
0956	0.5	7.45	1.702	14.12	0.20	116.4	—	clear w/ suspended black particles
1001	1.1	7.44	1.705	14.21	0.11	112.9	—	" "
1006	1.6	7.43	1.701	14.25	0.11	108.1	—	" "
1009	2.0	7.42	1.707	14.19	0.10	104.8	—	" "

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	11/14/07	0830	YSI 556
pH and SpC Calibration	" "	" "	YSI 556
ORP Calibration	—	—	YSI 556, Vendor cal.
~~Turbidity~~			Hanna

Sample Collection and Analytical Information

Date: 11/14/07 Time: 1013

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, ~~Hanna Turbidity Meter~~

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☑	VOCs	8260	3x40ml	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments:

Groundwater Sampling Form

Well ID: MW- 20
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Well Label: Yes
Visibility: ~~Good~~ OK
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra Peristaltic
Depth to water (ft): 4.74
Depth to product (ft): —
Total depth (ft): 13.56
Water column thickness (ft): 8.82
One Purge Volume (gal): 1.5

Groundwater Field Parameters

Date: 11/13/07 Start Time: 1547

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1551	0.6	7.50	2.051	16.05	0.14	65.6	—	clear w/ lots of suspended black particles
1558	1.2	7.49	2.023	15.88	0.11	58.2	—	clear w/ suspended black particles
1602	2.0	7.48	2.017	15.86	0.12	53.1	—	" " "
1606	2.4	7.48	2.016	15.81	0.11	50.1	—	clear w/ a small amount of suspended black particles

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	—	—	YSI 556 vendor cal.
pH and SpC Calibration	—	—	YSI 556 " "
ORP Calibration	—	—	YSI 556 " "
~~Turbidity~~			~~Hanna~~

Sample Collection and Analytical Information

Date: 11/13/07 Time: 1610

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3 x 40ml	HCl	
☒	VOCs	8260	3 x 40ml	HCl	MS/MSD
☒	VOCs	8260	3 x 40ml	HCl	DUP
☐					
☐					
☐					
☐					
☐					

Comments: collected MS/MSD. labeled MW-20-MS/MSD-111307
+ DUP-111307

Groundwater Sampling Form

Well ID: MW- 21
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Well Label: Good
Visibility: Good
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 6.65
Depth to product (ft):
Total depth (ft): 14.53
Water column thickness (ft): 7.88
One Purge Volume (gal): 1.3

Groundwater Field Parameters

Date: 11/13/07 Start Time: 1633

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1639	0.8	6.20	37.92	17.20	1.32	-1.4	—	green/gray, suspended black particles & organic matter
1644	1.1	6.13	42.34	17.30	1.12	6.3	—	" "
1648	1.3	6.16	42.63	17.24	1.17	9.6	—	" "
1652	1.5	6.13	42.22	17.15	1.04	11.0		sl. greenish tint, org. matter & suspen. blk part
			Purged Dry, wait 5 min to sample					
			@ ~1.7 gal					

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	—	—	YSI 556 Vendor cal.
pH and SpC Calibration	—	—	YSI 556 " "
ORP Calibration	—	—	YSI 556 " "
~~Turbidity~~			Hanna

Sample Collection and Analytical Information

Date: 11/13/07 Time: 1700

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, Hanna Turbidity Meter

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☑	VOCs	8260	3x40ml	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments: Purge water dark green/black at first & had a strange odor possibly associated w/ upgradient de-icing company. Well easily drawn down while purging, ran peristaltic very slowly small white flakes in H2O [illegible] tubing in well

Groundwater Sampling Form

Well ID: MW- 22
Sampler(s): S. Johnson

Well Condition

Bump Posts: NA
Well Label: Yes
Visibility: Good
Surface Pad: Good
Secured: Yes

Fluid Level/Purge Volume Information

Date: 11/13/07 Time: —

Purge Method: Waterra/Peristaltic
Depth to water (ft): 7.55
Depth to product (ft):
Total depth (ft): 13.98
Water column thickness (ft): 6.43
One Purge Volume (gal): 1.1

Groundwater Field Parameters

Date: 11/14/07 Start Time: 1101

Time	Evacuated (gal)	pH (SU)	SpCond. (mS)	Temp. (°C)	Dis. Ox. (ppm)	ORP (mV)	Turb. (NTU)	Sample Appearance/Description
1106	0.6	7.04	1.831	18.89	0.08	-163.8	—	gray w/ black suspended particles
1109	1.0	7.07	1.838	18.97	0.12	-184.2	—	" "
1112	1.2	7.27	1.833	19.30	0.12	-192.7	—	" "
1115	1.4	7.23	1.838	19.40	0.10	-185.7	—	" "

Meter Calibration Information

Probes	Date	Time	Comments
DO Calibration	11/14/07	0830	YSI 556
pH and SpC Calibration	"	"	YSI 556
ORP Calibration	—	—	YSI 556, Ukndor cal.
~~Turbidity~~			~~Hanna~~

Sample Collection and Analytical Information

Date: 11/14/07 Time: 1120

Laboratory: STL
COC Seal: Yes
Shipped by: FedEx
Shipping Container: Ice Cooler
Field Instrument(s): YSI Flow Through Cell, ~~Hanna Turbidity Meter~~

Check Box**	Parameters	Method	Container(s)	Preservative	Comments
☒	VOCs	8260	3 x 40ml	HCl	
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Comments: strong odor in purge water, slow recharge

Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc.

4124 (0807)

Client: ENSR (formerly RETEC)	Project Manager: Bjorn Selvig / Jenny Phillips	Date: 11/14/07	Chain of Custody Number: 404490
Address: 2709 Research Blvd. Suite 106	Telephone Number (Area Code)/Fax Number: 970-493-3700	Lab Number: —	Page 1 of 1
City: Fort Collins / State: CO / Zip Code: 80524	Site Contact: —	Lab Contact: Kae Yoder	
Project Name and Location (State): Maverick County Sites, Kirtland NM	Carrier/Waybill Number: —		
Contract/Purchase Order/Quote No.: 7			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: VOCs (8260)	Special Instructions/ Conditions of Receipt
MW-9-111307	11/13/07	1410		X						3			X	
MW-10-111407	11/14/07	0940		X						3			X	
MW-16-111307	11/13/07	1503		X						3			X	
MW-17-111407	11/14/07	1050		X						3			X	
MW-18-111407	11/14/07	1140		X						3			X	
MW-19-111407	11/14/07	1013		X						3			X	
MW-20-111307	11/13/07	1610		X						3			X	
MW-20-MS/MSD-111307	11/13/07	1610		X						6			X	
MW-21-111307	11/13/07	1700		X						3			X	
MW-22-111407	11/14/07	1120		X						3			X	
DUP-111307	11/13/07	—		X						3			X	
Trip blanks-111407	11/14/07	—		X						2			X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other routine

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	11/14/07	1300	1. Received By: FedEx	11/14/07	1300
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Attachment B

Laboratory Data and Data Validation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

MAVERICK

Lot #: D7K150223

Leslie Hill

The RETEC Group, Inc.
2409 Research Blvd.
Suite 106
Fort Collins, CO 80526

TestAmerica DENVER

Kae E. Yoder
Project Manager

December 4, 2007

Lot # D7K150223

CASE NARRATIVE
D7K150223

The following report contains the analytical results for ten water samples and one trip blank submitted to TestAmerica Denver by The RETEC Group, Inc. from the Maverick site. The samples were received November 29, 2007, according to documented sample acceptance procedures.

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter listed on the methods summary page in accordance with the method indicated. A summary of QC data for these analyses is included. Dilution factors and footnotes have been provided on each datasheet to assist in the interpretation of the results.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Receipt

Samples were received in good condition at a temperature of 1.1°C. No anomalies were encountered during sample receipt.

GC/MS Volatile Organics – 8260B

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, sample MW-17-111407 had to be analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.

Surrogate Dibromofluoromethane was recovered outside the QC control limits in sample MW-17-111407, due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

Low levels of 1,2-Dichlorobenzene are present in the method blank associated with QC batch 7330142. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

MS/MSD were performed on sample MW-20-111307, as requested. The MS/MSD exhibited a percent recovery outside the QC control limits for 1,1-Dichloroethane. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

EXECUTIVE SUMMARY - Detection Highlights

D7K150223

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-9-111307 11/13/07 14:10 001				
Acetone	4.3 J	10	ug/L	SW846 8260B
1,3-Dichlorobenzene	0.30 J	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	0.17 J	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	0.22 J	1.0	ug/L	SW846 8260B
Naphthalene	0.25 J	1.0	ug/L	SW846 8260B
MW-10-111407 11/14/07 09:40 002				
Acetone	4.8 J	10	ug/L	SW846 8260B
MW-16-111307 11/13/07 15:03 003				
Acetone	2.5 J	10	ug/L	SW846 8260B
1,3-Dichlorobenzene	0.29 J	1.0	ug/L	SW846 8260B
MW-17-111407 11/14/07 10:50 004				
Benzene	22	4.0	ug/L	SW846 8260B
Ethylbenzene	2.9 J	4.0	ug/L	SW846 8260B
Xylenes (total)	31	8.0	ug/L	SW846 8260B
sec-Butylbenzene	2.4 J	4.0	ug/L	SW846 8260B
Isopropylbenzene	1.2 J	4.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	35	4.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	9.2	4.0	ug/L	SW846 8260B
n-Propylbenzene	1.8 J	4.0	ug/L	SW846 8260B
4-Isopropyltoluene	1.2 J	4.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	28	8.0	ug/L	SW846 8260B
o-Xylene	3.1 J	4.0	ug/L	SW846 8260B
Naphthalene	2.8 J	4.0	ug/L	SW846 8260B
MW-18-111407 11/14/07 11:40 005				
Acetone	90	10	ug/L	SW846 8260B
Benzene	0.27 J	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	2.7 J	6.0	ug/L	SW846 8260B
Ethylbenzene	0.41 J	1.0	ug/L	SW846 8260B
Xylenes (total)	0.21 J	2.0	ug/L	SW846 8260B
sec-Butylbenzene	1.1	1.0	ug/L	SW846 8260B
Isopropylbenzene	1.0	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	4.6	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	0.16 J	1.0	ug/L	SW846 8260B
n-Propylbenzene	0.67 J	1.0	ug/L	SW846 8260B
tert-Butylbenzene	0.31 J	1.0	ug/L	SW846 8260B

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EXECUTIVE SUMMARY - Detection Highlights

D7K150223

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-18-111407 11/14/07 11:40 005				
4-Isopropyltoluene	0.87 J	1.0	ug/L	SW846 8260B
Naphthalene	0.24 J	1.0	ug/L	SW846 8260B
MW-19-111407 11/14/07 10:13 006				
Acetone	7.5 J	10	ug/L	SW846 8260B
MW-20-111307 11/13/07 16:10 007				
1,3-Dichlorobenzene	0.25 J	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	0.21 J	1.0	ug/L	SW846 8260B
MW-21-111307 11/13/07 17:00 008				
1,3-Dichlorobenzene	0.22 J	1.0	ug/L	SW846 8260B
MW-22-111407 11/14/07 11:20 009				
Benzene	14	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	0.21 J	1.0	ug/L	SW846 8260B
Ethylbenzene	15	1.0	ug/L	SW846 8260B
Toluene	0.41 J	1.0	ug/L	SW846 8260B
Xylenes (total)	3.6	2.0	ug/L	SW846 8260B
Isopropylbenzene	1.1	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	16	1.0	ug/L	SW846 8260B
n-Propylbenzene	3.0	1.0	ug/L	SW846 8260B
tert-Butylbenzene	1.8	1.0	ug/L	SW846 8260B
4-Isopropyltoluene	0.37 J	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	2.8	2.0	ug/L	SW846 8260B
o-Xylene	0.81 J	1.0	ug/L	SW846 8260B
Naphthalene	0.67 J	1.0	ug/L	SW846 8260B
DUP-111307 11/13/07 010				
1,3-Dichlorobenzene	0.23 J	1.0	ug/L	SW846 8260B
TRIPBLANKS-111407 11/14/07 011				
Acetone	2.5 J	10	ug/L	SW846 8260B

METHODS SUMMARY

D7K150223

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D7K150223

ANALYTICAL METHOD	ANALYST	ANALYST ID
SW846 8260B	Brett Littlejohn	007762

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D7K150223

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KCA27	001	MW-9-111307	11/13/07	14:10
KCA3R	002	MW-10-111407	11/14/07	09:40
KCA3V	003	MW-16-111307	11/13/07	15:03
KCA3W	004	MW-17-111407	11/14/07	10:50
KCA30	005	MW-18-111407	11/14/07	11:40
KCA31	006	MW-19-111407	11/14/07	10:13
KCA32	007	MW-20-111307	11/13/07	16:10
KCA33	008	MW-21-111307	11/13/07	17:00
KCA35	009	MW-22-111407	11/14/07	11:20
KCA36	010	DUP-111307	11/13/07	
KCA38	011	TRIPBLANKS-111407	11/14/07	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

ENSR International

Client Sample ID: MW-9-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-001 **Work Order #...:** KCA271AA **Matrix.....:** WG
Date Sampled...: 11/13/07 14:10 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 13:18
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**4.3 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.30 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	**0.17 J**	**1.0**	**ug/L**	**0.13**
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-9-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-001 **Work Order #...:** KCA271AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	**0.22 J**	**1.0**	**ug/L**	**0.14**
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	**0.25 J**	**1.0**	**ug/L**	**0.22**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(79 - 119)
1,2-Dichloroethane-d4	91	(65 - 126)
4-Bromofluorobenzene	99	(75 - 115)
Toluene-d8	104	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-10-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-002 **Work Order #...:** KCA3R1AA **Matrix.....:** WG
Date Sampled...: 11/14/07 09:40 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 13:39
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**4.8 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-10-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-002 **Work Order #...:** KCA3R1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	112	(79 - 119)
1,2-Dichloroethane-d4	83	(65 - 126)
4-Bromofluorobenzene	88	(75 - 115)
Toluene-d8	93	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-16-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-003 **Work Order #...:** KCA3V1AA **Matrix.....:** WG
Date Sampled...: 11/13/07 15:03 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 14:01
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.5 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.29 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-16-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-003 **Work Order #...:** KCA3V1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	114	(79 - 119)
1,2-Dichloroethane-d4	85	(65 - 126)
4-Bromofluorobenzene	89	(75 - 115)
Toluene-d8	95	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-17-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-004 **Work Order #...:** KCA3W1AA **Matrix.....:** WG
Date Sampled...: 11/14/07 10:50 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 20:04
Dilution Factor: 4

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	40	ug/L	7.6
Benzene	**22**	**4.0**	**ug/L**	**0.64**
Bromodichloromethane	ND	4.0	ug/L	0.68
Bromoform	ND	4.0	ug/L	0.76
Bromomethane	ND	8.0	ug/L	0.84
2-Butanone (MEK)	ND	24	ug/L	7.3
Carbon tetrachloride	ND	4.0	ug/L	0.76
Chlorobenzene	ND	4.0	ug/L	0.68
Chloroethane	ND	8.0	ug/L	1.6
Chloroform	ND	4.0	ug/L	0.64
Chloromethane	ND	8.0	ug/L	1.2
Dibromomethane	ND	4.0	ug/L	0.68
1,2-Dibromoethane (EDB)	ND	4.0	ug/L	0.72
1,2-Dichlorobenzene	ND	4.0	ug/L	0.52
1,3-Dichlorobenzene	ND	4.0	ug/L	0.64
1,4-Dichlorobenzene	ND	4.0	ug/L	0.64
Dichlorodifluoromethane	ND	8.0	ug/L	1.2
1,1-Dichloroethane	ND	4.0	ug/L	0.64
1,2-Dichloroethane	ND	4.0	ug/L	0.52
1,1-Dichloroethene	ND	4.0	ug/L	0.56
1,2-Dichloroethene (total)	ND	4.0	ug/L	0.60
cis-1,2-Dichloroethene	ND	4.0	ug/L	0.60
trans-1,2-Dichloroethene	ND	4.0	ug/L	0.60
1,2-Dichloropropane	ND	4.0	ug/L	0.52
cis-1,3-Dichloropropene	ND	4.0	ug/L	0.64
trans-1,3-Dichloropropene	ND	12	ug/L	0.76
Ethylbenzene	**2.9 J**	**4.0**	**ug/L**	**0.64**
2-Hexanone	ND	20	ug/L	5.6
Methylene chloride	ND	20	ug/L	1.3
4-Methyl-2-pentanone	ND	20	ug/L	2.0
Styrene	ND	4.0	ug/L	0.68
1,1,1,2-Tetrachloroethane	ND	4.0	ug/L	0.68
1,1,2,2-Tetrachloroethane	ND	4.0	ug/L	0.80
Tetrachloroethene	ND	4.0	ug/L	0.80
Toluene	ND	4.0	ug/L	0.68
1,2,4-Trichloro-benzene	ND	4.0	ug/L	1.3

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ENSR International

Client Sample ID: MW-17-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-004 **Work Order #...:** KCA3W1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	4.0	ug/L	0.64
1,1,2-Trichloroethane	ND	4.0	ug/L	1.3
Trichloroethene	ND	4.0	ug/L	0.64
Trichlorofluoromethane	ND	8.0	ug/L	1.2
1,2,3-Trichloropropane	ND	4.0	ug/L	1.1
Vinyl chloride	ND	4.0	ug/L	0.68
Xylenes (total)	**31**	**8.0**	**ug/L**	**0.76**
n-Butylbenzene	ND	4.0	ug/L	0.56
sec-Butylbenzene	**2.4 J**	**4.0**	**ug/L**	**0.68**
Isopropylbenzene	**1.2 J**	**4.0**	**ug/L**	**0.76**
1,2,4-Trimethylbenzene	**35**	**4.0**	**ug/L**	**0.56**
1,3,5-Trimethylbenzene	**9.2**	**4.0**	**ug/L**	**0.56**
n-Propylbenzene	**1.8 J**	**4.0**	**ug/L**	**0.64**
tert-Butylbenzene	ND	4.0	ug/L	0.64
Dibromochloromethane	ND	4.0	ug/L	0.68
2-Chlorotoluene	ND	4.0	ug/L	0.68
4-Chlorotoluene	ND	4.0	ug/L	0.68
1,2-Dibromo-3-chloropropane (DBCP)	ND	20	ug/L	6.0
1,3-Dichloropropane	ND	4.0	ug/L	0.60
2,2-Dichloropropane	ND	20	ug/L	0.80
1,1-Dichloropropene	ND	4.0	ug/L	0.60
Hexachlorobutadiene	ND	4.0	ug/L	0.48
4-Isopropyltoluene	**1.2 J**	**4.0**	**ug/L**	**0.68**
Methyl tert-butyl ether	ND	20	ug/L	1.0
1,2,3-Trichlorobenzene	ND	4.0	ug/L	0.72
m-Xylene & p-Xylene	**28**	**8.0**	**ug/L**	**1.4**
o-Xylene	**3.1 J**	**4.0**	**ug/L**	**0.76**
Bromobenzene	ND	4.0	ug/L	0.68
Bromochloromethane	ND	4.0	ug/L	0.40
Naphthalene	**2.8 J**	**4.0**	**ug/L**	**0.88**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	122 *	(79 - 119)
1,2-Dichloroethane-d4	93	(65 - 126)
4-Bromofluorobenzene	96	(75 - 115)
Toluene-d8	92	(78 - 118)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-18-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-005 Work Order #...: KCA301AA Matrix.....: WG
Date Sampled...: 11/14/07 11:40 Date Received..: 11/15/07
Prep Date.....: 11/23/07 Analysis Date..: 11/23/07
Prep Batch #...: 7330142 Analysis Time..: 14:22
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**90**	**10**	**ug/L**	**1.9**
Benzene	**0.27 J**	**1.0**	**ug/L**	**0.16**
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	**2.7 J**	**6.0**	**ug/L**	**1.8**
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	**0.41 J**	**1.0**	**ug/L**	**0.16**
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-18-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-005 **Work Order #...:** KCA301AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	**0.21 J**	**2.0**	**ug/L**	**0.19**
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	**1.1**	**1.0**	**ug/L**	**0.17**
Isopropylbenzene	**1.0**	**1.0**	**ug/L**	**0.19**
1,2,4-Trimethylbenzene	**4.6**	**1.0**	**ug/L**	**0.14**
1,3,5-Trimethylbenzene	**0.16 J**	**1.0**	**ug/L**	**0.14**
n-Propylbenzene	**0.67 J**	**1.0**	**ug/L**	**0.16**
tert-Butylbenzene	**0.31 J**	**1.0**	**ug/L**	**0.16**
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	**0.87 J**	**1.0**	**ug/L**	**0.17**
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	**0.24 J**	**1.0**	**ug/L**	**0.22**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(79 - 119)
1,2-Dichloroethane-d4	93	(65 - 126)
4-Bromofluorobenzene	97	(75 - 115)
Toluene-d8	99	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-19-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-006 **Work Order #...:** KCA311AA **Matrix.....:** WG
Date Sampled...: 11/14/07 10:13 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 14:43
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**7.5 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-19-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-006 **Work Order #...:** KCA311AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(79 - 119)
1,2-Dichloroethane-d4	93	(65 - 126)
4-Bromofluorobenzene	95	(75 - 115)
Toluene-d8	100	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-20-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-007 **Work Order #...:** KCA321AA **Matrix.....:** WG
Date Sampled...: 11/13/07 16:10 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 11:52
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.25 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	**0.21 J**	**1.0**	**ug/L**	**0.13**
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-20-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-007 **Work Order #...:** KCA321AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	111	(79 - 119)
1,2-Dichloroethane-d4	83	(65 - 126)
4-Bromofluorobenzene	90	(75 - 115)
Toluene-d8	96	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-21-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-008 **Work Order #...:** KCA331AA **Matrix.....:** WG
Date Sampled...: 11/13/07 17:00 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 15:05
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.22 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-21-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-008 **Work Order #...:** KCA331AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	113	(79 - 119)
1,2-Dichloroethane-d4	107	(65 - 126)
4-Bromofluorobenzene	97	(75 - 115)
Toluene-d8	90	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: MW-22-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-009 **Work Order #...:** KCA351AA **Matrix.....:** WG
Date Sampled...: 11/14/07 11:20 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 15:26
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	**14**	**1.0**	**ug/L**	**0.16**
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	**15**	**1.0**	**ug/L**	**0.16**
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	**0.41 J**	**1.0**	**ug/L**	**0.17**
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: MW-22-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-009 **Work Order #...:** KCA351AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	**3.6**	**2.0**	**ug/L**	**0.19**
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	**1.1**	**1.0**	**ug/L**	**0.19**
1,2,4-Trimethylbenzene	**16**	**1.0**	**ug/L**	**0.14**
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	**3.0**	**1.0**	**ug/L**	**0.16**
tert-Butylbenzene	**1.8**	**1.0**	**ug/L**	**0.16**
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	**0.37 J**	**1.0**	**ug/L**	**0.17**
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	**2.8**	**2.0**	**ug/L**	**0.34**
o-Xylene	**0.81 J**	**1.0**	**ug/L**	**0.19**
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	**0.67 J**	**1.0**	**ug/L**	**0.22**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(79 - 119)
1,2-Dichloroethane-d4	92	(65 - 126)
4-Bromofluorobenzene	93	(75 - 115)
Toluene-d8	92	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: DUP-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-010 **Work Order #...:** KCA361AA **Matrix.....:** WG
Date Sampled...: 11/13/07 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 15:48
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	10	ug/L	1.9
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	**0.23 J**	**1.0**	**ug/L**	**0.16**
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: DUP-111307

GC/MS Volatiles

Lot-Sample #...: D7K150223-010 **Work Order #...:** KCA361AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	114	(79 - 119)
1,2-Dichloroethane-d4	85	(65 - 126)
4-Bromofluorobenzene	90	(75 - 115)
Toluene-d8	92	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

ENSR International

Client Sample ID: TRIPBLANKS-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-011 **Work Order #...:** KCA381AA **Matrix.....:** WQ
Date Sampled...: 11/14/07 **Date Received..:** 11/15/07
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 16:09
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	**2.5 J**	**10**	**ug/L**	**1.9**
Benzene	ND	1.0	ug/L	0.16
Bromodichloromethane	ND	1.0	ug/L	0.17
Bromoform	ND	1.0	ug/L	0.19
Bromomethane	ND	2.0	ug/L	0.21
2-Butanone (MEK)	ND	6.0	ug/L	1.8
Carbon tetrachloride	ND	1.0	ug/L	0.19
Chlorobenzene	ND	1.0	ug/L	0.17
Chloroethane	ND	2.0	ug/L	0.41
Chloroform	ND	1.0	ug/L	0.16
Chloromethane	ND	2.0	ug/L	0.30
Dibromomethane	ND	1.0	ug/L	0.17
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	0.18
1,2-Dichlorobenzene	ND	1.0	ug/L	0.13
1,3-Dichlorobenzene	ND	1.0	ug/L	0.16
1,4-Dichlorobenzene	ND	1.0	ug/L	0.16
Dichlorodifluoromethane	ND	2.0	ug/L	0.31
1,1-Dichloroethane	ND	1.0	ug/L	0.16
1,2-Dichloroethane	ND	1.0	ug/L	0.13
1,1-Dichloroethene	ND	1.0	ug/L	0.14
1,2-Dichloroethene (total)	ND	1.0	ug/L	0.15
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.15
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.15
1,2-Dichloropropane	ND	1.0	ug/L	0.13
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.16
trans-1,3-Dichloropropene	ND	3.0	ug/L	0.19
Ethylbenzene	ND	1.0	ug/L	0.16
2-Hexanone	ND	5.0	ug/L	1.4
Methylene chloride	ND	5.0	ug/L	0.32
4-Methyl-2-pentanone	ND	5.0	ug/L	0.49
Styrene	ND	1.0	ug/L	0.17
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.20
Tetrachloroethene	ND	1.0	ug/L	0.20
Toluene	ND	1.0	ug/L	0.17
1,2,4-Trichloro-benzene	ND	1.0	ug/L	0.32

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ENSR International

Client Sample ID: TRIPBLANKS-111407

GC/MS Volatiles

Lot-Sample #...: D7K150223-011 **Work Order #...:** KCA381AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,1,1-Trichloroethane	ND	1.0	ug/L	0.16
1,1,2-Trichloroethane	ND	1.0	ug/L	0.32
Trichloroethene	ND	1.0	ug/L	0.16
Trichlorofluoromethane	ND	2.0	ug/L	0.29
1,2,3-Trichloropropane	ND	1.0	ug/L	0.27
Vinyl chloride	ND	1.0	ug/L	0.17
Xylenes (total)	ND	2.0	ug/L	0.19
n-Butylbenzene	ND	1.0	ug/L	0.14
sec-Butylbenzene	ND	1.0	ug/L	0.17
Isopropylbenzene	ND	1.0	ug/L	0.19
1,2,4-Trimethylbenzene	ND	1.0	ug/L	0.14
1,3,5-Trimethylbenzene	ND	1.0	ug/L	0.14
n-Propylbenzene	ND	1.0	ug/L	0.16
tert-Butylbenzene	ND	1.0	ug/L	0.16
Dibromochloromethane	ND	1.0	ug/L	0.17
2-Chlorotoluene	ND	1.0	ug/L	0.17
4-Chlorotoluene	ND	1.0	ug/L	0.17
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	1.5
1,3-Dichloropropane	ND	1.0	ug/L	0.15
2,2-Dichloropropane	ND	5.0	ug/L	0.20
1,1-Dichloropropene	ND	1.0	ug/L	0.15
Hexachlorobutadiene	ND	1.0	ug/L	0.12
4-Isopropyltoluene	ND	1.0	ug/L	0.17
Methyl tert-butyl ether	ND	5.0	ug/L	0.25
1,2,3-Trichlorobenzene	ND	1.0	ug/L	0.18
m-Xylene & p-Xylene	ND	2.0	ug/L	0.34
o-Xylene	ND	1.0	ug/L	0.19
Bromobenzene	ND	1.0	ug/L	0.17
Bromochloromethane	ND	1.0	ug/L	0.10
Naphthalene	ND	1.0	ug/L	0.22

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(79 - 119)
1,2-Dichloroethane-d4	87	(65 - 126)
4-Bromofluorobenzene	92	(75 - 115)
Toluene-d8	95	(78 - 118)

NOTE(S):

J Estimated result. Result is less than RL.

QC DATA ASSOCIATION SUMMARY

D7K150223

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 8260B		7330142	7330083
002	WG	SW846 8260B		7330142	7330083
003	WG	SW846 8260B		7330142	7330083
004	WG	SW846 8260B		7330142	7330083
005	WG	SW846 8260B		7330142	7330083
006	WG	SW846 8260B		7330142	7330083
007	WG	SW846 8260B		7330142	7330083
008	WG	SW846 8260B		7330142	7330083
009	WG	SW846 8260B		7330142	7330083
010	WG	SW846 8260B		7330142	7330083
011	WQ	SW846 8260B		7330142	7330083

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 **Work Order #...:** KCVDE1AA **Matrix.....:** WATER
MB Lot-Sample #: D7K260000-142

Prep Date.....: 11/23/07 **Analysis Time..:** 10:22
Analysis Date..: 11/23/07 **Prep Batch #...:** 7330142
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	6.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	**0.19 J**	**1.0**	**ug/L**	**SW846 8260B**
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	3.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	5.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 **Work Order #...:** KCVDE1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	ug/L	SW846 8260B
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B
2,2-Dichloropropane	ND	5.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
4-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	5.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	2.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	107	(79 - 119)
1,2-Dichloroethane-d4	90	(65 - 126)
4-Bromofluorobenzene	99	(75 - 115)
Toluene-d8	104	(78 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 **Work Order #...:** KCVDE1AC **Matrix.....:** WATER
LCS Lot-Sample#: D7K260000-142
Prep Date.....: 11/23/07 **Analysis Date..:** 11/23/07
Prep Batch #...: 7330142 **Analysis Time..:** 10:01
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**89**	**(77 - 118)**	**SW846 8260B**
Bromodichloromethane	**93**	**(78 - 118)**	**SW846 8260B**
Carbon tetrachloride	**92**	**(80 - 120)**	**SW846 8260B**
Chlorobenzene	**94**	**(78 - 118)**	**SW846 8260B**
Chloroform	**91**	**(78 - 118)**	**SW846 8260B**
1,3-Dichlorobenzene	**95**	**(75 - 115)**	**SW846 8260B**
1,1-Dichloroethane	**87**	**(77 - 117)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(68 - 133)**	**SW846 8260B**
trans-1,2-Dichloroethene	**97**	**(80 - 120)**	**SW846 8260B**
1,2-Dichloropropane	**89**	**(76 - 116)**	**SW846 8260B**
Ethylbenzene	**97**	**(78 - 118)**	**SW846 8260B**
Methylene chloride	**95**	**(71 - 119)**	**SW846 8260B**
Tetrachloroethene	**84**	**(77 - 117)**	**SW846 8260B**
Toluene	**86**	**(73 - 120)**	**SW846 8260B**
1,1,1-Trichloroethane	**89**	**(78 - 118)**	**SW846 8260B**
Trichloroethene	**106**	**(78 - 122)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(79 - 119)
1,2-Dichloroethane-d4	98	(65 - 126)
4-Bromofluorobenzene	96	(75 - 115)
Toluene-d8	104	(78 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 Work Order #...: KCVDE1AC Matrix.....: WATER
LCS Lot-Sample#: D7K260000-142
Prep Date.....: 11/23/07 Analysis Date..: 11/23/07
Prep Batch #...: 7330142 Analysis Time..: 10:01
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**8.87**	**ug/L**	**89**	**SW846 8260B**
Bromodichloromethane	**10.0**	**9.28**	**ug/L**	**93**	**SW846 8260B**
Carbon tetrachloride	**10.0**	**9.23**	**ug/L**	**92**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.42**	**ug/L**	**94**	**SW846 8260B**
Chloroform	**10.0**	**9.06**	**ug/L**	**91**	**SW846 8260B**
1,3-Dichlorobenzene	**10.0**	**9.51**	**ug/L**	**95**	**SW846 8260B**
1,1-Dichloroethane	**10.0**	**8.75**	**ug/L**	**87**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
trans-1,2-Dichloroethene	**10.0**	**9.68**	**ug/L**	**97**	**SW846 8260B**
1,2-Dichloropropane	**10.0**	**8.88**	**ug/L**	**89**	**SW846 8260B**
Ethylbenzene	**10.0**	**9.66**	**ug/L**	**97**	**SW846 8260B**
Methylene chloride	**10.0**	**9.50**	**ug/L**	**95**	**SW846 8260B**
Tetrachloroethene	**10.0**	**8.44**	**ug/L**	**84**	**SW846 8260B**
Toluene	**10.0**	**8.56**	**ug/L**	**86**	**SW846 8260B**
1,1,1-Trichloroethane	**10.0**	**8.90**	**ug/L**	**89**	**SW846 8260B**
Trichloroethene	**10.0**	**10.6**	**ug/L**	**106**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(79 - 119)
1,2-Dichloroethane-d4	98	(65 - 126)
4-Bromofluorobenzene	96	(75 - 115)
Toluene-d8	104	(78 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 Work Order #...: KCA321AC-MS Matrix.....: WG
MS Lot-Sample #: D7K150223-007 KCA321AD-MSD
Date Sampled...: 11/13/07 16:10 Date Received..: 11/15/07
Prep Date.....: 11/23/07 Analysis Date..: 11/23/07
Prep Batch #...: 7330142 Analysis Time..: 12:14
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	83	(77 - 118)			SW846 8260B
	81	(77 - 118)	2.8	(0-20)	SW846 8260B
Bromodichloromethane	88	(78 - 118)			SW846 8260B
	87	(78 - 118)	1.4	(0-20)	SW846 8260B
Carbon tetrachloride	91	(80 - 120)			SW846 8260B
	95	(80 - 120)	4.3	(0-21)	SW846 8260B
Chlorobenzene	90	(78 - 118)			SW846 8260B
	88	(78 - 118)	2.7	(0-20)	SW846 8260B
Chloroform	87	(78 - 118)			SW846 8260B
	87	(78 - 118)	0.04	(0-20)	SW846 8260B
1,3-Dichlorobenzene	88	(75 - 115)			SW846 8260B
	89	(75 - 115)	0.77	(0-20)	SW846 8260B
1,1-Dichloroethane	79	(77 - 117)			SW846 8260B
	76 a	(77 - 117)	3.2	(0-21)	SW846 8260B
1,1-Dichloroethene	93	(68 - 133)			SW846 8260B
	95	(68 - 133)	2.2	(0-20)	SW846 8260B
trans-1,2-Dichloroethene	94	(80 - 120)			SW846 8260B
	94	(80 - 120)	0.36	(0-24)	SW846 8260B
1,2-Dichloropropane	80	(76 - 116)			SW846 8260B
	77	(76 - 116)	3.9	(0-20)	SW846 8260B
Ethylbenzene	92	(78 - 118)			SW846 8260B
	88	(78 - 118)	4.6	(0-26)	SW846 8260B
Methylene chloride	89	(71 - 119)			SW846 8260B
	88	(71 - 119)	0.98	(0-20)	SW846 8260B
Tetrachloroethene	90	(77 - 117)			SW846 8260B
	90	(77 - 117)	0.27	(0-20)	SW846 8260B
Toluene	77	(73 - 120)			SW846 8260B
	73	(73 - 120)	4.9	(0-20)	SW846 8260B
1,1,1-Trichloroethane	87	(78 - 118)			SW846 8260B
	88	(78 - 118)	0.88	(0-20)	SW846 8260B
Trichloroethene	115	(78 - 122)			SW846 8260B
	116	(78 - 122)	1.1	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	114	(79 - 119)
	111	(79 - 119)
1,2-Dichloroethane-d4	88	(65 - 126)
	84	(65 - 126)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 **Work Order #...:** KCA321AC-MS **Matrix.....:** WG
MS Lot-Sample #: D7K150223-007 KCA321AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	86	(75 - 115)
	84	(75 - 115)
Toluene-d8	96	(78 - 118)
	93	(78 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 Work Order #...: KCA321AC-MS Matrix.....: WG
MS Lot-Sample #: D7K150223-007 KCA321AD-MSD
Date Sampled...: 11/13/07 16:10 Date Received..: 11/15/07
Prep Date.....: 11/23/07 Analysis Date..: 11/23/07
Prep Batch #...: 7330142 Analysis Time..: 12:14
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10.0	8.32	ug/L	83		SW846 8260B
	ND	10.0	8.09	ug/L	81	2.8	SW846 8260B
Bromodichloromethane	ND	10.0	8.81	ug/L	88		SW846 8260B
	ND	10.0	8.69	ug/L	87	1.4	SW846 8260B
Carbon tetrachloride	ND	10.0	9.14	ug/L	91		SW846 8260B
	ND	10.0	9.54	ug/L	95	4.3	SW846 8260B
Chlorobenzene	ND	10.0	8.99	ug/L	90		SW846 8260B
	ND	10.0	8.75	ug/L	88	2.7	SW846 8260B
Chloroform	ND	10.0	8.74	ug/L	87		SW846 8260B
	ND	10.0	8.75	ug/L	87	0.04	SW846 8260B
1,3-Dichlorobenzene	0.25	10.0	9.05	ug/L	88		SW846 8260B
	0.25	10.0	9.12	ug/L	89	0.77	SW846 8260B
1,1-Dichloroethane	ND	10.0	7.85	ug/L	79		SW846 8260B
	ND	10.0	7.60	ug/L	76 a	3.2	SW846 8260B
1,1-Dichloroethene	ND	10.0	9.30	ug/L	93		SW846 8260B
	ND	10.0	9.51	ug/L	95	2.2	SW846 8260B
trans-1,2-Dichloroethene	ND	10.0	9.45	ug/L	94		SW846 8260B
	ND	10.0	9.41	ug/L	94	0.36	SW846 8260B
1,2-Dichloropropane	ND	10.0	8.02	ug/L	80		SW846 8260B
	ND	10.0	7.71	ug/L	77	3.9	SW846 8260B
Ethylbenzene	ND	10.0	9.20	ug/L	92		SW846 8260B
	ND	10.0	8.79	ug/L	88	4.6	SW846 8260B
Methylene chloride	ND	10.0	8.86	ug/L	89		SW846 8260B
	ND	10.0	8.77	ug/L	88	0.98	SW846 8260B
Tetrachloroethene	ND	10.0	8.96	ug/L	90		SW846 8260B
	ND	10.0	8.99	ug/L	90	0.27	SW846 8260B
Toluene	ND	10.0	7.69	ug/L	77		SW846 8260B
	ND	10.0	7.32	ug/L	73	4.9	SW846 8260B
1,1,1-Trichloroethane	ND	10.0	8.71	ug/L	87		SW846 8260B
	ND	10.0	8.79	ug/L	88	0.88	SW846 8260B
Trichloroethene	ND	10.0	11.5	ug/L	115		SW846 8260B
	ND	10.0	11.6	ug/L	116	1.1	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	114	(79 - 119)
	111	(79 - 119)
1,2-Dichloroethane-d4	88	(65 - 126)
	84	(65 - 126)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: D7K150223 **Work Order #...:** KCA321AC-MS **Matrix.....:** WG
MS Lot-Sample #: D7K150223-007 KCA321AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	86	(75 - 115)
	84	(75 - 115)
Toluene-d8	96	(78 - 118)
	93	(78 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Chain of Custody Record

1,1 X6
11/15/07
IR1

STL Severn Trent Laboratories, Inc.

39

4124 (0807)

Client	Project Manager	Date	Chain of Custody Number
ENSR (formerly RETEC)	Bjorn Selvig / Jenny Phillips	11/14/07	404490
Address 2709 Research Blvd., Suite 106	**Telephone Number (Area Code)/Fax Number** 970-493-3700	**Lab Number** —	**Page** 1 of 1
City Fort Collins / **State** CO / **Zip Code** 80524	**Site Contact** —	**Lab Contact** Kae Yoder	
Project Name and Location (State) Maverik Country Stores, Kirtland, NM	**Carrier/Waybill Number** —		
Contract/Purchase Order/Quote No. ?			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: VOCs (8260)	Special Instructions/ Conditions of Receipt
MW-9-111307	11/13/07	1410		X						3			X	
MW-10-111407	11/14/07	0940		X						3			X	
MW-16-111307	11/13/07	1503		X						3			X	
MW-17-111407	11/14/07	1050		X						3			X	
MW-18-111407	11/14/07	1140		X						3			X	
MW-19-111407	11/14/07	1013		X						3			X	
MW-20-111307	11/13/07	1610		X						3			X	
MW-20-ms/msD-111307	11/13/07	1610		X						3			X	
MW-21-111307	11/13/07	1700		X						3			X	
MW-22-111407	11/14/07	1120		X						3			X	
DUP-111307	11/13/07	—		X						3			X	
Tripblanks-111407	11/14/07	—		X						2			X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other routine

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	11/14/07	1300	1. Received By FedEx	11/14/07	1300
2. Relinquished By			2. Received By	11/15/07	0900
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Test America

TestAmerica Denver

Sample Receiving Checklist

Lot #: D7K150223 Date/Time Received: 11/15/07

Company Name & Sampling Site: ENSR

PM to Complete This Section:	*Yes*	*No*		*Yes*	*No*
Residual chlorine check required:	o	✓	Quarantined :	o	✓

Quote #: 108961-B

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): _____ _____ _____ _____ _____ _____ _____ _____

Temperatures (°C): 1.1 _____ _____ _____ _____ _____ _____ _____

N/A	*Yes*	*No*		*Initials*
o	✓	o	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	_____
	✓	o	2. Chain of custody present? If no, document on CUR.	
	o	✓	3. Bottles broken and/or are leaking? If yes, document on CUR.	
	o	✓	4. Multiphasic samples obvious? If yes, document on CUR.	
	✓	o	5. Proper container & preservatives used? (ref. Attachment D of SOP# DEN-QA-0003) If no, document on CUR.	
✓	o	o	6. pH of all samples checked and meet requirements? If no, document on CUR.	
	✓	o	7. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DEN-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	✓	o	8. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
o	✓	o	9. Were VOA samples without headspace? If no, document on CUR.	
o	✓	o	10. Were VOA vials preserved? Preservative ~~o~~HCl o4±2°C oSodium Thiosulfate o Ascorbic Acid	
	o	✓	11. Did samples require preservation with sodium thiosulfate?	
✓	o	o	12. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
✓	o	o	13. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
✓	o	o	14. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	o	✓	15. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	o	✓	16. Are analyses with short holding times requested?	
	o	✓	17. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D7K150223

Login Checks:

Initials CP

N/A	*Yes*	*No*		
	✓	o	18.	Sufficient volume provided for all analysis requested? (ref Attachment D of SOP# DEN-QA-0003) If no, document on CUR, and contact PM before proceeding.
o	✓	o	19.	Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
	✓	o	20.	Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?
o	✓	o	21.	Were special log in instructions read and followed?
✓	o	o	22.	Were AFCEE metals logged for refrigerated storage?
	✓	o	23.	Were tests logged checked against the COC? Which samples were confirmed? all
✓	o	o	24.	Was a Rush form completed for quick TAT?
✓	o	o	25.	Was a Short Hold form completed for any short holds?
	o	✓	26.	Were special archiving instructions indicated in the General Comments? If so, what were they?

Labeling and Storage Checks:

Initials MB

✓	o	o	28.	Was the subcontract COC signed and sent with samples to bottle prep?
	✓	o	29.	Were sample labels double-checked by a second person?
✓	o	o	30.	Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
	✓	o	31.	Did the sample ID, Date, and Time from label match what was logged?
✓	o	o	32.	Were stickers for special archiving instructions affixed to each box and to the ICOC? See #27
✓	o	o	33.	Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

Prepared for:
Maverik Country Stores

Organic Data Verification Report
Maverik Country Stores
Groundwater with Water QC Samples
November 2007

Prepared for:
Bjorn Selvig
Project Manager

Prepared by:
Leslie Hill
Quality Assurance Chemist

February 4, 2008
Document No.: 12501-001-210

ENSR | AECOM

Overview

The samples analyzed for the Maverik Country Stores Groundwater sampling event in November 2007 are listed in the Table of Samples Analyzed (page 2). Data verification was performed on ten groundwater samples and one trip blank sample.

The samples were analyzed by TestAmerica of Arvada, CO. The verified analysis was: Volatile Organics by SW846 Method 8260B.

The Analytical Data Verification Checklist is presented as pages 4-8. Data were evaluated based on verification criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-07-003, July 2007 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999, as they applied to the reported methodology. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1988, upheld in DRAFT 1993.

The following data components were reviewed during the data validation procedure:

Submitted Deliverables
Case Narratives
Chain-of-Custody form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method blank results
Trip blank results
LCS/LCSD (blank spike) results
MS/MSD (matrix spike) results
Field and laboratory duplicate results
Organic surrogate recoveries
Electronic data deliverables (EDDs)

Data Verification Qualifiers Assigned During this Review

J – Estimated concentration.

U – Evaluated to be undetected at the reported concentration; result is considered to be a false positive.

Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).

Overall Data Assessment

Precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable, based on the data submitted. The data are suitable for their intended use with the qualifications noted.

Table of Samples Analyzed
Maverik Country Stores
Groundwater with Water QC Samples
TestAmerica, Arvada, CO
Report D7K150223
November 2007 Sampling

Matrix	Sample ID	Parent Sample	Sample Date and Time	
Groundwater	MW-9-111307		11/13/2007	2:10 PM
Groundwater	MW-10-111407		11/14/2007	9:40 AM
Groundwater	MW-16-111307		11/13/2007	3:03 PM
Groundwater	MW-17-111407		11/14/2007	10:50 AM
Groundwater	MW-18-111407		11/14/2007	11:40 AM
Groundwater	MW-19-111407		11/14/2007	10:13 AM
Groundwater	MW-20-111307		11/13/2007	4:10 PM
Groundwater	MW-21-1113-7		11/13/2007	5:00 PM
Groundwater	MW-22-111407		11/14/2007	11:20 AM
Groundwater	DUP-111307	MW-20-111307	11/13/2007	
Water QC	TRIPBLANKS-111407		11/14/2007	

Table of Qualified Analytical Results
Maverik Country Stores
Groundwater with Water QC Samples
TestAmerica, Arvada, CO
Report D7K150223
November 2007 Sampling

Sample ID	Method	Analyte	Concentration		Qualifier	Reason
DUP-111307	SW8260B	1,3-Dichlorobenzene	0.23	ug/l	J	BRL
MW-10-111407	SW8260B	Acetone	10	ug/l	U	TB/BRL/Orig Result 4.8
MW-16-111307	SW8260B	1,3-Dichlorobenzene	0.29	ug/l	J	BRL
	SW8260B	Acetone	10	ug/l	U	TB/BRL/Orig Result 2.5
MW-17-111407	SW8260B	1,2,4-Trimethylbenzene	35	ug/l	J	SS
	SW8260B	1,3,5-Trimethylbenzene	9.2	ug/l	J	SS
	SW8260B	4-Isopropyltoluene	1.2	ug/l	J	BRL/SS
	SW8260B	Benzene	22	ug/l	J	SS
	SW8260B	Ethylbenzene	2.9	ug/l	J	BRL/SS
	SW8260B	Isopropylbenzene	1.2	ug/l	J	BRL/SS
	SW8260B	m-Xylene & p-Xylene	28	ug/l	J	SS
	SW8260B	Naphthalene	2.8	ug/l	J	BRL/SS
	SW8260B	n-Propylbenzene	1.8	ug/l	J	BRL/SS
	SW8260B	o-Xylene	3.1	ug/l	J	BRL/SS
	SW8260B	sec-Butylbenzene	2.4	ug/l	J	BRL/SS
	SW8260B	Xylenes (total)	31	ug/l	J	SS
MW-18-111407	SW8260B	1,3,5-Trimethylbenzene	0.16	ug/l	J	BRL
	SW8260B	2-Butanone (MEK)	2.7	ug/l	J	BRL
	SW8260B	4-Isopropyltoluene	0.87	ug/l	J	BRL
	SW8260B	Benzene	0.27	ug/l	J	BRL
	SW8260B	Ethylbenzene	0.41	ug/l	J	BRL
	SW8260B	Naphthalene	0.24	ug/l	J	BRL
	SW8260B	n-Propylbenzene	0.67	ug/l	J	BRL
	SW8260B	tert-Butylbenzene	0.31	ug/l	J	BRL
	SW8260B	Xylenes (total)	0.21	ug/l	J	BRL
MW-19-111407	SW8260B	Acetone	10	ug/l	U	TB/BRL/Orig Result 7.5
MW-20-111307	SW8260B	1,2-Dichloroethane	0.21	ug/l	J	BRL
	SW8260B	1,3-Dichlorobenzene	0.25	ug/l	J	BRL
MW-21-111307	SW8260B	1,3-Dichlorobenzene	0.22	ug/l	J	BRL
MW-22-111407	SW8260B	1,3-Dichlorobenzene	0.21	ug/l	J	BRL
	SW8260B	4-Isopropyltoluene	0.37	ug/l	J	BRL
	SW8260B	Naphthalene	0.67	ug/l	J	BRL
	SW8260B	o-Xylene	0.81	ug/l	J	BRL
	SW8260B	Toluene	0.41	ug/l	J	BRL
MW-9-111307	SW8260B	1,2,4-Trimethylbenzene	0.22	ug/l	J	BRL
	SW8260B	1,2-Dichloroethane	0.17	ug/l	J	BRL
	SW8260B	1,3-Dichlorobenzene	0.30	ug/l	J	BRL
	SW8260B	Acetone	10	ug/l	U	TB/BRL/Orig Result 4.3
	SW8260B	Naphthalene	0.25	ug/l	J	BRL
TRIPBLANKS-111407	SW8260B	Acetone	2.5	ug/l	J	BRL

J – Estimated concentration.
U – Evaluated to be undetected at the reported concentration; result is considered to be a false positive.

BRL – Below the reporting limit.
SS – Surrogate standard outside limits.
TB – Trip blank contamination.

ANALYTICAL DATA VERIFICATION CHECKLIST

Project Name: Maverik Country Stores	Laboratory: TestAmerica, Arvada, CO
Project Reference:	Sample Matrix: Groundwater with Water QC
Project Number: 12501-001-210	Sample Start Date: 11/13/2007
Verified By/Date Verified: Leslie Hill 02/04/2009	Sample End Date: 11/14/2007
Samples Analyzed: Refer to the Table of Samples Analyzed (page 2).	
Parameter Verified: Volatile Organics by SW846 Method 8260B.	
Laboratory Project ID: D7K150223	

PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT

Precision:	X	Acceptable		Unacceptable	LH	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision was determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of both field and laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD QC limits were set at 0-30% for water samples. Laboratory RPD limits referenced EPA published QC limits. No data require qualification based on field and laboratory duplicate RPDs, and overall field and laboratory precision is acceptable. Precision measurements are reviewed in items 17, 20, and 21.						
Accuracy:	X	Acceptable		Unacceptable	LH	Initials
Comments: Field accuracy, a measure of the sampling bias, was determined by reviewing trip blank results for evidence of sample contamination stemming from sample transport. Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and organic system monitoring compounds (surrogate) percent recoveries (%Rs). LCS %Rs, which demonstrated the overall performance of the analysis, were compared to EPA published QC limits. MS/MSD %Rs, which provided information on sample matrix interferences, were compared to EPA published QC limits or laboratory control charted limits. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to EPA published QC limits. Although some data require qualification based on surrogate %Rs or trip blank contamination, overall field and laboratory accuracy is acceptable. Accuracy measurements are reviewed in items 12, 14, 15, and 16.						
Method Compliance:	X	Acceptable		Unacceptable	LH	Initials
Comments: Method compliance was determined by evaluating sample integrity, holding times, and laboratory blanks against method specified requirements, while applying EPA data validation guidelines. Although some data require qualification based on analytes detected below the reporting limit, overall method compliance is acceptable based on the supplied data. Method compliance measurements are reviewed in items 4, 8, 11, 13, 18, 19, 20, and 22.						
Completeness:	X	Acceptable		Unacceptable	LH	Initials
Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Completeness goals are set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods and detection limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). All of the data received from the laboratory are useable with qualification. Completeness of the data is calculated to be 100% and is acceptable.						

ANALYTICAL DATA VERIFICATION CHECKLIST

VERIFICATION CRITERIA CHECK						
Data validation flags used in this review: J – estimated concentration U – evaluated to be undetected at the reported concentration; result is considered to be a false positive The following comments requiring qualification are in bold type. The other comments are of interest, but qualification of the samples was not necessary. Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						
1. Did the laboratory identify any non-conformances related to the analytical results?	**X**	Yes		No	LH	Initials
Comments: 8260B: Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, sample MW-17-111407 had to be analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required. Surrogate dibromofluoromethane was recovered outside the QC control limits in sample MW-17-111407 due to obvious matrix interference; therefore, corrective action is deemed unnecessary. Low levels of 1,2-dichlorobenzene are present in the method blank. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary. MS/MSD were performed on sample MW-20-111307, as requested. The MS/MSD exhibited a percent recovery outside the QC control limits for 1,1-dichloroethane. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary. Data qualification, if any, related to the laboratory observations are discussed in the following sections.						
2. Were sample Chain-of-Custody forms complete?	**X**	Yes		No	LH	Initials
Comments: COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	**X**	Yes		No	LH	Initials
Comments: All requested analyses as documented on original COC records were completed by the laboratory.						
4. Were samples received in good condition and at the appropriate temperature?	**X**	Yes		No	LH	Initials
Comments: Samples were received on ice, intact, and in good condition with a cooler temperature outside the 4°C ± 2°C acceptance range at 1.1°C, as noted on the COC and Sample Receiving Checklist. The cooler temperature was judged acceptable as samples were not frozen and the sample containers were intact.						
5. Were the requested analytical methods in compliance with WP/QAPP, permit, or COC?	**X**	Yes		No	LH	Initials
Comments: Reported methods and target analyte lists were in compliance with COC records.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	**X**	Yes		No	LH	Initials
Comments: Reported detection limits are achievable by the quoted methods.						

ANALYTICAL DATA VERIFICATION CHECKLIST

7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	X	Yes		No	LH	Initials
Comments: Only the requested target analytes were reported.						
8. Were sample holding times met?	X	Yes		No	LH	Initials
Comments: Extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	X	Yes		No	LH	Initials
Comments: Correct concentration units were reported.						
10. Were the reporting requirements for flagged data met?	X	Yes		No	LH	Initials
Comments: Data validation qualifiers override assigned laboratory flags.						
11. Were laboratory blank samples free of target analyte contamination?		Yes	X	No	LH	Initials
Comments: All laboratory blanks were free of target analyte contamination, with the following exception. 8260B: The method blank analyzed on 11/23/2007 reported 1,2-dichlorobenzene at 0.19 µg/L. As 1,2-dichlorobenzene was not detected in any of the associated samples, no qualification of data is required.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	X	Yes		No	LH	Initials
Comments: Target analytes were not detected in the trip blank sample, with the following exception. **8260B: The trip blank sample, TRIPBLANKS-111407 reported acetone at 2.5 µg/L. As acetone was detected below the reporting limit and at less than 10 times the blank amount in associated samples MW-10-111407, MW-16-111307, MW-19-111407, and MW-9-111307, it was qualified as U at the reporting limits to indicate that it was not detected at the reporting limit and has been determined to be a false positive due to contamination during sample transport.** Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						
13. Were instrument calibrations within method control limits?	NA	Yes	NA	No	LH	Initials
Comments: Not applicable for this level of data verification. Instrument calibration data were not supplied in analytical laboratory reports and were not reviewed as a part of this data verification.						
14. Were surrogate recoveries within control limits?		Yes	X	No	LH	Initials
Comments: Surrogate %Rs in organic analyses were within laboratory control-charted QC limits for all project samples and associated QC samples, with the following exception. **8260B: In sample MW-17-111407 the recovery of the surrogate dibromofluoromethane was outside laboratory QC limits of 79-119% at 122%. Detected analytes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, benzene, ethylbenzene, isopropylbenzene, m-xylene & p-xylene, naphthalene, n-propylbenzene, o-xylene, sec-butylbenzene, and total xylenes were qualified as J to indicate estimated concentrations due to high bias.** Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						

ANALYTICAL DATA VERIFICATION CHECKLIST

15. Were laboratory control sample recoveries within control limits?	X	Yes		No	LH	Initials
Comments: LCS (blank spike) recoveries were within data validation or laboratory control-charted QC limits for all target analytes.						
16. Were matrix spike recoveries within control limits?		Yes	X	No	LH	Initials
Comments: Project specific MS and MSD recoveries for target analytes were within data validation QC limits, with the exception noted below. MS and MSD spike recoveries for non-project samples were not considered since matrix similarity to project samples could not be guaranteed. 8260B: In sample MW-20-111307 MSD the percent recovery of 1,1-dichloroethane was outside laboratory QC limits of 77-117% at 76%. As the MS percent recovery and the MS/MSD RPD were within QC limits, professional judgment determined that no qualification of data was necessary.						
17. Were RPDs within control limits?	X	Yes		No	LH	Initials
Comments: Laboratory RPDs for target analytes in project-specific MS/MSD samples were within data validation control limits.						
18. Were organic system performance criteria met?	NA	Yes	NA	No	LH	Initials
Comments: Not applicable for this level of data verification. System performance data were not supplied in analytical laboratory reports and were not reviewed as a part of this data verification.						
19. Were internal standards within method criteria for GC/MS sample analyses?	NA	Yes	NA	No	LH	Initials
Comments: Not applicable for this level of data verification. Internal standard data were not supplied in analytical laboratory reports and were not reviewed as a part of this data verification.						
20. Were inorganic system performance criteria met?	NA	Yes	NA	No	LH	Initials
Comments: There were no inorganic analytes requested for this sample set.						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	X	Yes		No	LH	Initials
Duplicate Sample No.	DUP-111307	Primary Sample No.	MW-20-111307			

Comments: The RPDs for the duplicates were within the 0-30% data verification QC limits for water or RPDs were not applicable due to results that were ± the detection limit, or were undetected in both samples. Field duplicate and native sample concentrations that were both undetected are not reflected in the table below since RPDs are not applicable.

The following RPDs were calculated:

Method	Analyte	DUP-111307	MW-20-111307	RPD	Qualifier	Duplicate RL	Sample RL	Units
SW8260B	1,2-Dichloroethane	ND	0.21	+/- RL		1.0	1.0	ug/l
SW8260B	1,3-Dichlorobenzene	0.23	0.25	8		1.0	1.0	ug/l

22. Were qualitative criteria for organic target analyte identification met?	X	Yes		No	LH	Initials
Comments: Trained laboratory personnel reviewed retention times and chromatography in accordance with the laboratory's internal QA/QC program. No data outliers were noted.						

ANALYTICAL DATA VERIFICATION CHECKLIST

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	X	Yes		No	LH	Initials
Comments: There were no discrepancies between the EDD concentrations and reporting limits and the hardcopy data reports.						
24. General Comments: Data were evaluated based on verification criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-07-003, July 2007 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999, as they applied to the reported methodology. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1988, upheld in DRAFT 1993. Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 3).						