AECOM Environment
1001 W. Seneca Street, Ste 204, Ithaca, NY 14850-3342
T **607.277.5716** F **607.277.9057** www.aecom.com

October 21, 2009

Mr. Charles Burke
National Fuel Gas Distribution Corporation
Building 8
365 Mineral Springs Road
Buffalo, NY 14210

Subject: Groundwater and Surface Water Monitoring Results
August 2009
Mineral Springs Road MGP Site

Dear Mr. Burke,

This report provides the results of a groundwater and surface water sampling event completed by AECOM Environment (AECOM) on August 25 and 26, 2009, at the Mineral Springs Road former manufactured gas plant (MGP) site in West Seneca (Buffalo), New York.

The work at the Mineral Springs site is being conducted under a New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Agreement (number B9-0538-98-08) as described in the Remedial Design, dated February 10, 1999, and the Final Engineering Report, Volume II – Operations and Maintenance Plan, dated May 2002.

Summary

A total of 13 groundwater samples and two surface water samples were collected and analyzed. A total of 15 depth-to-water measurements, including the surface water measurement at SW-01, were taken. Sampling locations are shown on the attached Figure. Analytical results are summarized in the attached table.

Concentrations of benzene, ethylbenzene, toluene, and xylene (BTEX) and/or polycyclic aromatic hydrocarbon (PAH) compounds were above NYSDEC standard or guidance values in three of the seven onsite groundwater samples.

Total cyanide concentrations exceeded the NYSDEC groundwater standard of 200 µg/L in eight of the nine groundwater samples analyzed. Free cyanide was detected in three of the nine groundwater samples.

No BTEX or PAH compounds were detected in surface water sample SW-01. No BTEX compounds were detected above the NYSDEC surface water guidance or standard values at SW-02. Two PAH compounds were detected slightly over the NYSDEC guidance values at SW-02. No total or free cyanide concentrations exceeded the NYSDEC surface water standards.

Groundwater elevations

Depth-to-water measurements were taken at 14 monitoring wells and at surface water reference point SW-01. The measurements were used to construct the groundwater contours shown in the attached figure. Groundwater elevations in the monitoring wells averaged 0.74 ft lower during the August 2009 sampling event then in the April 2009 sampling event. Groundwater elevations in the monitoring wells averaged a difference of plus or minus 0.28 feet during the August 2009 and September 2008 sampling events.
The groundwater flow direction remained similar between the August 2009 and April 2009 sampling events.

At the time of the sampling, groundwater flowed onto the site from the east-southeast, and then flowed to the west-northwest towards Calais Street and Mineral Springs Road. Onsite groundwater usually appears to also discharge to the Class D Stream, which in turn discharges to the Calais Street storm sewer and the municipal wastewater treatment system.

The elevation of the reference point, top of PVC, at monitoring well MW-20 was changed in August of 2009. This was the result of repairs that took place to the PVC riser pipe at MW-20.

Sampling and analysis

A total of 13 monitoring wells were purged and sampled by an AECOM geologist. Two surface water samples were taken from the class D stream along the southern boundary of the site. Sampling locations are shown on the attached figure.

Test America (formerly Severn Trent Laboratories [STL]) of Pittsburgh, PA, performed the analyses of the groundwater samples for hydrocarbon compounds of concern. Test America is currently certified to perform the requested analyses under the NYSDOH Environmental Laboratory Approval Program. The samples were analyzed for manufactured gas plant (MGP) indicators using the following methods:

BTEX	Method SW846 8260B
PAHs	Method SW846 8270C

Samples were also sent to Clarkson University of Potsdam, NY (Clarkson) for cyanide analysis using the following methods:

Cyanide (free)	Method ASTM D4282-95
Cyanide (total)	Method APHA 4500-CN^- C

All sampling and analyses were conducted according to AECOM's Standard Operating Procedures as provided in the project Quality Assurance Plan (QAP) of June 11, 1999. Additionally, the cyanide samples were protected from light during collection to prevent the dissociation of metal-cyanide compounds, which would artificially elevate free cyanide results. The cyanide samples were also treated with lead carbonate and filtered to remove potential sulfide interferences.

Sample bottles were provided by the laboratories. Sample bottles for BTEX, total cyanide and free cyanide contained preservatives that adjust the sample pH to ensure the sample's integrity. All samples were within the acceptable pH range.

Analytical results and conclusions

The results of the laboratory analyses are summarized in the attached table. The laboratory reports and the chain-of-custody forms are attached as well. The locations, sampling objectives, and a discussion of the analytical results for each of the specific areas of interest at the site are provided in the following sections.

Upgradient site perimeter

Well MW-17 is located in the southeast corner of the site and monitors upgradient groundwater quality. The results of the analyses indicate that no BTEX or PAH compounds were detected. Total cyanide was detected at a concentration of 148 µg/L, below the NYSDEC groundwater standard of 200 µg/L. Free cyanide was not detected at MW-17. The concentration of total cyanide is down from 279 µg/L in April 2009, and is consistent with the September 2008 result of 144 µg/L.

Downgradient site perimeter

Wells MW-20 and MW-21 are located downgradient of the western boundary of the site on Calais Street. Wells MW-13, MW-14, MW-22 and MW-23 are located just inside the northern property boundary near Mineral Springs Road. These six "sentinel" wells monitor groundwater quality downgradient of the site. The groundwater samples from these six wells were analyzed for total and free cyanide. Monitoring well MW-13 and MW-23 were also sampled for BTEX and PAHs this sampling round.

No BTEX or PAH were identified above method detection limits in monitoring wells MW-13 or MW-23 with the exception of benzene. Benzene was present at MW-13 at a concentration of 1 ug/L.

All six of the wells were found to contain total cyanide in concentrations above the NYSDEC groundwater standard of 200 µg/L. Concentrations ranged from 268 µg/L at MW-20 to 690 µg/L at MW-22. Free cyanide was detected in one of the six sentinel wells, MW-22 above method detection limits. Free cyanide was detected in five of the six sentinel wells during the September 2008 sampling round. These concentrations are generally consistent with previous results with the following exceptions:

- The total cyanide concentration in MW-13 increased from 27 µg/L in April 2009 to 327 µg/L in August 2009. The concentration of total cyanide seems to vary with the seasonal fluctuation in groundwater elevations. The total cyanide concentration was 467 µg/L during the September 2008 sampling event.

- Free cyanide was detected above method detection limits in one of the six sentinel wells sampled, MW-22, whereas in April, 2009, it was detected in two wells, MW-14 and MW-22.

On-site purifier residuals impacted areas

Wells MW-12 and MW-16 monitor groundwater quality at locations of known subsurface deposits of purifier box residuals. These deposits were remediated by capping. Samples from these two wells were analyzed for total and free cyanide.

Total cyanide concentrations were 449 µg/L at MW-12 and 504 µg/L at MW-16. Free cyanide was detected in both of these monitoring wells. These concentrations are consistent with past two sampling rounds.

On-site hydrocarbon NAPL impacted areas

Wells MW-7, MW-10, MW-11A, and MW-19 monitor on-site groundwater quality downgradient of subsurface soil impacted with hydrocarbon non-aqueous phase liquid (NAPL). Samples from these wells were analyzed for BTEX and PAHs.

BTEX and PAHs were not detected at MW-10. Consistent with previous results, BTEX and PAH compounds were detected above the NYSDEC groundwater standards in MW-7 and MW-19. BTEX compounds were detected above the NYSDEC groundwater standards in MW-11A, however, no PAH compounds were detected at concentrations above groundwater standards at MW-11A.

Surface water

Two surface water samples were taken from the Class D stream along the southern border of the site. No BTEX or PAH compounds were detected in the surface water sample SW-01. No BTEX compounds were detected above the NYSDEC surface water guidance or standard values at SW-02. Toluene was detected at SW-02 at a concentration of 0.23 ug/L, with a J qualifier, below the NYSDEC standard of 6,000 ug/L.

Two PAH compounds were detected slightly over the NYSDEC guidance values at SW-02. Both values were estimated concentrations with a J qualifier. Six other PAH compounds were identified at SW-02 below the NYSDEC guidance and standard values. All were estimated values with J qualifiers.

Total cyanide was detected in both surface water samples but did not exceed the NYSDEC standard value. Free cyanide was not detected at SW-01, but was detected at SW-02 at a concentration of 3.0 ug/L, below the NYSDEC standard of 22 ug/L.

QA/QC samples

Quality control samples were collected during the sampling event to meet the requirements of the project QAP.

An equipment blank (EB) was prepared using organic free water supplied by the laboratory that was run through peristaltic pump tubing. Toluene was detected in the EB at a concentration of 0.17 ug/L with a J qualifier. The toluene concentration in the EB is a very small estimated value, it is unlikely that any cross contamination from the equipment to the analytical samples occurred due to all the tubing is dedicated in the monitoring wells.

A trip blank (TB) sample was prepared by the laboratory and was stored in the sample cooler throughout the sampling event and during transportation back to the laboratory. The trip blank was analyzed for BTEX. No BTEX compounds were detected in trip blank.

Duplicate samples were collected from MW-7 and MW-17. The duplicate sample from MW-7 was submitted for analysis of BTEX and PAHs. The duplicate sample from MW-17 was submitted for analysis for total and free cyanide. The duplicate results were within the acceptable range for BTEX, PAHs, and cyanide samples.

DNAPL recovery test well (RTW-1)

During this groundwater sampling event, the Recovery System at RTW-1 was operated to assess whether dense non-aqueous phase liquid (DNAPL) had accumulated since the April 2009 sampling event. Approximately a ½ gallon of water was pumped out. The water contained approximately 10-15% NAPL blebs.

If you have any questions or comments, please do not hesitate to call me at (607) 277-5716.

Sincerely yours,

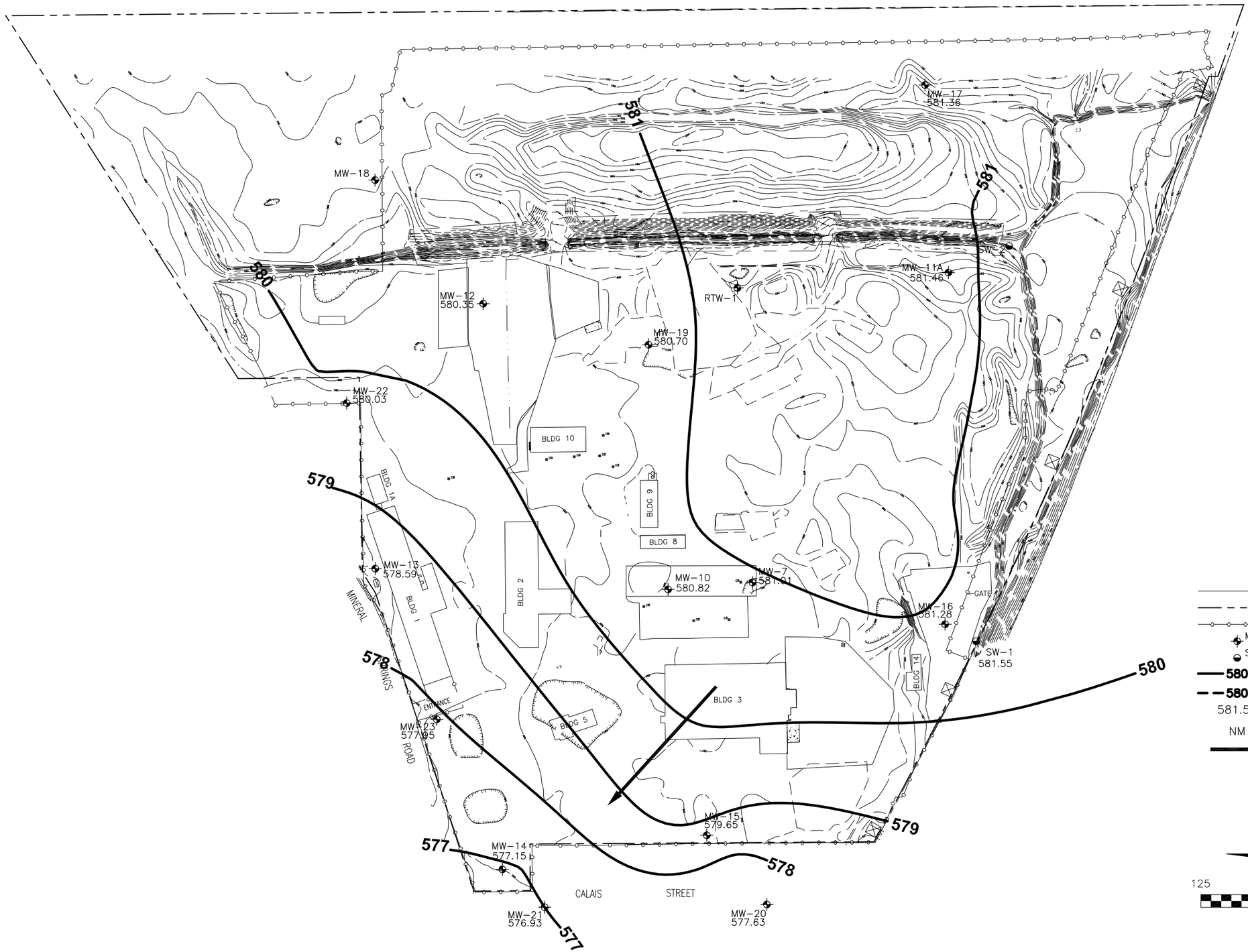
Jesse Lloyd
Geologist
Project Manager

Thomas P. Clark, P.E
Project Engineer

Encl: Groundwater Contour Map (Figure 1)
Laboratory Results Summary (Table 1)
Laboratory Reports (Attachment 1)

cc: T. Alexander - NFG
R. Kennedy - Hodgson, Russ LLP
D. Szymanski - NYSDEC
C. O'Connor - NYSDOH (w. figure/table only)
G. Bailey - NYSDEC (w. figure/table only)
G. Litwin - NYSDOH (w. figure/table only)
File: 04870-026

Figure 1
Groundwater Contour Map



AECOM

NATIONAL FUEL GAS MINERAL SPRINGS ROAD MGP SITE 04870-026-300			**GROUNDWATER CONTOURS AUGUST 2009**
DATE: 06/03/09	DRWN: DLS/PGH		**FIGURE 1**

File: F:\04870_MINERAL SPRINGS\FIGURE 1_GW CONTOURS_AUGUST 2009.dwg Layout: ANSI_B1-LJ User: SilvermanD Plotted: Sep 25, 2009 - 6:37am Xref's:

Table 1
Laboratory Results Summary

Groundwater and Surface Water Monitoring Results
Mineral Springs Road MGP Site
August, 2009

PARAMETER	GROUNDWATER															SURFACE WATER			QA / QC			
Sample ID :	MW-07	MW-10	MW-11A	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-19	MW-20	MW-21	MW-22	MW-23	*Groundwater*	SW-01	SW-02	*Class D Stream*	TB	EB	MW-07 Dup	MW-17 Dup
Sample Date :	08/25/09	08/25/09	08/25/09	08/25/09	08/26/09	08/26/09	08/26/09	08/26/09	08/26/09	08/25/09	08/26/09	08/26/09	08/25/09	08/26/09	*Standard* (1)	08/25/09	08/25/09	*Standard* (1)	08/25/09	08/26/09	08/25/09	08/26/09
BTEX (µg/L)																						
Benzene	850	nd	200	---	1	---	---	---	nd	3700	---	---	---	nd	**1**	nd	nd	**10**	nd	nd	730	---
Toluene	250	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**5**	nd	0.23 J	**6000**	nd	0.17 J	200	---
Ethylbenzene	1000	nd	80	---	nd	---	---	---	nd	170 J	---	---	---	nd	**5**	nd	nd	**150** *	nd	nd	810	---
Xylene (sum of isomers)	700	nd	28 J	---	nd	---	---	---	nd	450 J	---	---	---	nd	**5 (each)**	nd	nd	**590** *	nd	nd	540	---
BTEX total	2800	nd	308	---	1	---	---	---	nd	4320	---	---	---	---	**---**	nd	0.23	**---**	nd	0.17	2280	---
PAHs (µg/L)																						
Naphthalene	1400	nd	9.3 J	---	nd	---	---	---	nd	3600	---	---	---	nd	**10** *	nd	nd	**110** *	---	nd	1300	---
Acenaphthylene	nd	nd	4.6 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**NL** *	nd	nd	**NL**	---	nd	0.65 J	---
Acenaphthene	36 J	nd	6.1 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**20** *	nd	nd	**48** *	---	nd	39	---
Fluorene	6.2 J	nd	1.6 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**50** *	nd	nd	**4.8** *	---	nd	7.1 J	---
Phenanthrene	4.6 J	nd	2.8 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**50** *	nd	0.72 J	**45** *	---	nd	5.2 J	---
Anthracene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**50** *	nd	nd	**35** *	---	nd	nd	---
Fluoranthene	nd	nd	0.52 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**50** *	nd	1.2 J	**NL**	---	nd	nd	---
Pyrene	nd	nd	0.75 J	---	nd	---	---	---	nd	nd	---	---	---	nd	**50** *	nd	1.1 J	**42** *	---	nd	0.14 J	---
Benzo(a)anthracene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**0.002** *	nd	0.49 J	**0.23** *	---	nd	nd	---
Chrysene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**0.002** *	nd	0.85 J	**NL**	---	nd	nd	---
Benzo(b)fluoranthene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**0.002** *	nd	1.2 J	**NL**	---	nd	nd	---
Benzo(k)fluoranthene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**0.002** *	nd	nd	**NL**	---	nd	nd	---
Benzo(a)pyrene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**NL**	nd	0.63 J	**0.0012** *	---	nd	nd	---
Indeno(1,2,3-cd)pyrene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**0.002** *	nd	nd	**NL**	---	nd	nd	---
Dibenz(a,h)anthracene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**NL**	nd	nd	**NL**	---	nd	nd	---
Benzo(g,h,i)perylene	nd	nd	nd	---	nd	---	---	---	nd	nd	---	---	---	nd	**NL**	nd	0.55 J	**NL**	---	nd	nd	---
2-Methylnaphthalene	84 J	nd	nd	---	nd	---	---	---	nd	6.7 J	---	---	---	nd	**NL**	nd	nd	**NL**	---	nd	95	---
PAHs total	1530.8	nd	25.67	---	nd	---	---	---	nd	3606.7	---	---	---	---	**---**	nd	6.74	**---**	---	nd	1447.09	---
CYANIDE (µg/L)																						
Cyanide, total	---	---		449	327	422	---	504	148	---	268	441	690	320	**200**	23	141	**9000**	---	nd	---	150
Cyanide, free	---	---		4.7	nd	nd	---	4.4	nd	---	nd	nd	3.4	nd	**NL**	nd	3.0	**22**	---	nd	---	nd
Water Elevation (feet)	581.01	580.82	581.46	580.35	578.59	577.15	579.65	581.28	581.36	580.70	577.87	576.93	580.03	577.95	**NL**	580.83	---	**NL**	---	---	---	---

Notes:

NL Not listed
nd Not detected above method detection limit
--- Not analyzed
J, E Indicates laboratory estimated value

(1) NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1)
* Groundwater or Surface Water Guidance Value (no Standard value listed).
Concentrations exceeding NYSDEC regulatory standard or guidance value.

Attachment 1

Laboratory Reports

BTEX and PAH Results

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 04870-026-200

AECOM, Mineral Springs

Lot #: C9H270140

Helen Jones

AECOM, Inc

TESTAMERICA LABORATORIES, INC.

Dave Dunlap
Project Manager

September 4, 2009

NELAC REPORTING:

At the time of analysis the laboratory was in compliance with the current NELAC standards and held accreditation for all analyses performed unless noted by a qualifier. The labs accreditation numbers are listed below. The format and contents of the report meets all applicable NELAC standards except as noted in the narrative and shall not be reproduced except in full, without the written approval of the laboratory. The table below presents a summary of the certifications held by TestAmerica Pittsburgh. Our primary accreditation authority for the Non-potable water and Solid & Hazardous waste programs is Pennsylvania DEP. A more detailed parameter list is available upon request. Please ask your project manager for this information when required.

Certifying State/Program	Certificate #	Program Types	TestAmerica
NFESC	NA	NAVY	X
US Dept of Agriculture	(#P330-07-00101)	Foreign Soil Import Permit	X
Arkansas	(#88-0690)	WW	X
		HW	X
California – NELAC	04224CA	WW	X
		HW	X
Connecticut	(#PH-0688)	WW	X
		HW	X
Florida – NELAC	(#E871008-04)	WW	X
		HW	X
Illinois – NELAC	(#002064)	WW	X
		HW	X
Kansas – NELAC	(#E-10350)	WW	X
		HW	X
Louisiana – NELAC	(#04041)	WW	X
		HW	X
New Hampshire – NELAC	(#203008)	WW	X
		--	--
New Jersey – NELAC	(PA-005)	WW	X
		HW	X
New York – NELAC	(#11182)	WW	X
		HW	X
North Carolina	(#434)	WW	X
		HW	X
Pennsylvania - NELAC	(#02-00416)	WW	X
		HW	X
South Carolina	(#89014002)	WW	X
		HW	X
Utah – NELAC	(STLP)	WW	X
		HW	X
West Virginia	(#142)	WW	X
		HW	X
Wisconsin	998027800	WW	X
		HW	X

The codes utilized for program types are described below:

HW Hazardous Waste certification
WW Non-potable Water and/or Wastewater certification
X Laboratory has some form of certification under the specific program. Many states certify laboratories for specific parameters or tests within a category. The information in the table indicates the lab is certified in a general category of testing. Please contact the laboratory if parameter specific certification information is required.

Updated: 2/5/2009 C:\Documents and Settings\derubeisn\My Documents\NELAC NARRATIVE Pttsburgh.doc

CASE NARRATIVE

AECOM –Mineral Springs

Lot # C9H270140

Sample Receiving:
Samples were received at TestAmerica's Pittsburgh laboratory on August 27, 2009. The coolers were received within the proper temperature range.

If project specific QC was not required for samples contained in this report, when batch QC was completed on these samples, anomalous results will be discussed below.

GC/MS Volatiles:
Due to the concentration of target compounds detected, several samples were analyzed at a dilution.

GC/MS Semivolatiles:
Due to the concentration of target compounds detected, several samples were analyzed at a dilution.

The surrogate of sample MW-19 was diluted out.

Anchorage
2000 W. International Airport Road
Suite A10
Anchorage, AK 99502
phone 907.563.9200 fax 907.563.9210

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jesse Lloyd	Site Contact: Jesse Lloyd	Date: 08/26/09	COC No:
AECOM Environment	Tel/Fax: 6072775716/6072779057	Lab Contact:	Carrier: Fed Ex	1 of 2 COCs
1001 W. Seneca Street	Analysis Turnaround Time			Job No.
Ithaca, NY 14850	Calendar (C) or Work Days (W) _____			
(607) 277-5716 Phone	TAT if different from Below _____			SDG No.
(607) 277-9057 FAX	☐ 2 weeks			
Project Name: Mineral Springs	☐ 1 week			
Site: Mineral Springs	☐ 2 days			
P O # Helen Jones	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	BTEX 8260	PAHs 8270	Sample Specific Notes:
MW-7	8/25/2009	12:00	Grab	Aq	5		X	X	
MW-10	8/25/09	11:40	Grab	Aq	5		X	X	
MW-11A	8/25/09	12:45	Grab	Aq	5		X	X	
MW-13	8/26/09	11:05	Grab	Aq	5		X	X	
MW-17	8/26/09	13:40	Grab	Aq	5		X	X	
MW-19	8/25/09	14:15	Grab	Aq	5		X	X	
MW-23	8/26/09	8:25	Grab	Aq	5		X	X	
SW-1	8/25/09	16:30	Grab	Aq	5		X	X	
SW-2	8/25/09	13:00	Grab	Aq	5		X	X	
MW-107	8/25/09	11:30	Grab	Aq	5		X	X	
~~MW-117~~	~~8/26/09~~	~~14:00~~	~~Grab~~	~~Aq~~	~~5~~		~~X~~	~~X~~	as per Tammy Ruby was not collected DKD 8/27/09
Equipment Blank	8/26/09	11:30	Grab	Aq	~~5~~ 4		X	X	report Tammy Ruby only 1 liter sent for PAH analysis DKD 8/27/09

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

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

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

Special Instructions/QC Requirements & Comments:

Relinquished by: Tamara Ruby	Company: AECOM	Date/Time: 8/26/09 1630	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: Patricia R Daniel	Company: TA-Pitt	Date/Time: 8/27/09 1000
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

C9H270140

C9H270140

Anchorage
2000 W. International Airport Road
Suite A10
Anchorage, AK 99502
phone 907.563.9200 fax 907.563.9210

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jesse Lloyd	Site Contact: Jesse Lloyd	Date: 08/26/09	COC No:
AECOM Environment	Tel/Fax: 6072775716/6072779057	Lab Contact:	Carrier: Fed Ex	2 of 2 COCs
1001 W. Seneca Street	Analysis Turnaround Time			Job No.
Ithaca, NY 14850	Calendar (C) or Work Days (W) _____			
(607) 277-5716 Phone	TAT if different from Below _____			SDG No.
(607) 277-9057 FAX	☐ 2 weeks			
Project Name: Mineral Springs	☐ 1 week			
Site: Mineral Springs	☐ 2 days			
P O # Helen Jones	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	BTEX 8260	PAHs 8270	Sample Specific Notes:
Trip Blank	8/25/2009	NA	Grab	Aq	2		X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

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

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

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jamare Reby	AECOM	8/26/09 1630			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Patrick R. Jarvis	TA-Pitt	8/27/09 1000
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

METHODS SUMMARY

C9H270140

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3520C
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.

SAMPLE SUMMARY

C9H270140

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJVQ8	001	MW-7	08/25/09	12:00
LJVRA	002	MW-10	08/25/09	11:40
LJVRD	003	MW-11A	08/25/09	12:45
LJVRF	004	MW-13	08/25/09	11:05
LJVRK	005	MW-17	08/25/09	13:40
LJVRM	006	MW-19	08/25/09	14:15
LJVRN	007	MW-23	08/26/09	08:25
LJVRP	008	SW-1	08/25/09	16:30
LJVRQ	009	SW-2	08/25/09	13:00
LJVRR	010	MW-107	08/25/09	11:30
LJVRT	011	EQUIPMENT BLANK	08/25/09	11:30
LJVRV	012	TRIP BLANK	08/25/09	

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.

AECOM, Inc

Client Sample ID: MW-7

GC/MS Volatiles

Lot-Sample #...: C9H270140-001 **Work Order #...:** LJVQ81AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9245099
Prep Date.....: 09/02/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9245176
Dilution Factor: 50 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**850**	**50**	**ug/L**
Ethylbenzene	**1000**	**50**	**ug/L**
Toluene	**250**	**50**	**ug/L**
Xylenes (total)	**700**	**150**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	92	(71 - 118)
1,2-Dichloroethane-d4	90	(64 - 135)
4-Bromofluorobenzene	88	(70 - 118)
Dibromofluoromethane	94	(70 - 128)

AECOM, Inc

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...: C9H270140-002 **Work Order #...:** LJVRA1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(71 - 118)
1,2-Dichloroethane-d4	89	(64 - 135)
4-Bromofluorobenzene	86	(70 - 118)
Dibromofluoromethane	93	(70 - 128)

AECOM, Inc

Client Sample ID: MW-11A

GC/MS Volatiles

Lot-Sample #...: C9H270140-003 **Work Order #...:** LJVRD1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 10 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**200**	**10**	**ug/L**
Ethylbenzene	**80**	**10**	**ug/L**
Toluene	ND	10	ug/L
Xylenes (total)	**28 J**	**30**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	91	(71 - 118)
1,2-Dichloroethane-d4	89	(64 - 135)
4-Bromofluorobenzene	88	(70 - 118)
Dibromofluoromethane	95	(70 - 128)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-13

GC/MS Volatiles

Lot-Sample #...: C9H270140-004 **Work Order #...:** LJVRF1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**1.0**	**1.0**	**ug/L**
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(71 - 118)
1,2-Dichloroethane-d4	89	(64 - 135)
4-Bromofluorobenzene	89	(70 - 118)
Dibromofluoromethane	97	(70 - 128)

AECOM, Inc

Client Sample ID: MW-17

GC/MS Volatiles

Lot-Sample #...: C9H270140-005 **Work Order #...:** LJVRK1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(71 - 118)
1,2-Dichloroethane-d4	95	(64 - 135)
4-Bromofluorobenzene	91	(70 - 118)
Dibromofluoromethane	102	(70 - 128)

AECOM, Inc

Client Sample ID: MW-19

GC/MS Volatiles

Lot-Sample #...: C9H270140-006 **Work Order #...:** LJVRM1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 200 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**3700**	**200**	**ug/L**
Ethylbenzene	**170 J**	**200**	**ug/L**
Toluene	ND	200	ug/L
Xylenes (total)	**450 J**	**600**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(71 - 118)
1,2-Dichloroethane-d4	86	(64 - 135)
4-Bromofluorobenzene	88	(70 - 118)
Dibromofluoromethane	93	(70 - 128)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-23

GC/MS Volatiles

Lot-Sample #...: C9H270140-007 **Work Order #...:** LJVRN1AA **Matrix.....:** WATER
Date Sampled...: 08/26/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	100	(71 - 118)
1,2-Dichloroethane-d4	90	(64 - 135)
4-Bromofluorobenzene	90	(70 - 118)
Dibromofluoromethane	100	(70 - 128)

AECOM, Inc

Client Sample ID: SW-1

GC/MS Volatiles

Lot-Sample #...: C9H270140-008 **Work Order #...:** LJVRP1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	92	(71 - 118)
1,2-Dichloroethane-d4	90	(64 - 135)
4-Bromofluorobenzene	95	(70 - 118)
Dibromofluoromethane	97	(70 - 128)

AECOM, Inc

Client Sample ID: SW-2

GC/MS Volatiles

Lot-Sample #...: C9H270140-009 **Work Order #...:** LJVRQ1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	**0.23 J**	**1.0**	**ug/L**
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(71 - 118)
1,2-Dichloroethane-d4	89	(64 - 135)
4-Bromofluorobenzene	89	(70 - 118)
Dibromofluoromethane	105	(70 - 128)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-107

GC/MS Volatiles

Lot-Sample #...: C9H270140-010 **Work Order #...:** LJVRR1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 50 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**730**	**50**	**ug/L**
Ethylbenzene	**810**	**50**	**ug/L**
Toluene	**200**	**50**	**ug/L**
Xylenes (total)	**540**	**150**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	97	(71 - 118)
1,2-Dichloroethane-d4	93	(64 - 135)
4-Bromofluorobenzene	80	(70 - 118)
Dibromofluoromethane	100	(70 - 128)

AECOM, Inc

Client Sample ID: EQUIPMENT BLANK

GC/MS Volatiles

Lot-Sample #...: C9H270140-011 **Work Order #...:** LJVRT1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	**0.17 J**	**1.0**	**ug/L**
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(71 - 118)
1,2-Dichloroethane-d4	87	(64 - 135)
4-Bromofluorobenzene	87	(70 - 118)
Dibromofluoromethane	98	(70 - 128)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: C9H270140-012 **Work Order #...:** LJVRV1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	3.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(71 - 118)
1,2-Dichloroethane-d4	88	(64 - 135)
4-Bromofluorobenzene	87	(70 - 118)
Dibromofluoromethane	94	(70 - 128)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ4111AA **Matrix.....:** WATER
MB Lot-Sample #: C9I010000-234
Prep Date.....: 09/01/09
Analysis Date..: 09/01/09 **Prep Batch #...:** 9244234
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	91	(71 - 118)
1,2-Dichloroethane-d4	97	(64 - 135)
4-Bromofluorobenzene	84	(70 - 118)
Dibromofluoromethane	111	(70 - 128)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ62D1AA **Matrix.....:** WATER
MB Lot-Sample #: C9I020000-176
Prep Date.....: 09/02/09
Analysis Date..: 09/02/09 **Prep Batch #...:** 9245176
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	95	(71 - 118)
1,2-Dichloroethane-d4	88	(64 - 135)
4-Bromofluorobenzene	85	(70 - 118)
Dibromofluoromethane	102	(70 - 128)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ4111AC **Matrix.....:** WATER
LCS Lot-Sample#: C9I010000-234
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**88**	**(80 - 120)**	**SW846 8260B**
Toluene	**97**	**(80 - 123)**	**SW846 8260B**
1,1-Dichloroethene	**94**	**(65 - 136)**	**SW846 8260B**
Chlorobenzene	**92**	**(80 - 120)**	**SW846 8260B**
Trichloroethene	**93**	**(73 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(71 - 118)
1,2-Dichloroethane-d4	85	(64 - 135)
4-Bromofluorobenzene	79	(70 - 118)
Dibromofluoromethane	96	(70 - 128)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ62D1AC **Matrix.....:** WATER
LCS Lot-Sample#: C9I020000-176
Prep Date.....: 09/02/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9245176
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**84**	**(80 - 120)**	**SW846 8260B**
Toluene	**84**	**(80 - 123)**	**SW846 8260B**
1,1-Dichloroethene	**89**	**(65 - 136)**	**SW846 8260B**
Chlorobenzene	**85**	**(80 - 120)**	**SW846 8260B**
Trichloroethene	**85**	**(73 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	90	(71 - 118)
1,2-Dichloroethane-d4	91	(64 - 135)
4-Bromofluorobenzene	82	(70 - 118)
Dibromofluoromethane	93	(70 - 128)

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 #...: C9H270140 **Work Order #...:** LJ04L1A0-MS **Matrix.....:** WATER
MS Lot-Sample #: C9H280216-001 LJ04L1A1-MSD
Date Sampled...: 08/27/09 **Date Received..:** 08/28/09 **MS Run #.....:** 9244136
Prep Date.....: 09/01/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9244234
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**113**	**(80 - 120)**			**SW846 8260B**
	91	**(80 - 120)**	**22**	**(0-32)**	**SW846 8260B**
Toluene	**115**	**(80 - 123)**			**SW846 8260B**
	97	**(80 - 123)**	**17**	**(0-35)**	**SW846 8260B**
1,1-Dichloroethene	**118**	**(65 - 136)**			**SW846 8260B**
	92	**(65 - 136)**	**25**	**(0-35)**	**SW846 8260B**
Chlorobenzene	**116**	**(80 - 120)**			**SW846 8260B**
	94	**(80 - 120)**	**21**	**(0-29)**	**SW846 8260B**
Trichloroethene	**117**	**(73 - 120)**			**SW846 8260B**
	92	**(73 - 120)**	**24**	**(0-35)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(71 - 118)
	101	(71 - 118)
1,2-Dichloroethane-d4	96	(64 - 135)
	92	(64 - 135)
4-Bromofluorobenzene	86	(70 - 118)
	84	(70 - 118)
Dibromofluoromethane	107	(70 - 128)
	99	(70 - 128)

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 #...: C9H270140 **Work Order #...:** LJ16D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: C9H280350-003 LJ16D1AD-MSD
Date Sampled...: 08/25/09 **Date Received..:** 08/28/09 **MS Run #.....:** 9245099
Prep Date.....: 09/02/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9245176
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**100**	**(80 - 120)**			**SW846 8260B**
	100	**(80 - 120)**	**0.0**	**(0-32)**	**SW846 8260B**
Toluene	**108**	**(80 - 123)**			**SW846 8260B**
	109	**(80 - 123)**	**0.83**	**(0-35)**	**SW846 8260B**
1,1-Dichloroethene	**106**	**(65 - 136)**			**SW846 8260B**
	108	**(65 - 136)**	**2.5**	**(0-35)**	**SW846 8260B**
Chlorobenzene	**108**	**(80 - 120)**			**SW846 8260B**
	106	**(80 - 120)**	**1.5**	**(0-29)**	**SW846 8260B**
Trichloroethene	**106**	**(73 - 120)**			**SW846 8260B**
	108	**(73 - 120)**	**1.7**	**(0-35)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(71 - 118)
	101	(71 - 118)
1,2-Dichloroethane-d4	88	(64 - 135)
	93	(64 - 135)
4-Bromofluorobenzene	87	(70 - 118)
	83	(70 - 118)
Dibromofluoromethane	99	(70 - 128)
	101	(70 - 128)

NOTE(S):

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

Bold print denotes control parameters

AECOM, Inc

Client Sample ID: MW-7

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-001 **Work Order #...:** LJVQ81AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 9.8 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	**36 J**	**98**	**ug/L**
Acenaphthylene	ND	98	ug/L
Anthracene	ND	98	ug/L
Benzo(a)anthracene	ND	98	ug/L
Benzo(b)fluoranthene	ND	98	ug/L
Benzo(k)fluoranthene	ND	98	ug/L
Benzo(ghi)perylene	ND	98	ug/L
Benzo(a)pyrene	ND	98	ug/L
Chrysene	ND	98	ug/L
Fluoranthene	ND	98	ug/L
Fluorene	**6.2 J**	**98**	**ug/L**
Indeno(1,2,3-cd)pyrene	ND	98	ug/L
2-Methylnaphthalene	**84 J**	**98**	**ug/L**
Naphthalene	**1400**	**98**	**ug/L**
Phenanthrene	**4.6 J**	**98**	**ug/L**
Pyrene	ND	98	ug/L
Dibenzo(a,h)anthracene	ND	98	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	88	(33 - 122)
2-Fluorobiphenyl	67	(35 - 108)
2-Fluorophenol	63	(26 - 100)
Nitrobenzene-d5	62	(37 - 104)
Phenol-d5	61	(30 - 102)
Terphenyl-d14	49	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-10

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-002 **Work Order #...:** LJVRA1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9243063
Dilution Factor: 0.98 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	9.8	ug/L
Acenaphthylene	ND	9.8	ug/L
Anthracene	ND	9.8	ug/L
Benzo(a)anthracene	ND	9.8	ug/L
Benzo(b)fluoranthene	ND	9.8	ug/L
Benzo(k)fluoranthene	ND	9.8	ug/L
Benzo(ghi)perylene	ND	9.8	ug/L
Benzo(a)pyrene	ND	9.8	ug/L
Chrysene	ND	9.8	ug/L
Fluoranthene	ND	9.8	ug/L
Fluorene	ND	9.8	ug/L
Indeno(1,2,3-cd)pyrene	ND	9.8	ug/L
2-Methylnaphthalene	ND	9.8	ug/L
Naphthalene	ND	9.8	ug/L
Phenanthrene	ND	9.8	ug/L
Pyrene	ND	9.8	ug/L
Dibenzo(a,h)anthracene	ND	9.8	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	92	(33 - 122)
2-Fluorobiphenyl	67	(35 - 108)
2-Fluorophenol	65	(26 - 100)
Nitrobenzene-d5	64	(37 - 104)
Phenol-d5	71	(30 - 102)
Terphenyl-d14	70	(25 - 130)

AECOM, Inc

Client Sample ID: MW-11A

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-003 **Work Order #...:** LJVRD1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 0.99 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	**6.1 J**	**9.9**	**ug/L**
Acenaphthylene	**4.6 J**	**9.9**	**ug/L**
Anthracene	ND	9.9	ug/L
Benzo(a)anthracene	ND	9.9	ug/L
Benzo(b)fluoranthene	ND	9.9	ug/L
Benzo(k)fluoranthene	ND	9.9	ug/L
Benzo(ghi)perylene	ND	9.9	ug/L
Benzo(a)pyrene	ND	9.9	ug/L
Chrysene	ND	9.9	ug/L
Fluoranthene	**0.52 J**	**9.9**	**ug/L**
Fluorene	**1.6 J**	**9.9**	**ug/L**
Indeno(1,2,3-cd)pyrene	ND	9.9	ug/L
2-Methylnaphthalene	ND	9.9	ug/L
Naphthalene	**9.3 J**	**9.9**	**ug/L**
Phenanthrene	**2.8 J**	**9.9**	**ug/L**
Pyrene	**0.75 J**	**9.9**	**ug/L**
Dibenzo(a,h)anthracene	ND	9.9	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	92	(33 - 122)
2-Fluorobiphenyl	67	(35 - 108)
2-Fluorophenol	65	(26 - 100)
Nitrobenzene-d5	64	(37 - 104)
Phenol-d5	64	(30 - 102)
Terphenyl-d14	50	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-13

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-004 **Work Order #...:** LJVRF1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 0.95 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	9.5	ug/L
Acenaphthylene	ND	9.5	ug/L
Anthracene	ND	9.5	ug/L
Benzo(a)anthracene	ND	9.5	ug/L
Benzo(b)fluoranthene	ND	9.5	ug/L
Benzo(k)fluoranthene	ND	9.5	ug/L
Benzo(ghi)perylene	ND	9.5	ug/L
Benzo(a)pyrene	ND	9.5	ug/L
Chrysene	ND	9.5	ug/L
Fluoranthene	ND	9.5	ug/L
Fluorene	ND	9.5	ug/L
Indeno(1,2,3-cd)pyrene	ND	9.5	ug/L
2-Methylnaphthalene	ND	9.5	ug/L
Naphthalene	ND	9.5	ug/L
Phenanthrene	ND	9.5	ug/L
Pyrene	ND	9.5	ug/L
Dibenzo(a,h)anthracene	ND	9.5	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	92	(33 - 122)
2-Fluorobiphenyl	69	(35 - 108)
2-Fluorophenol	67	(26 - 100)
Nitrobenzene-d5	64	(37 - 104)
Phenol-d5	65	(30 - 102)
Terphenyl-d14	70	(25 - 130)

AECOM, Inc

Client Sample ID: MW-17

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-005 **Work Order #...:** LJVRK1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 0.94 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	9.4	ug/L
Acenaphthylene	ND	9.4	ug/L
Anthracene	ND	9.4	ug/L
Benzo(a)anthracene	ND	9.4	ug/L
Benzo(b)fluoranthene	ND	9.4	ug/L
Benzo(k)fluoranthene	ND	9.4	ug/L
Benzo(ghi)perylene	ND	9.4	ug/L
Benzo(a)pyrene	ND	9.4	ug/L
Chrysene	ND	9.4	ug/L
Fluoranthene	ND	9.4	ug/L
Fluorene	ND	9.4	ug/L
Indeno(1,2,3-cd)pyrene	ND	9.4	ug/L
2-Methylnaphthalene	ND	9.4	ug/L
Naphthalene	ND	9.4	ug/L
Phenanthrene	ND	9.4	ug/L
Pyrene	ND	9.4	ug/L
Dibenzo(a,h)anthracene	ND	9.4	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	90	(33 - 122)
2-Fluorobiphenyl	71	(35 - 108)
2-Fluorophenol	67	(26 - 100)
Nitrobenzene-d5	65	(37 - 104)
Phenol-d5	63	(30 - 102)
Terphenyl-d14	43	(25 - 130)

AECOM, Inc

Client Sample ID: MW-19

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-006 **Work Order #...:** LJVRM1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 28.5 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	280	ug/L
Acenaphthylene	ND	280	ug/L
Anthracene	ND	280	ug/L
Benzo(a)anthracene	ND	280	ug/L
Benzo(b)fluoranthene	ND	280	ug/L
Benzo(k)fluoranthene	ND	280	ug/L
Benzo(ghi)perylene	ND	280	ug/L
Benzo(a)pyrene	ND	280	ug/L
Chrysene	ND	280	ug/L
Fluoranthene	ND	280	ug/L
Fluorene	ND	280	ug/L
Indeno(1,2,3-cd)pyrene	ND	280	ug/L
2-Methylnaphthalene	**6.7 J**	**280**	**ug/L**
Naphthalene	**3600**	**280**	**ug/L**
Phenanthrene	ND	280	ug/L
Pyrene	ND	280	ug/L
Dibenzo(a,h)anthracene	ND	280	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	NC,DIL	(33 - 122)
2-Fluorobiphenyl	NC,DIL	(35 - 108)
2-Fluorophenol	NC,DIL	(26 - 100)
Nitrobenzene-d5	NC,DIL	(37 - 104)
Phenol-d5	NC,DIL	(30 - 102)
Terphenyl-d14	NC,DIL	(25 - 130)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-23

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-007 **Work Order #...:** LJVRN1AC **Matrix.....:** WATER
Date Sampled...: 08/26/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 0.97 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	9.7	ug/L
Acenaphthylene	ND	9.7	ug/L
Anthracene	ND	9.7	ug/L
Benzo(a)anthracene	ND	9.7	ug/L
Benzo(b)fluoranthene	ND	9.7	ug/L
Benzo(k)fluoranthene	ND	9.7	ug/L
Benzo(ghi)perylene	ND	9.7	ug/L
Benzo(a)pyrene	ND	9.7	ug/L
Chrysene	ND	9.7	ug/L
Fluoranthene	ND	9.7	ug/L
Fluorene	ND	9.7	ug/L
Indeno(1,2,3-cd)pyrene	ND	9.7	ug/L
2-Methylnaphthalene	ND	9.7	ug/L
Naphthalene	ND	9.7	ug/L
Phenanthrene	ND	9.7	ug/L
Pyrene	ND	9.7	ug/L
Dibenzo(a,h)anthracene	ND	9.7	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	93	(33 - 122)
2-Fluorobiphenyl	73	(35 - 108)
2-Fluorophenol	70	(26 - 100)
Nitrobenzene-d5	66	(37 - 104)
Phenol-d5	68	(30 - 102)
Terphenyl-d14	81	(25 - 130)

AECOM, Inc

Client Sample ID: SW-1

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-008 **Work Order #...:** LJVRP1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 1.01 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Chrysene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Naphthalene	ND	10	ug/L
Phenanthrene	ND	10	ug/L
Pyrene	ND	10	ug/L
Dibenzo(a,h)anthracene	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	81	(33 - 122)
2-Fluorobiphenyl	67	(35 - 108)
2-Fluorophenol	64	(26 - 100)
Nitrobenzene-d5	62	(37 - 104)
Phenol-d5	62	(30 - 102)
Terphenyl-d14	50	(25 - 130)

AECOM, Inc

Client Sample ID: SW-2

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-009 **Work Order #...:** LJVRQ1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9243063
Dilution Factor: 1.06 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	11	ug/L
Acenaphthylene	ND	11	ug/L
Anthracene	ND	11	ug/L
Benzo(a)anthracene	**0.49 J**	**11**	**ug/L**
Benzo(b)fluoranthene	**1.2 J**	**11**	**ug/L**
Benzo(k)fluoranthene	ND	11	ug/L
Benzo(ghi)perylene	**0.55 J**	**11**	**ug/L**
Benzo(a)pyrene	**0.63 J**	**11**	**ug/L**
Chrysene	**0.85 J**	**11**	**ug/L**
Fluoranthene	**1.2 J**	**11**	**ug/L**
Fluorene	ND	11	ug/L
Indeno(1,2,3-cd)pyrene	ND	11	ug/L
2-Methylnaphthalene	ND	11	ug/L
Naphthalene	ND	11	ug/L
Phenanthrene	**0.72 J**	**11**	**ug/L**
Pyrene	**1.1 J**	**11**	**ug/L**
Dibenzo(a,h)anthracene	ND	11	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	75	(33 - 122)
2-Fluorobiphenyl	48	(35 - 108)
2-Fluorophenol	64	(26 - 100)
Nitrobenzene-d5	61	(37 - 104)
Phenol-d5	70	(30 - 102)
Terphenyl-d14	39	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: MW-107

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-010 **Work Order #...:** LJVRR1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9243063
Dilution Factor: 0.97 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	**39**	**9.7**	**ug/L**
Acenaphthylene	**0.65 J**	**9.7**	**ug/L**
Anthracene	ND	9.7	ug/L
Benzo(a)anthracene	ND	9.7	ug/L
Benzo(b)fluoranthene	ND	9.7	ug/L
Benzo(k)fluoranthene	ND	9.7	ug/L
Benzo(ghi)perylene	ND	9.7	ug/L
Benzo(a)pyrene	ND	9.7	ug/L
Chrysene	ND	9.7	ug/L
Fluoranthene	ND	9.7	ug/L
Fluorene	**7.1 J**	**9.7**	**ug/L**
Indeno(1,2,3-cd)pyrene	ND	9.7	ug/L
2-Methylnaphthalene	**95**	**9.7**	**ug/L**
Naphthalene	**510 E**	**9.7**	**ug/L**
Phenanthrene	**5.2 J**	**9.7**	**ug/L**
Pyrene	**0.14 J**	**9.7**	**ug/L**
Dibenzo(a,h)anthracene	ND	9.7	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	87	(33 - 122)
2-Fluorobiphenyl	61	(35 - 108)
2-Fluorophenol	59	(26 - 100)
Nitrobenzene-d5	59	(37 - 104)
Phenol-d5	63	(30 - 102)
Terphenyl-d14	56	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

AECOM, Inc

Client Sample ID: MW-107

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-010 **Work Order #...:** LJVRR2AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9243063
Dilution Factor: 9.7 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	**35 J**	**97**	**ug/L**
Acenaphthylene	ND	97	ug/L
Anthracene	ND	97	ug/L
Benzo(a)anthracene	ND	97	ug/L
Benzo(b)fluoranthene	ND	97	ug/L
Benzo(k)fluoranthene	ND	97	ug/L
Benzo(ghi)perylene	ND	97	ug/L
Benzo(a)pyrene	ND	97	ug/L
Chrysene	ND	97	ug/L
Fluoranthene	ND	97	ug/L
Fluorene	**6.4 J**	**97**	**ug/L**
Indeno(1,2,3-cd)pyrene	ND	97	ug/L
2-Methylnaphthalene	**82 J**	**97**	**ug/L**
Naphthalene	**1300**	**97**	**ug/L**
Phenanthrene	**4.9 J**	**97**	**ug/L**
Pyrene	ND	97	ug/L
Dibenzo(a,h)anthracene	ND	97	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	71	(33 - 122)
2-Fluorobiphenyl	54	(35 - 108)
2-Fluorophenol	54	(26 - 100)
Nitrobenzene-d5	52	(37 - 104)
Phenol-d5	55	(30 - 102)
Terphenyl-d14	48	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

AECOM, Inc

Client Sample ID: EQUIPMENT BLANK

GC/MS Semivolatiles

Lot-Sample #...: C9H270140-011 **Work Order #...:** LJVRT1AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/27/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/02/09
Prep Batch #...: 9243063
Dilution Factor: 0.96 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	9.6	ug/L
Acenaphthylene	ND	9.6	ug/L
Anthracene	ND	9.6	ug/L
Benzo(a)anthracene	ND	9.6	ug/L
Benzo(b)fluoranthene	ND	9.6	ug/L
Benzo(k)fluoranthene	ND	9.6	ug/L
Benzo(ghi)perylene	ND	9.6	ug/L
Benzo(a)pyrene	ND	9.6	ug/L
Chrysene	ND	9.6	ug/L
Fluoranthene	ND	9.6	ug/L
Fluorene	ND	9.6	ug/L
Indeno(1,2,3-cd)pyrene	ND	9.6	ug/L
2-Methylnaphthalene	ND	9.6	ug/L
Naphthalene	ND	9.6	ug/L
Phenanthrene	ND	9.6	ug/L
Pyrene	ND	9.6	ug/L
Dibenzo(a,h)anthracene	ND	9.6	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	81	(33 - 122)
2-Fluorobiphenyl	61	(35 - 108)
2-Fluorophenol	59	(26 - 100)
Nitrobenzene-d5	58	(37 - 104)
Phenol-d5	64	(30 - 102)
Terphenyl-d14	83	(25 - 130)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ3C71AA **Matrix.....:** WATER
MB Lot-Sample #: C9H310000-063

Prep Date.....: 08/31/09
Analysis Date..: 09/01/09 **Prep Batch #...:** 9243063
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Dibenzo(a,h)anthracene	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	90	(33 - 122)
2-Fluorobiphenyl	69	(35 - 108)
2-Fluorophenol	74	(26 - 100)
Nitrobenzene-d5	67	(37 - 104)
Phenol-d5	74	(30 - 102)
Terphenyl-d14	82	(25 - 130)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ3C71AC **Matrix.....:** WATER
LCS Lot-Sample#: C9H310000-063
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2,4-Trichloro-benzene	**71**	**(36 - 97)**	**SW846 8270C**
1,4-Dichlorobenzene	**68**	**(32 - 94)**	**SW846 8270C**
2,4-Dinitrotoluene	**74**	**(41 - 117)**	**SW846 8270C**
Acenaphthene	**71**	**(39 - 106)**	**SW846 8270C**
2-Chlorophenol	**68**	**(34 - 100)**	**SW846 8270C**
4-Chloro-3-methylphenol	**64**	**(40 - 107)**	**SW846 8270C**
4-Nitrophenol	**56**	**(29 - 120)**	**SW846 8270C**
N-Nitrosodi-n-propyl-amine	**65**	**(37 - 106)**	**SW846 8270C**
Pentachlorophenol	**76**	**(10 - 118)**	**SW846 8270C**
Phenol	**66**	**(35 - 98)**	**SW846 8270C**
Butyl benzyl phthalate	**67**	**(34 - 110)**	**SW846 8270C**
4-Bromophenyl phenyl ether	**74**	**(38 - 108)**	**SW846 8270C**
4-Methylphenol	**68**	**(34 - 104)**	**SW846 8270C**
Hexachloroethane	**70**	**(27 - 94)**	**SW846 8270C**
Naphthalene	**71**	**(35 - 98)**	**SW846 8270C**
Pyrene	**71**	**(36 - 115)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	92	(33 - 122)
2-Fluorobiphenyl	75	(35 - 108)
2-Fluorophenol	77	(26 - 100)
Nitrobenzene-d5	70	(37 - 104)
Phenol-d5	73	(30 - 102)
Terphenyl-d14	79	(25 - 130)

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 Semivolatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ16D1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: C9H280350-003 LJ16D1AG-MSD
Date Sampled...: 08/25/09 **Date Received..:** 08/28/09 **MS Run #.....:** 9243037
Prep Date.....: 08/31/09 **Analysis Date..:** 09/01/09
Prep Batch #...: 9243063
Dilution Factor: 1.05

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,2,4-Trichloro-benzene	**59**	**(36 - 97)**			**SW846 8270C**
	60	**(36 - 97)**	**0.83**	**(0-32)**	**SW846 8270C**
1,4-Dichlorobenzene	**51**	**(32 - 94)**			**SW846 8270C**
	51	**(32 - 94)**	**0.21**	**(0-33)**	**SW846 8270C**
2,4-Dinitrotoluene	**76**	**(41 - 117)**			**SW846 8270C**
	80	**(41 - 117)**	**4.2**	**(0-32)**	**SW846 8270C**
Acenaphthene	**69**	**(39 - 106)**			**SW846 8270C**
	71	**(39 - 106)**	**1.0**	**(0-32)**	**SW846 8270C**
2-Chlorophenol	**58**	**(34 - 100)**			**SW846 8270C**
	59	**(34 - 100)**	**0.24**	**(0-31)**	**SW846 8270C**
4-Chloro-3-methylphenol	**62**	**(40 - 107)**			**SW846 8270C**
	66	**(40 - 107)**	**5.2**	**(0-32)**	**SW846 8270C**
4-Nitrophenol	**55**	**(29 - 120)**			**SW846 8270C**
	59	**(29 - 120)**	**5.7**	**(0-39)**	**SW846 8270C**
N-Nitrosodi-n-propyl-amine	**61**	**(37 - 106)**			**SW846 8270C**
	61	**(37 - 106)**	**1.6**	**(0-36)**	**SW846 8270C**
Pentachlorophenol	**76**	**(10 - 118)**			**SW846 8270C**
	80	**(10 - 118)**	**4.3**	**(0-49)**	**SW846 8270C**
Phenol	**54**	**(35 - 98)**			**SW846 8270C**
	56	**(35 - 98)**	**2.9**	**(0-35)**	**SW846 8270C**
Butyl benzyl phthalate	**64**	**(34 - 110)**			**SW846 8270C**
	63	**(34 - 110)**	**3.0**	**(0-35)**	**SW846 8270C**
4-Bromophenyl phenyl ether	**71**	**(38 - 108)**			**SW846 8270C**
	74	**(38 - 108)**	**2.8**	**(0-40)**	**SW846 8270C**
4-Methylphenol	**61**	**(34 - 104)**			**SW846 8270C**
	62	**(34 - 104)**	**2.0**	**(0-34)**	**SW846 8270C**
Hexachloroethane	**48**	**(27 - 94)**			**SW846 8270C**
	48	**(27 - 94)**	**0.0**	**(0-43)**	**SW846 8270C**
Naphthalene	**62**	**(35 - 98)**			**SW846 8270C**
	62	**(35 - 98)**	**0.0**	**(0-39)**	**SW846 8270C**
Pyrene	**65**	**(36 - 115)**			**SW846 8270C**
	63	**(36 - 115)**	**4.3**	**(0-38)**	**SW846 8270C**

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: C9H270140 **Work Order #...:** LJ16D1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: C9H280350-003 LJ16D1AG-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	91	(33 - 122)
	91	(33 - 122)
2-Fluorobiphenyl	62	(35 - 108)
	63	(35 - 108)
2-Fluorophenol	59	(26 - 100)
	59	(26 - 100)
Nitrobenzene-d5	59	(37 - 104)
	59	(37 - 104)
Phenol-d5	58	(30 - 102)
	60	(30 - 102)
Terphenyl-d14	58	(25 - 130)
	55	(25 - 130)

NOTE(S):

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

Bold print denotes control parameters

Cyanide Results

September 11, 2009

Helen Jones
AECOM, Inc.
1001 W. Seneca St. Suite 204
Ithaca, NY 14850

Re: Groundwater samples analyzed for cyanide by Eleanor Hopke, Clarkson University

Dear Ms. Jones:

Thirteen groundwater samples from the Mineral Springs site were received from AECOM on September 1, 2009. They were shipped via FedEx for Priority Overnight Delivery on August 31, 2009. The Temperature Blank vial was 5 degrees C. on arrival. The samples were in brown plastic bottles, two 250-ml bottles for each sample. Requested analyses were Total Cyanide and Free Cyanide by Microdiffusion.

The duplicate sample containers were composited before analysis. pH's of the samples were all greater than pH 13. Laboratory matrix spikes and matrix spike duplicates, check standards, continuing calibration verification standards, and reagent blanks were analyzed along with the samples.

For Free Cyanide, the sample pH's were reduced by adding sulfuric acid so that the buffer would adequately reduce the pH during the analysis. I have had success with doing this. Samples with positive cyanide concentrations were treated with lead carbonate, filtered and reanalyzed to check for sulfide interference. For MW-12 and MW-16, the Pb-treated results were lower, indicating interference, and these results are reported. This was not the case with SW-02 and MW-22, and the untreated results are reported for these.

The following methods were used to analyze the samples:

Total Cyanide – APHA *Standard Methods* 4500-CN^- C. "Total Cyanide after Distillation" and APHA *Standard Methods* 4500-CN^- E., "Colorimetric Method."

Free Cyanide - *ASTM* D4282-95. "Standard Test Method for Determination of Free Cyanide in Water and Wastewater by Microdiffusion." using lower concentration standards to better bracket the sample concentrations, and substituting APHA 4500-CN^- D. to standardize the stock cyanide standard.

For Diffusible and Total Cyanide, the stock cyanide standard was calibrated using APHA *Standard Methods*, 4500-CN^- D., "Titrimetric Method."

The analytical results follow:

Groundwater Samples
TOTAL CYANIDE and FREE CYANIDE
Results in µg CN^{--} /L (ppb)

ID	Free Cyanide	Total Cyanide
MW-12	4.7	449
MW-13	<2.3	327
MW-14	<2.3	422
MW-16	4.4	504
MW-17	<2.3	148
MW-20	<2.3	268
MW-21	<2.3	441
MW-22	3.4	690
MW-23	<2.3	320
MW-117	<2.3	150
SW-01	<2.3	23
SW-02	3.0	141
EQB	<2.3	<3
Matrix Spike and Matrix Spike Duplicate	92.4%, 104.4% (MW-22)	106.1%, 104.9% (MW-14)
Reagent Blank	<2.3	<3
Check Std	108.3%	100.0%

Analytical Dates

ID	Sampling Date	Arrival Date	Free CN Analysis Date	Total CN Analysis Date
MW-12	8/25/09	9/1/09	9/5/09	9/2/09
MW-13	8/26/09	9/1/09	9/3/09	9/2/09
MW-14	8/26/09	9/1/09	9/3/09	9/2/09
MW-16	8/26/09	9/1/09	9/5/09	9/2/09
MW-17	8/26/09	9/1/09	9/3/09	9/2/09
MW-20	8/26/09	9/1/09	9/3/09	9/4/09
MW-21	8/26/09	9/1/09	9/3/09	9/4/09
MW-22	8/25/09	9/1/09	9/3/09	9/4/09
MW-23	8/26/09	9/1/09	9/3/09	9/4/09
MW-117	8/26/09	9/1/09	9/3/09	9/2/09
SW-01	8/25/09	9/1/09	9/3/09	9/1/09
SW-02	8/25/09	9/1/09	9/3/09	9/1/09
EQB	8/26/09	9/1/09	9/3/09	9/1/09

I will be very glad to answer any questions you might have about these results. Thank you very much for sending them to Clarkson for analysis.

Sincerely,

Eleanor Hopke
Research Technician
Clarkson University
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Potsdam, NY 13699

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