NAPL AND GROUNDWATER MONITORING REPORT FOR PERFORMANCE MONITORING OF ISS IRM FOR EAST STATION FORMER MGP SITE ROCHESTER, NEW YORK

OCTOBER 2008 THROUGH AUGUST 2009 MONITORING EVENTS

November 2009

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1.0 INTRODUCTION

This NAPL gauging and groundwater monitoring report has been prepared to summarize the findings of sampling events performed in October 2008, February 2009, May 2009 and August 2009 at the East Station former manufactured gas plant (MGP) site located in Rochester, New York (Figure 1). The activities were performed as proposed in the document titled Installation and Monitoring of Groundwater Wells for Water Quality and NAPL at the East Station Site following the Completion of the ISS-IRM submitted to the New York State Department of Environmental Conservation (NYSDEC) on September 4, 2008.

1.1 ISS IRM

In October 2003, RG&E submitted to NYSDEC the Draft IRM Work Plan for *In-Situ* Solidification/Stabilization (ISS) to Control NAPL Seeps at the Former East Station MGP Site, Rochester, New York (Ish Inc., October 2003). The ISS IRM consisted of four phases, with the fourth phase constituting implementation of the ISS IRM. The Phase IV ISS IRM field activities began at the site in November 2007 immediately after approval from NYSDEC and were completed in September 2008.

The Phase IV Interim Remedial Measure Completion Report (i.e., ISS IRM Completion Report) was submitted in March 2009 and approved by NYSDEC in September 2009. The ISS IRM Completion Report provides specific details pertaining to the ISS IRM implementation. In general, the ISS IRM consisted of the following major tasks:

1. Excavation and landfill disposal of 31,513 tons of cyanide-impacted material;
2. Installation of 667 ISS columns, which stabilized approximately 14,280 cubic yards of material;
3. Construction of a 970 linear foot slurry wall;
4. Construction of a 840 linear foot NAPL recovery trench containing 20 NAPL monitoring/recovery wells;
5. Associated spoils stabilization/solidification of material excavated to construct the slurry wall and NAPL collection trench (approximately 2,610 cubic yards); and
6. Installation of performance monitoring and NAPL recovery wells (described below).

The components of the ISS IRM work are identified on Figure 2.

1.2 Performance Monitoring Wells and Recovery Wells

Performance monitoring for the ISS IRM was required by NYSDEC. RG&E developed a plan which was summarized in a letter report submitted to NYSDEC on September 4, 2008. A total of ten monitoring wells and three additional NAPL monitoring/recovery wells were installed for performance monitoring purposes. Also included in the performance monitoring program for NAPL gauging are the 20 recovery wells that were installed as part of the NAPL collection trench. Table 1 lists the monitoring and recovery wells that are included in the performance monitoring program at the East Station site. Specific information pertaining to the installation activities was provided in the Summary of the Installation and Monitoring of Groundwater Wells for Water Quality and NAPL at the East Station Site following Completion of the ISS-IRM (Ish Inc., September 2008) and Phase IV Interim Remedial Measure Implementation Report (Ish Inc. March 2009). Table 2 provides a summary of the installation data for the monitoring and recovery wells. The locations of the wells are provided on Figure 4.

2.0 FIELD ACTIVITIES

Field activities performed during each of the four sampling events are summarized in Table 1. For the four events, NAPL gauging and water levels measurements were completed at the 33 recovery wells. In addition, groundwater samples were collected for water quality measurements during the October 2008 and the May 2009 sampling events as shown in Table 1. Methods for NAPL gauging and for groundwater levels measurement employed for the performance monitoring at the East Station are the same that have been used at the site during the various site investigations work over the years.

2.1 Groundwater Sampling

Groundwater samples were collected on October 14 and October 15, 2008 from 13 monitoring/recovery well locations and from seven locations on May 19, 2009 as shown in Table 1. The groundwater sampling was performed in accordance with either the Phase III RDI work plan or the original FSP and samples were analyzed for the parameters shown in Table 3 using the methods listed. A summary of each round of gauging data is presented in Table 4. Table 5 provides the final groundwater field measurements for each well and Appendix A provides the complete well purging data. Purged water was staged on-site in a 500-gallon poly tank for disposal by RG&E. Groundwater samples were shipped to Test America Laboratories, Inc. located in Shelton, Connecticut (October 2008) or Amherst, NY (May 2009) for laboratory analysis.

2.2 QA/QC Samples

As part of the chemical analyses performed for this groundwater monitoring program, Test America performed the quality assurance and quality control (QA/QC) procedures required for New York State ASP Category B deliverables packages. The Ish Inc. team performed a review of QA/QC data generated by Test America. This validation included a review of pertinent QA/QC data such as sample extraction and analysis, holding times, calibration, a review of laboratory blanks and QA/QC sample results, and a review of the analytical case narrative. A Data Usability Summary Report (DUSR) was prepared which includes a compliance chart, a list of samples included in each sample delivery group and recalculations of sample results if needed (Appendix B). Nonconforming QA/QC results were evaluated with respect to their implications for data reliability and usability, and data results were flagged accordingly on the results sheets. These qualifiers appear in the summary tables for this report.

In addition to the laboratory QC measures described above, field QC samples were collected and analyzed to monitor the field sampling procedures. The field samples collected included equipment rinsate blanks, field duplicates and trip blanks. Equipment rinsate blanks are used to monitor the effectiveness of field decontamination procedures where sampling equipment was cleaned and reused. Since the sampling used disposable equipment, dedicated tubing for each well, field rinsate blanks were not required, although one was collected. To verify the consistency of the sample collection procedures, field duplicates were collected. In addition, trip blanks were analyzed for VOCs to determine if samples were compromised during sample handling or shipment.

3.0 GROUNDWATER FLOW CHARACTERISTICS

The groundwater elevation data provided in Table 4 were used to develop the overburden groundwater elevation contour maps shown on Figures 5, 6, 7 and 8 for the four gauging events performed. Based on the groundwater contour pattern, flow is generally directed semi-radially from the eastern site area, towards the

Genesee River. In the northern site area, flow is directed to the northwest. In the southern site area, flow is directed to the southwest. The groundwater elevation contour pattern for each event is similar to the historically observed contour pattern. However, it should be noted that due to the presence of the low hydraulic conductivity ISS columns and Cement-Bentonite slurry wall, the flow field may have been altered near the western end of the site.

The shallow bedrock groundwater contour map is shown on Figure 9. Based on the groundwater elevation contour pattern, shallow bedrock groundwater flow is directed west toward the Genesee River, which is similar to historical flow patterns.

4.0 GROUNDWATER ANALYTICAL AND MONITORING RESULTS

The groundwater samples collected in the performance monitoring program were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) via EPA Method 8260B, for PAH compounds via EPA Method 8270C and for total cyanide via EPA Method 9012 (Table 3). The analytical reports from the laboratory for the two sampling events (October, 2008 and May 2009) are provided in Appendix B.

4.1 Water Quality and Monitoring Results

Tables 6 through 9 provide a summary of the monitoring/recovery well analytical results for this reporting period. Figure 10 provides a summary of the benzene, naphthalene and total cyanide results for each sample location except for the wells within the ISS columns, as well as relevant historical data, where available.

ISS Barrier Monitoring Wells

The ISS barrier monitoring wells were only sampled for water quality during the October 2008 sampling event. For monitoring well PZ-01R, a sufficient volume of groundwater was not present following purging activities to allow for collection of a complete sample for water quality analysis. As a result, PZ-01R was only sampled for BTEX compounds. Semi-volatile organic and total cyanide analyses could not be performed. The remaining two sampling locations within the ISS column area, MW-2R and MW-4R, exhibited detections of BTEX constituents, several semi-volatile organic compounds and total cyanide (Table 6). The water quality data from the ISS monitoring wells were collected only during the first sampling event after completion of the ISS IRM. No further water quality monitoring is to be performed for these three wells as per verbal approval of the NYSDEC project manager. Trace LNAPL was noted during the May 2009 monitoring event in MW-4R & PZ-01R.

Shallow Bedrock Monitoring Locations

Monitoring wells installed to monitor the occurrence of NAPL and water quality parameters in the shallow bedrock zone (DW-1R, DW-3R, MW-3DR, MW-5R and MW-8DR) underneath the ISS columns exhibited detections for BTEX, several PAH constituents and total cyanide (Table 7). A trace amount of LNAPL was also detected in MW-5R during the October 2008 monitoring event. As shown in Figure 10, the October 2008 and May 2009 results were generally higher than the comparable historical results for the monitoring locations, except for the results for samples from DW-1R and MW-8DR in May 2009, which were lower than the October 2008 results (Table 7).

Upgradient Shallow Monitoring Wells

Upgradient shallow monitoring wells, TPMW-1 and TPMW-2, exhibited concentrations of BTEX, PAH constituents and total cyanide above laboratory detection limits as shown in Table 8. The May 2009

concentrations data were lower than the October 2008 results for all compounds in groundwater from both wells. Trace LNAPL was observed in TPMW-2 during the February 2009 monitoring event.

Recovery Wells (RWs)

RWs in Recovery Trench: The twenty recovery wells installed in the NAPL collection trench specifically for NAPL recovery as part of the ISS/IRM are monitored quarterly for presence/absence of LNAPL and DNAPL. Results of LNAPL and DNAPL monitoring for these twenty wells are provided in Table 4. Trace amounts of LNAPL was measured during various sampling events in different recovery wells; however, DNAPL accumulation has not been measured during the four monitoring events at these locations.

RWs outside of Recovery Trench: The recovery wells not within the recovery trench (RW-21, RW-22 and RW-23) were sampled and analyzed for groundwater quality in October 2008. The results detected BTEX, PAH constituents and total cyanide above detection limits as shown on Table 9. The recovery wells were constructed with a 1-foot sump placed within the bedrock and the screen is immediately above the bedrock surface. DNAPL was not present in these wells during the four monitoring events however trace amounts of LNAPL were recorded in RW-21 and RW-22 during the May 2009 monitoring event.

Summary of NAPL Observations

As a quick summary, below is a table that shows the locations in which NAPL was noted during the monitoring events and is a sub-set of the information provided in Table 4.

Well ID	October 13-15, 2008		February 9-10, 2009		May 18, 2009		August 17-18, 2009	
	LNAPL Thicknes (feet)	DNAPL Thicknes (feet)	LNAPL Thicknes (feet)	DNAPL Thicknes (feet)	LNAPL Thicknes (feet)	DNAPL Thicknes (feet)	LNAPL Thicknes (feet)	DNAPL Thicknes (feet)
Shallow Bedrock Monitoring Wells:								
DW-1R	NP	NP	NP	NP	**TRACE**	NP	NP	NP
MW-5R	**TRACE**	NP	NP	NP	NP	NP	**TRACE**	NP
ISS Barrier Monitoring Wells:								
MW-4R	NP	NP	NP	NP	**TRACE**	NP	NP	NP
PZ-01R	NP	NP	NP	NP	**TRACE**	NP	NP	NP
Recovery Wells:								
RW-5	NP	NP	**0.03**	NP	NM	NM	**0.04**	NP
RW-7	NP	NP	NP	NP	**TRACE**	NP	NP	NP
RW-12	**TRACE**	NP	NP	NP	NP	NP	NP	NP
RW-13	**TRACE**	NP	NP	NP	NP	NP	NP	NP
RW-15	NP	NP	**TRACE**	NP	NP	NP	NP	NP
RW-19	NP	NP	**TRACE**	NP	NP	NP	NP	NP
RW-21	NP	NP	NP	NP	**TRACE**	NP	NP	NP
RW-22	NP	NP	NP	NP	**TRACE**	NP	NP	NP
Shallow Monitoring Wells:								
TPMW-2	NP	NP	**TRACE**	NP	NP	NP	NP	NP

Notes: NP – Not Present, NM = Not Measured

4.2 Data Validation

Ish Inc. performed a review of the QA/QC data generated by Test America. This validation included a review of pertinent QA/QC data such as sample extraction and analysis, holding times, calibration, laboratory blank and QA/QC sample results, and a review of the analytical case narrative. A DUSR was prepared which includes a compliance chart, a list of samples included in each sample delivery group and recalculations of sample results (Appendix B). Nonconforming QA/QC results were evaluated with respect to their implications for data reliability and usability, and data results were flagged accordingly on the results sheets. These qualifiers appear in the analytical data summary tables provided with this report.

4.3 Equipment and Trip Blanks

Analytical results for the equipment blank and trip blank samples indicate that constituents were not detected. The results for equipment and rinsate blanks are summarized in Table 10. In addition, field duplicate results were collected to verify the consistency of the field sampling procedures. In general, RPDs of less than 30% for groundwater duplicates indicate that both field sampling procedures and the analytical precision are of sufficient quality. As shown in Table 11, the RPDs for measurements of individual compounds ranged from 0 to 24. The RPDs for duplicate groundwater samples indicate that the sampling procedures and analytical precision are of sufficient quality. The DUSRs include a review of field duplicate results.

5.0 CONCLUSIONS

Evaluation of the information obtained from the October 2008, February 2009, May 2009 and August 2009 monitoring events yields the following conclusions:

- Based on observations from the four gauging events, trace LNAPL was detected in DW-1R, MW-4R, MW-5R, PZ-01R, RW-5, RW-7, RW-9, RW-12, RW-13, RW-15, RW-19, RW-21, RW-22, and TPMW-2.
- Measurable DNAPL was not detected in the monitoring locations including recovery wells in the NAPL collection trench.
- Both overburden zone and shallow bedrock zone groundwater exhibits flow regimes that are generally directed from the east to the west towards the Genesee River. The flow patterns for both groundwater zones are similar to historical observations.
- BTEX, PAHs and total cyanide concentrations were detected in the groundwater samples collected during the two water quality sampling events. The October 2008 results were generally higher than historical results from the RI in locations with comparable historical data. The May 2009 data were generally consistent with the October 2008 results, except for the results from DW-1R, MW-8DR, TPMW-1, and TPMW-2, which were lower than the October 2008 results.

RG&E will prepare and submit to NYSDEC a NAPL performance monitoring and recovery plan for the ISS IRM that identifies the wells to be monitored and sampling frequency for future monitoring events in 2010 and beyond, if needed. The next quarterly monitoring event, scheduled for mid-November 2009, will measure NAPL and groundwater levels in the 33 monitoring/recovery wells.

6.0 REFERENCES

Ish Inc., Installation and Monitoring of Groundwater Wells for Water Quality and NAPL at the East Station Site following the Completion of the ISS-IRM, September 4, 2008

Ish Inc. Draft IRM Work Plan for *In-situ* Stabilization/Solidification to Control NAPL Seeps at the RG&E East Station Former Manufactured Gas Plant Site, October 2003

Ish Inc. Phase IV Interim Remedial Measure Completion Report for East Station ISS/IRM, submitted to NYSDEC March 2009, Approved September 2009.

TABLES

TABLE 1

SUMMARY OF MONITORING WELL GAUGING AND SAMPLING EVENTS FOR PERFORMANCE MONITORING AND NAPL RECOVERY WELLS

RG&E East Station Former MGP Site

Rochester, New York

Well ID	October 13-15, 2008			February 9 & 10, 2009			May 18 & 19, 2009		August 17 & 18, 2009	
	NAPL Monitoring	Analytical Sampling	Depth to Groundwater	NAPL Monitoring	Analytical Sampling	Depth to Groundwater	NAPL Monitoring	Depth to Groundwater	NAPL Monitoring	Depth to Groundwater
Shallow Bedrock Monitoring Wells:										
DW-1R	x	x	x	x	x	x	x	x	x	x
DW-3R	x	x	x	x	x	x	x	x	x	x
MW-3DR	x	x	x	x	x	x	x	x	x	x
MW-5R	x	x	x	x	x	x	x	x	x	x
MW-8DR	x	x	x	x	x	x	x	x	x	x
ISS Barrier Monitoring Wells:										
MW-2R	x	x	x	x	NS	x	x	x	x	x
MW-4R	x	x	x	x	NS	x	x	x	x	x
PZ-01R	x	x	x	x	NS	x	x	x	x	x
Recovery Wells in the NAPL Collection Trench										
RW-1	x	NS	x	x	NS	x	x	x	x	x
RW-2	x	NS	x	x	NS	x	x	x	x	x
RW-3	x	NS	x	x	NS	x	x	x	x	x
RW-4	x	NS	x	x	NS	x	x	x	x	x
RW-5	x	NS	x	x	NS	x	x	x	x	x
RW-6	x	NS	x	x	NS	x	x	x	x	x
RW-7	x	NS	x	x	NS	x	x	x	x	x
RW-8	x	NS	x	x	NS	x	x	x	x	x
RW-9	x	NS	x	x	NS	x	x	x	x	x
RW-10	x	NS	x	x	NS	x	x	x	x	x
RW-11	x	NS	x	x	NS	x	x	x	x	x
RW-12	x	NS	x	x	NS	x	x	x	x	x
RW-13	x	NS	x	x	NS	x	x	x	x	x
RW-14	x	NS	x	x	NS	x	x	x	x	x
RW-15	x	NS	x	x	NS	x	x	x	x	x
RW-16	x	NS	x	x	NS	x	x	x	x	x
RW-17	x	NS	x	x	NS	x	x	x	x	x
RW-18	x	NS	x	x	NS	x	x	x	x	x
RW-19	x	NS	x	x	NS	x	x	x	x	x
RW-20	x	NS	x	x	NS	x	x	x	x	x
Recovery Wells to the East of ISS IRM Area										
RW-21	x	x	x	x	NS	x	x	x	x	x
RW-22	x	x	x	x	NS	x	x	x	x	x
RW-23	x	x	x	x	NS	x	x	x	x	x
Shallow Monitoring Wells to the East of ISS IRM Area										
TPMW-1	x	x	x	x	x	x	x	x	x	x
TPMW-2	x	x	x	x	x	x	x	x	x	x

Note:

x NAPL gauging or water quality analysis sampling performed

NS Not Sampled for water quality analysis

TABLE 2

MONITORING AND RECOVERY WELL INSTALLATION INFORMATION
RG&E East Station Former MGP Site
Rochester, New York

Well ID	Location	Basis	Well Construction	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Total Depth (feet bgs)	Screen Length (feet)
MW-2R	Near Former MW-2	ISS Perfomance Monitoring	2"	399.4	401.62	17.74	5'
MW-3DR	Near Former MW-3D (Bedrock)	Shallow Bedrock Water Quality and NAPL Monitoring	2"	399.2	401.02	35.43	10'
DW-1R	Near Former DW-1 (Bedrock)	Shallow Bedrock Water Quality and NAPL Monitoring	2"	399.6	401.04	35.20	10'
MW-4R	Near Former MW-4	ISS Perfomance Monitoring	2"	401.3	403.25	18.18	5'
DW-3R	Near Former DW-3 (Bedrock)	Shallow Bedrock Water Quality and NAPL Monitoring	2"	406.6	407.42	29.04	10'
MW-5R	Near Former MW-5 (Bedrock)	Shallow Bedrock Water Quality and NAPL Monitoring	2"	408.9	410.50	31.22	10'
PZ-01R	Near Former PZ-01	ISS Perfomance Monitoring	2"	409.7	411.80	22.46	5'
MW-8DR	Near Former MW-8D (Bedrock)	Shallow Bedrock Water Quality and NAPL Monitoring	2"	410.3	411.63	38.63	10'
TPMW-1	Located at TP-6	NAPL Monitoring and Water Quality	2"	417.0	419.06	27.05	10'
TPMW-2	Located at TP-5	NAPL Monitoring and Water Quality	2"	412.6	414.79	25.14	10'
RW-21	Located on Gasholder Base	NAPL Recovery	6"	401.0	403.25	22.21	10'
RW-22	Located on Gasholder Base	NAPL Recovery	6"	401.0	403.64	24.12	10'
RW-23	Located at Previously Dug Test Pit	NAPL Recovery	6"	411.8	413.72	28.25	10'

TABLE 3

GROUNDWATER ANALYTICAL PARAMETERS AND METHODS
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Analytical Method
Volatile Organic Compounds	
Benzene	EPA Method 8260B
Ethylbenzene	EPA Method 8260B
Toluene	EPA Method 8260B
Xylenes, Total	EPA Method 8260B
Semi-Volatile Organic Compounds	
Naphthalene	EPA Method 8270C
2-Methylnaphthalene	EPA Method 8270C
Acenaphthylene	EPA Method 8270C
Acenaphthene	EPA Method 8270C
Fluorene	EPA Method 8270C
Phenanthrene	EPA Method 8270C
Anthracene	EPA Method 8270C
Fluoranthene	EPA Method 8270C
Pyrene	EPA Method 8270C
Benzo[a]anthracene	EPA Method 8270C
Chrysene	EPA Method 8270C
Benzo[b]fluoranthene	EPA Method 8270C
Benzo[k]fluoranthene	EPA Method 8270C
Benzo[a]pyrene	EPA Method 8270C
Indeno[1,2,3-cd]pyrene	EPA Method 8270C
Dibenz[a,h]anthracene	EPA Method 8270C
Benzo[g,h,i]perylene	EPA Method 8270C
Total Cyanide	
Cyanide, Total	SW-846 Method 9012

Notes:

1. Field measurements included pH, specific conductance, temperature, dissolved oxygen and turbidity.
2. Quality assurance/quality control (QA/QC) samples included MS/MSD, field duplicates, equipment blanks and trip blanks (VOCs only).

TABLE 4

GROUNDWATER ELEVATIONS AND NAPL MEASUREMENTS
RG&E East Station Former MGP Site
Rochester, New York

Well ID	TOC[1] Elevation[2]	October 13, 2008				February 9 and 10, 2009				May 18, 2009				August 17 and 18, 2009			
		Depth to Groundwater (feet from TOC)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Groundwater Elevation[2]	Depth to Groundwater (feet from TOC)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Groundwater Elevation[2]	Depth to Groundwater (feet from TOC)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Groundwater Elevation[2]	Depth to Groundwater (feet from TOC)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Groundwater Elevation[2]
Shallow Bedrock Monitoring Wells																	
DW-1R	401.04	14.61	NP[3]	NP	386.43	9.43	NP	NP	391.61	10.26	TRACE	NP	390.78	10.31	NP	NP	390.73
DW-3R	407.42	18.90	NP	NP	388.52	16.26	NP	NP	391.16	15.97	NP	NP	391.45	15.56	NP	NP	391.86
MW-3DR	401.02	14.54	NP	NP	386.48	9.40	NP	NP	391.62	10.26	NP	NP	390.76	10.31	NP	NP	390.71
MW-5R	410.50	18.93	TRACE	NP	391.57	17.56	NP	NP	392.94	17.43	NP	NP	393.07	16.74	TRACE	NP	393.76
MW-8DR	411.63	20.64	NP	NP	390.99	17.74	NP	NP	393.89	18.16	NP	NP	393.47	17.17	NP	NP	394.46
ISS Barrier Monitoring Wells																	
MW-2R	401.62	15.28	NP	NP	386.34	1.10	NP	NP	400.52	10.89	NP	NP	390.73	10.94	NP	NP	390.68
MW-4R	403.25	14.83	NP	NP	388.42	11.42	NP	NP	391.83	11.58	TRACE	NP	391.67	11.07	NP	NP	392.18
PZ-01R	411.80	21.71	NP	NP	390.09	20.12	NP	NP	391.68	19.84	TRACE	NP	391.96	19.48	NP	NP	392.32
Recovery Wells																	
RW-1	412.71	18.38	NP	NP	394.33	16.81	NP	NP	395.90	18.15	NP	NP	394.56	17.47	NP	NP	395.24
RW-2	412.51	18.13	NP	NP	394.38	16.54	NP	NP	395.97	17.83	NP	NP	394.68	17.20	NP	NP	395.31
RW-3	412.35	17.94	NP	NP	394.41	16.35	NP	NP	396.00	17.70	NP	NP	394.65	17.00	NP	NP	395.35
RW-4	411.97	17.54	NP	NP	394.43	15.91	NP	NP	396.06	17.30	NP	NP	394.67	16.61	NP	NP	395.36
RW-5	411.86	17.22	NP	NP	394.64	17.80	0.03	NP	394.06	NM[4]	NM	NM	NM	16.47	0.04	NP	395.39
RW-6	410.17	16.03	NP	NP	394.14	14.06	NP	NP	396.11	15.51	NP	NP	394.66	15.29	NP	NP	394.88
RW-7	410.25	16.03	NP	NP	394.22	14.00	NP	NP	396.25	15.54	TRACE	NP	394.71	15.32	NP	NP	394.93
RW-8	407.69	13.61	NP	NP	394.08	11.55	NP	NP	396.14	12.97	NP	NP	394.72	12.76	NP	NP	394.93
RW-9	406.90	13.00	NP	NP	393.90	10.71	NP	NP	396.19	12.22	TRACE	NP	394.68	11.95	NP	NP	394.95
RW-10	405.53	12.17	NP	NP	393.36	9.34	NP	NP	396.19	10.93	NP	NP	394.60	10.66	NP	NP	394.87
RW-11	404.19	11.42	NP	NP	392.77	8.02	NP	NP	396.17	9.63	NP	NP	394.56	9.39	NP	NP	394.80
RW-12	403.60	11.23	TRACE	NP	392.37	7.65	NP	NP	395.95	9.08	NP	NP	394.52	8.80	NP	NP	394.80
RW-13	404.64	12.49	TRACE	NP	392.15	9.21	NP	NP	395.43	10.56	NP	NP	394.08	10.35	NP	NP	394.29
RW-14	401.72	9.51	NP	NP	392.21	6.70	NP	NP	395.02	7.67	NP	NP	394.05	7.45	NP	NP	394.27
RW-15	401.86	9.66	NP	NP	392.20	6.97	TRACE	NP	394.89	7.86	NP	NP	394.00	7.66	NP	NP	394.20
RW-16	402.08	9.82	NP	NP	392.26	7.17	NP	NP	394.91	8.06	NP	NP	394.02	7.85	NP	NP	394.23
RW-17	402.02	9.75	NP	NP	392.27	7.16	NP	NP	394.86	8.00	NP	NP	394.02	7.80	NP	NP	394.22
RW-18	402.49	10.25	NP	NP	392.24	7.61	NP	NP	394.88	8.47	NP	NP	394.02	8.27	NP	NP	394.22
RW-19	402.43	10.18	NP	NP	392.25	7.52	TRACE	NP	394.91	8.43	NP	NP	394.00	8.23	NP	NP	394.20
RW-20	406.02	13.74	NP	NP	392.28	11.12	NP	NP	394.90	12.00	NP	NP	394.02	11.80	NP	NP	394.22
RW-21	403.25	11.03	NP	NP	392.22	7.11	NP	NP	396.14	8.93	TRACE	NP	394.32	8.71	NP	NP	394.54
RW-22	403.64	11.56	NP	NP	392.08	7.54	NP	NP	396.10	9.34	TRACE	NP	394.30	9.14	NP	NP	394.50
RW-23	413.72	16.13	NP	NP	397.59	14.00	NP	NP	399.72	14.86	NP	NP	398.86	14.52	NP	NP	399.20
Shallow Monitoring Wells																	
TPMW-1	419.06	19.54	NP	NP	399.52	17.65	NP	NP	401.41	18.17	NP	NP	400.89	17.60	NP	NP	401.46
TPMW-2	414.79	17.46	NP	NP	397.33	11.47	TRACE	NP	403.32	15.72	NP	NP	399.07	15.62	NP	NP	399.17
Previously Installed Monitoring Wells and Piezometers																	
DW-5		Could not locate															
MW-1		Well removed during tar well IRM															
MW-6	421.24	12.96	NP	NP	408.28	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-6D	421.16	17.50	NP	NP	403.66	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-7	428.82	19.70	NP	NP	409.12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-9		Well removed during tar well IRM															
MW-10		Well removed during tar well IRM															
PZ-1	414.62	14.38	NP	NP	400.24	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-5	NM	DRY	NP	NP	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-9		Could not locate															
PZ-10		PVC is pinched and bent 0.8' below TOC															
PZ-11	402.15	9.07	NP	NP	393.08	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-12	416.70	11.08	NP	NP	405.62	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-13	420.52	12.52	NP	NP	408.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-14	421.86	6.71	NP	NP	415.15	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PZ-15		Piezometer removed during tar well IRM															
PZ-16		Well snapped off at ground surface marked location with cone															
PZ-17		Piezometer removed during tar well IRM															
PZ-18		Could not locate															
PZ-19		Piezometer removed during tar well IRM															
PZ-20		Could not locate															
SW-4	415.98	10.03	NP	NP	405.95	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SW-5		Could not locate															

Notes:
(1) TOC - top of casing
(2) Well elevation datum is NAVD 1988.
(3) NP - Not Present
(4) NM - Not Measured

TABLE 5

GROUNDWATER FIELD MEASUREMENTS - OCTOBER 2008/MAY 2009
RG&E East Station Former MGP Site
Rochester, New York

Well ID	Sampling Date	pH (SU)	Specific Conductance (µS/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)
Shallow Bedrock Monitoring Wells							
DW-1R	October 14, 2008	7.27	3,100	17.5	2.89	-235	10
	May 19, 2009	8.07	3,020	15.7	NA	-125	130
DW-3R	October 15, 2008	7.18	1,057	15.2	0.80	-13	15
	May 19, 2009	8.08	1,200	13.4	NA	-196	47
MW-3DR	October 14, 2008	7.52	2,993	17.3	0.30	-163	0
	May 19, 2009	7.83	4,500	15.0	NA	-200	27
MW-5R	October 15, 2008	9.90	872	14.6	2.36	-250	5
	May 19, 2009	7.00	2,810	14.9	NA	-120	48
MW-8DR	October 14, 2008	7.19	2,218	16.9	3.83	-125	40
	May 19, 2009	7.14	2,710	15.0	NA	-165	100
ISS Wall Shallow Performance Monitoring Wells							
MW-2R	October 14, 2008	9.36	6,835	22.6	2.04	-386	90
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
MW-4R	October 15, 2008	12.32	4,710	16.6	1.79	-437	13
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
PZ-01R	October 14, 2008	12.20	5,462	18.9	0.29	-299	36
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
Recovery Wells							
RW-21	October 14, 2008	6.67	2,984	18.5	2.37	-145	3
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
RW-22	October 14, 2008	6.59	4,383	18.6	0.15	-167	5
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
RW-23	October 14, 2008	7.43	4,521	14.1	3.08	-198	9
	Not Sampled May 2009	NS	NS	NS	NS	NS	NS
Shallow Monitoring Wells							
TPMW-1	October 14, 2008	6.97	5,126	14.9	0.32	-97	3
	May 19, 2009	7.57	4,100	10.3	NA	-122	23
TPMW-2	October 14, 2008	9.21	1,203	15.8	2.84	-217	22
	May 19, 2009	7.81	1,210	11.3	NA	-124	181

NS = Not sampled, readings not available
NA = Not available - readings were not accurate

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
FOR THE ISS BARRIER MONITORING WELLS - OCTOBER 2008
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	MW-2R 10/14/2008	MW-4R 10/15/2008	PZ-01R[1] 10/14/2008
Volatiles				
Benzene	µg/L	46	26,000	10,000
Toluene	µg/L	11	10,000	2,100
Ethylbenzene	µg/L	7.9	1,600	570
Xylenes, Total	µg/L	13	5,900	1,900
Semi-Volatiles				
Naphthalene	µg/L	200	5,300	NS
2-Methylnaphthalene	µg/L	9.0 J	840	NS
Acenaphthylene	µg/L	4.5 J	400 U	NS
Acenaphthene	µg/L	14 J	89 J	NS
Fluorene	µg/L	9.9 J	55 J	NS
Phenanthrene	µg/L	11 J	400 U	NS
Anthracene	µg/L	3.4 J	400 U	NS
Fluoranthene	µg/L	1.9 J	400 U	NS
Pyrene	µg/L	1.9 J	400 U	NS
Benzo[a]anthracene	µg/L	16 U	400 U	NS
Chrysene	µg/L	16 U	400 U	NS
Benzo[b]fluoranthene	µg/L	16 U	400 U	NS
Benzo[k]fluoranthene	µg/L	16 U	400 U	NS
Benzo[a]pyrene	µg/L	16 U	400 U	NS
Indeno[1,2,3-cd]pyrene	µg/L	16 U	400 U	NS
Dibenz[a,h]anthracene	µg/L	16 U	400 U	NS
Benzo[g,h,i]perylene	µg/L	16 U	400 U	NS
Cyanide				
Cyanide, Total	µg/L	4,000	27,900	NS
Field Data				
Conductivity	µS/cm	6,835	4,710	5,462
PH	SU	9.36	12.32	12.2
Temperature	C	22.6	16.6	18.9
Turbidity	NTU	90	13	36
ORP	mV	-386	-437	-299
DO	mg/L	2.04	1.79	0.29

Notes:
NS - Not sampled
J - Indicates an estimated value.
U - Indicates that the constituent was not detected at the reported detection limit.
[1] - Insufficient volume in well to collected semi-volatile and cyanide samples from PZ-01R.
ISS barrier monitoring wells were not sampled in May 2009

TABLE 7

GROUNDWATER ANALYTICAL RESULTS
FOR THE SHALLOW BEDROCK MONITORING WELLS - OCTOBER 2008/MAY 2009
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	DW-1R 10/14/2008	DW-1R 5/19/2009	DW-3R 10/15/2008	DW-3R 5/19/2009	MW-3DR 10/14/2008	MW-3DR 5/19/2009	MW-5R 10/15/2008	MW-5R 5/19/2009	MW-8DR 10/14/2008	MW-8DR 5/19/2009
Volatiles											
Benzene	µg/L	37,000	2,000 D	19,000	17,000 D	19,000	27,000 D	25,000	38,000 D	37,000	18,000 D
Toluene	µg/L	13,000	270	2,100	2,300	9,700	5,500	6,000	6,900 J	2,000 U	55 J
Ethylbenzene	µg/L	3,500	170	1,800	1,300	4,800	5,700	2,600	3,200 J	1,900 J	840
Xylenes, Total	ug/L	4,200	290	1,900	2,500	4,100	3,900	4,100	4,400 J	1,300 J	470
Semi-Volatiles											
Naphthalene	µg/L	2,900	1.4	920	2,700 D	2,500	3,900 D	8,200	4,500 D	6,000 J	1,300 D
2-Methylnaphthalene	µg/L	410	3.2	93	240 D	180 J	220 D	1,000	490 D	690 J	98
Acenaphthylene	µg/L	130 J	2.8	83 U	7.3	70 J	62	130 J	61	-- R	1.3
Acenaphthene	µg/L	34 J	6.1	39 J	61	47 J	14	120 J	72	140 J	30
Fluorene	µg/L	210 U	2.6	10 J	18	200 U	7.9	78 J	48	-- R	7.4
Phenanthrene	µg/L	210 U	1.8	9.8 J	17	200 U	5.9	110 J	85	-- R	3.8
Anthracene	µg/L	210 U	0.48 U	83 U	4.1	200 U	0.80	420 U	17	-- R	0.77
Fluoranthene	µg/L	210 U	0.48 U	83 U	1.9	200 U	0.47 U	420 U	15	-- R	0.48 U
Pyrene	µg/L	210 U	0.48 U	83 U	2.6	200 U	0.47 U	420 U	23	-- R	0.48 U
Benzo[a]anthracene	µg/L	210 U	0.48 U	83 U	0.61	200 U	0.47 U	420 U	8.2	-- R	0.48 U
Chrysene	µg/L	210 U	0.48 U	83 U	0.60	200 U	0.47 U	420 U	6.8	-- R	0.48 U
Benzo[b]fluoranthene	µg/L	210 U	0.48 U	83 U	0.49 U	200 U	0.47 U	420 U	5.2	-- R	0.48 U
Benzo[k]fluoranthene	µg/L	210 U	0.48 U	83 U	0.49 U	200 U	0.47 U	420 U	0.49 U	-- R	0.48 U
Benzo[a]pyrene	µg/L	210 U	0.48 U	83 U	1.5	200 U	0.47 U	420 U	6.4	-- R	0.48 U
Indeno[1,2,3-cd]pyrene	µg/L	210 U	0.48 U	83 U	0.49 U	200 U	0.47 U	420 U	3.2	-- R	0.48 U
Dibenz[a,h]anthracene	µg/L	210 U	0.48 U	83 U	0.49 U	200 U	0.47 U	420 U	2.7	-- R	0.48 U
Benzo[g,h,i]perylene	µg/L	210 U	0.48 U	83 U	0.49 U	200 U	0.47 U	420 U	3.4	-- R	0.48 U
Cyanide											
Cyanide, Total	µg/L	1,000	1,020 J	260	164 J	1,000	1,470 J	68	372 J	85.0	44.3
Field Data											
Conductivity	µS/cm	3,100	3,020	1,057	1,200	2,993	4,500	872	2,810	2,218	2,710
PH	SU	7.27	8.07	7.18	8.08	7.52	7.83	9.90	7.00	7.19	7.14
Temperature	C	17.5	15.7	15.2	13.4	17.3	15.0	14.6	14.9	16.9	15
Turbidity	NTU	10	130	15	47	0	27	5	48	40	100
ORP	mV	-235	-125	-13	-196	-163	-200	-250	-120	-125	-165
DO	mg/L	2.89	NA	0.80	NA	0.30	NA	2.36	NA	3.83	NA

Notes:
J - Indicates an estimated value.
U - Indicates that the constituent was not detected at the reported detection limit.
R - Indicates that the result was rejected due to surrogate recoveries, which were recovered at 0%.
D - Indicates that the result is from a diluted run
NA - Not available - readings were not accurate

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
FOR THE UPGRADIENT SHALLOW MONITORING WELLS - OCTOBER 2008/MAY 2009
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	TPMW-1 10/14/2008	TPMW-1 5/19/2009	TPMW-2 10/14/2008	TPMW-2 5/19/2009
Volatiles					
Benzene	µg/L	1,100	370	290	88 J
Toluene	µg/L	420	26	93	6.9
Ethylbenzene	µg/L	810	190	390	130
Xylenes, Total	ug/L	2,300	350	350	64
Semi-Volatiles					
Naphthalene	µg/L	2,300	1,000 D	790	1.1
2-Methylnaphthalene	µg/L	260	93	160	0.49 U
Acenaphthylene	µg/L	55 J	23	15 J	0.49 U
Acenaphthene	µg/L	32 J	14	69	2.5
Fluorene	µg/L	27 J	12	37 J	1.2
Phenanthrene	µg/L	24 J	9.6	45	0.49 U
Anthracene	µg/L	200 U	1.8	11 J	0.49 U
Fluoranthene	µg/L	200 U	0.76	40 U	0.87
Pyrene	µg/L	200 U	0.75	5.1 J	0.76
Benzo[a]anthracene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Chrysene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Benzo[b]fluoranthene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Benzo[k]fluoranthene	µg/L	200 U	0.47 U	40 U	0.49 U
Benzo[a]pyrene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Indeno[1,2,3-cd]pyrene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Dibenz(a,h)anthracene	µg/L	200 U	0.47 U	40 U	0.49 UJ
Benzo[g,h,i]perylene	µg/L	200 U	0.47 U	40 U	0.49 U
Cyanide					
Cyanide, Total	µg/L	790	483 J	6,600	151 J
Field Data					
Conductivity	µS/cm	5,126	4,100	1,203	1,210
PH	SU	6.97	7.57	9.21	7.81
Temperature	C	14.9	10.3	15.8	11.3
Turbidity	NTU	3	23	22	181
ORP	mV	-97	-122	-217	-124
DO	mg/L	0.32	NA	2.84	NA

Note:
J - Indicates an estimated value.
U - Indicates that the constituent was not detected at the reported detection limit.
NA - Not available - readings were not accurate

TABLE 9

GROUNDWATER ANALYTICAL RESULTS
FOR THE RECOVERY WELLS - OCTOBER 2008
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	RW-21 10/14/2008	RW-22 10/14/2008	RW-23 10/14/2008
Volatiles				
Benzene	µg/L	1,700	1,500	2,700
Toluene	µg/L	47 J	17 J	130
Ethylbenzene	µg/L	2,600	640	3,300
Xylenes, Total	ug/L	2,000	120	4,500
Semi-Volatiles				
Naphthalene	µg/L	2,500	430	5,800 J
2-Methylnaphthalene	µg/L	300	51	440 J
Acenaphthylene	µg/L	200 U	9.4 J	-- R
Acenaphthene	µg/L	62 J	47	210 J
Fluorene	µg/L	34 J	29 J	64 J
Phenanthrene	µg/L	41 J	34 J	68 J
Anthracene	µg/L	200 U	5.9 J	-- R
Fluoranthene	µg/L	200 U	40 U	-- R
Pyrene	µg/L	200 U	40 U	-- R
Benzo[a]anthracene	µg/L	200 U	40 U	-- R
Chrysene	µg/L	200 U	40 U	-- R
Benzo[b]fluoranthene	µg/L	200 U	40 U	-- R
Benzo[k]fluoranthene	µg/L	200 U	40 U	-- R
Benzo[a]pyrene	µg/L	200 U	40 U	-- R
Indeno[1,2,3-cd]pyrene	µg/L	200 U	40 U	-- R
Dibenz(a,h)anthracene	µg/L	200 U	40 U	-- R
Benzo[g,h,i]perylene	µg/L	200 U	40 U	-- R
Cyanide				
Cyanide, Total	µg/L	1,900	2,800	620
Field Data				
Conductivity	µS/cm	2,984	4,383	4,521
PH	SU	6.67	6.59	7.43
Temperature	C	18.5	18.6	14.1
Turbidity	NTU	3	5	9
ORP	mV	-145	-167	-198
DO	mg/L	2.37	0.15	3.08

Notes:
NS - Not sampled
J - Indicates an estimated value.
U - Indicates that the constituent was not detected at the reported detection limit.
R - Indicates that the result was rejected due to surrogate recoveries, which were recovered at 0%.
Recovery monitoring wells were not sampled in May 2009

TABLE 10

EQUIPMENT AND TRIP BLANK RESULTS - OCTOBER 2008/MAY 2009
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	EB101508 10/15/2008	TB101408 10/14/2008	TB101508 10/15/2008	TRIP BLANK 5/19/2009
Volatiles					
Benzene	µg/L	5.0 U	5.0 U	5.0 U	1.0 U
Toluene	µg/L	5.0 U	5.0 U	5.0 U	1.0 U
Ethylbenzene	µg/L	5.0 U	5.0 U	5.0 U	1.0 U
Xylenes, Total	ug/L	5.0 U	5.0 U	5.0 U	2.0 U
Semi-Volatiles					
Naphthalene	µg/L	4.0 U	NS	NS	NS
2-Methylnaphthalene	µg/L	4.0 U	NS	NS	NS
Acenaphthylene	µg/L	4.0 U	NS	NS	NS
Acenaphthene	µg/L	4.0 U	NS	NS	NS
Fluorene	µg/L	4.0 U	NS	NS	NS
Phenanthrene	µg/L	4.0 U	NS	NS	NS
Anthracene	µg/L	4.0 U	NS	NS	NS
Fluoranthene	µg/L	4.0 U	NS	NS	NS
Pyrene	µg/L	4.0 U	NS	NS	NS
Benzo[a]anthracene	µg/L	4.0 U	NS	NS	NS
Chrysene	µg/L	4.0 U	NS	NS	NS
Benzo[b]fluoranthene	µg/L	4.0 U	NS	NS	NS
Benzo[k]fluoranthene	µg/L	4.0 U	NS	NS	NS
Benzo[a]pyrene	µg/L	4.0 U	NS	NS	NS
Indeno[1,2,3-cd]pyrene	µg/L	4.0 U	NS	NS	NS
Dibenz[a,h]anthracene	µg/L	4.0 U	NS	NS	NS
Benzo[g,h,i]perylene	µg/L	4.0 U	NS	NS	NS
Cyanide					
Cyanide, Total	µg/L	10.0 U	NS	NS	NS

Notes:
NS - Not sampled
U - Indicates that the constituent was not detected at the reported detection limit.

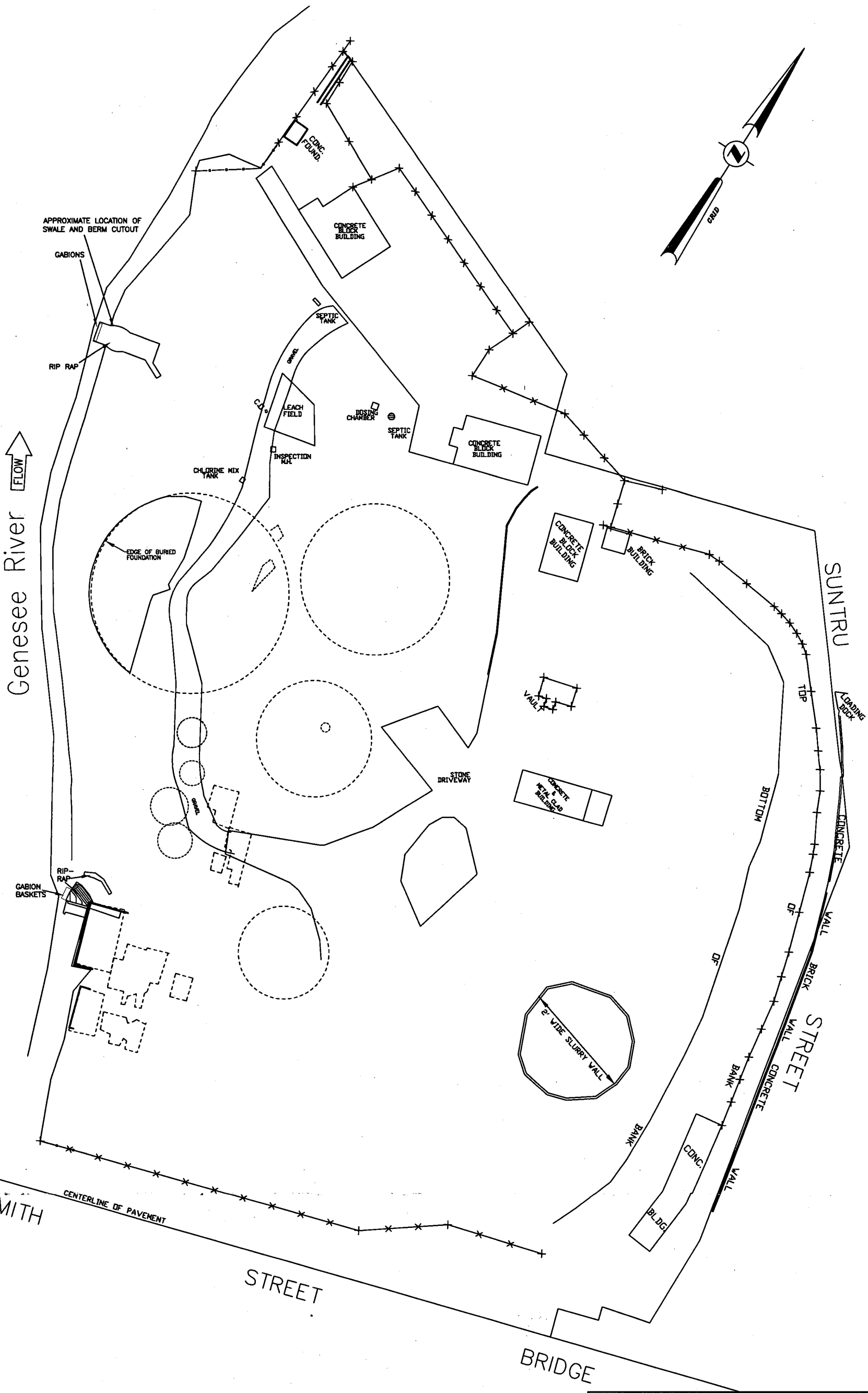
TABLE 11

GROUNDWATER ANALYTICAL RESULTS
FIELD DUPLICATE SAMPLES - OCTOBER 2008/MAY 2009
RG&E East Station Former MGP Site
Rochester, New York

Parameter	Units	RW-23 10/14/2008	FD101408 10/14/2008	RPD	TPMW-1 5/19/2009	TPMW-1 Dup 5/19/2009	RPD
Volatiles							
Benzene	µg/L	2,700	2,700	0	370	380	3
Toluene	µg/L	130	130	0	26	28	7
Ethylbenzene	µg/L	3,300	3,300	0	190	190	0
Xylenes, Total	ug/L	4,500	4,500	0	350	350	0
Semi-Volatiles							
Naphthalene	µg/L	5,800 J	5,400 J	7	1,000 D	800 D	22
2-Methylnaphthalene	µg/L	440 J	430 J	2	93	73	24
Acenaphthylene	µg/L	-- R	-- R	NC	23	19	19
Acenaphthene	µg/L	210 J	190 J	10	14	11	24
Fluorene	µg/L	64 J	62 J	3	12	11	9
Phenanthrene	µg/L	68 J	63 J	8	9.6	8.5	12
Anthracene	µg/L	-- R	-- R	NC	1.8	1.6	12
Fluoranthene	µg/L	-- R	-- R	NC	0.76	0.63	19
Pyrene	µg/L	-- R	-- R	NC	0.75	0.64	16
Benzo[a]anthracene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Chrysene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Benzo[b]fluoranthene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Benzo[k]fluoranthene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Benzo[a]pyrene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Indeno[1,2,3-cd]pyrene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Dibenz(a,h)anthracene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Benzo[g,h,i]perylene	µg/L	-- R	-- R	NC	0.47 U	0.47 U	NC
Cyanide							
Cyanide, Total	µg/L	620	590	5	483 J	497 J	3

Notes:
RPD - Relative percent difference
J - Indicates an estimated value.
U - Indicates that the constituent was not detected at the reported detection limit.
R - Indicates that the result was rejected due to surrogate recoveries, which were recovered at 0%.

FIGURES



LEGEND

Existing Buildings

Estimated Location of Foundations of Selected Former Structures

0 25 50 100 200

Approximate Scale (ft)

1. Base map and survey information completed by META and RG&E.

FIGURE 1
ROCHESTER
GAS & ELECTRIC

GENERAL SITE MAP

EAST STATION FORMER MGP SITE
ROCHESTER, NEW YORK

DATE: 11/05/09 FILE NAME: FIGURE 1 GW

ISH INC.

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

LEGEND
- NAPL COLLECTION TRENCH
- CEMENT BENTONITE SLURRY WALL
- APPROXIMATE LOCATION OF FOUNDATIONS OF FORMER STRUCTURES
- ISS MONITORING LOCATION
- SHALLOW BEDROCK MONITORING LOCATION
- UPGRADIENT SHALLOW MONITORING LOCATION
- VERTICAL NAPL RECOVERY/MONITORING POINT
- CYANIDE IMPACTED MATERIAL EXCAVATION AREA
- GROUNDWATER FLOW CHANNELS

GENESEE RIVER

GRID

APPROXIMATE LOCATION OF SWALE AND BERM CUTOUT

EDGE OF RIVER

GABIONS

RIP RAP

MW-3DR

MW-2R

DW-1R

DW-3R

MW-4R

MW-5R

PZ-01R

MW-8DR

RW-1 RW-2 RW-3 RW-4 RW-5 RW-6 RW-7 RW-8 RW-9 RW-10 RW-11 RW-12 RW-13 RW-14 RW-15 RW-16 RW-17 RW-18 RW-19 RW-20 RW-21 RW-22 RW-23

400.02

EDGE OF BURIED FOUNDATION

RIP-RAP

GABION BASKETS

CONCRETE BLOCK BUILDING

SEPTIC TANK

GRAVEL

LEACH FIELD

DOSING CHAMBER

SEPTIC TANK

CONCRETE BLOCK BUILDING

INSPECTION M.H.

CHLORINE MIX TANK

TPMW-1

TPMW-2

STONE DRIVEWAY

NOTE:
WIDTH OF SLURRY WALL AND NAPL COLLECTION TRENCH VARIES AND IS APPROXIMATE.

FIGURE 2
ROCHESTER
GAS & ELECTRIC

SUMMARY OF ISS IRM ACTIVITIES

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 2 GW

ISH INC.

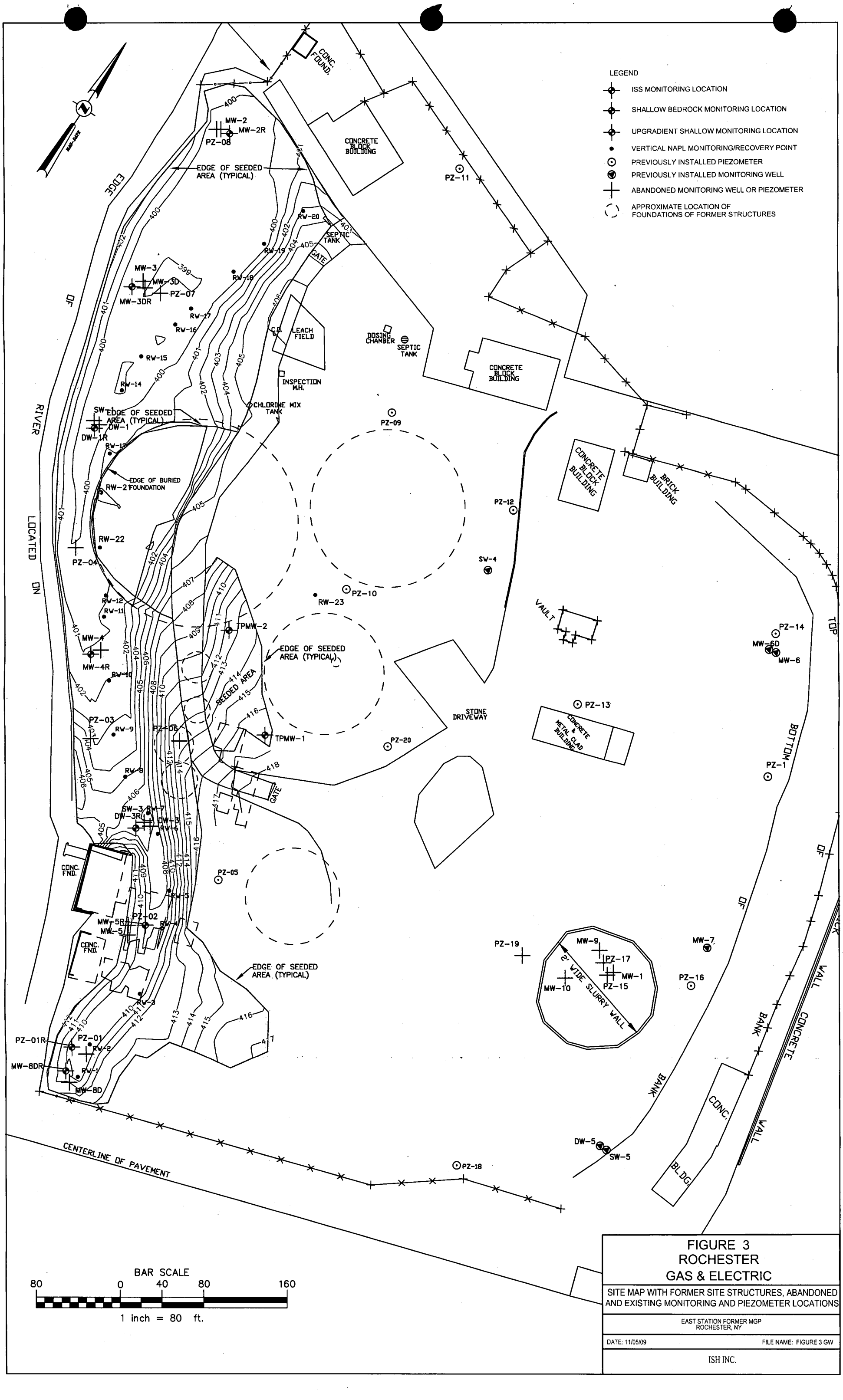


FIGURE 3
ROCHESTER GAS & ELECTRIC

SITE MAP WITH FORMER SITE STRUCTURES, ABANDONED AND EXISTING MONITORING AND PIEZOMETER LOCATIONS

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 3 GW

ISH INC.

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

LEGEND

APPROXIMATE LOCATION OF FOUNDATIONS OF FORMER STRUCTURES

ISS PERFORMANCE MONITORING LOCATION

SHALLOW BEDROCK MONITORING LOCATION

UPGRADIENT SHALLOW MONITORING LOCATION

VERTICAL NAPL MONITORING/RECOVERY POINT

GENESEE

RIVER

RIVER

GRID

EDGE OF BURIED FOUNDATION

MW-2R
MW-3DR
MW-4R
MW-5R
DW-1R
DW-3R
MW-8DR
PZ-01R
TPMW-1
TPMW-2

RW-1
RW-2
RW-3
RW-4
RW-5
RW-6
RW-7
RW-8
RW-9
RW-10
RW-11
RW-12
RW-13
RW-14
RW-15
RW-16
RW-17
RW-18
RW-19
RW-20
RW-21
RW-22
RW-23

CONCRETE BLOCK BUILDING
SEPTIC TANK
LEACH FIELD
DOSING CHAMBER
SEPTIC TANK
CONCRETE BLOCK BUILDING
INSPECTION M.H.
CHLORINE MIX TANK
GRAVEL
GRAVEL
STONE DRIVEWAY

397 398 400 401 402 404 405 406 407 408 410 412 413 414 415 416 417 418

NOTES:

1. RW-1 THROUGH RW-20 ARE 8-INCH DIAMETER RECOVERY WELLS.
2. RW-21 THROUGH RW-23 ARE 6-INCH DIAMETER RECOVERY WELLS.
3. THE TPMW WELLS AND THE ISS PERFORMANCE AND SHALLOW BEDROCK MONITORING WELLS ARE 2-INCH DIAMETER WELLS.

FIGURE 4
ROCHESTER GAS & ELECTRIC

MONITORING AND RECOVERY WELL LOCATIONS
INSTALLED DURING THE ISS IRM ACTIVITIES

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 4 GW

ISH INC.

LEGEND

- CEMENT BENTONITE SLURRY WALL
- NAPL MONITORING RECOVERY WELL
- ISS COLUMN
- SHALLOW MONITORING WELL
- PIEZOMETER LOCATION
- (386.34) GROUNDWATER ELEVATION (FEET MSL)
- 395 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

NOTE:
THE GROUNDWATER ELEVATION CONTOUR WAS CREATED FROM THE ELEVATIONS SHOWN. LOCATIONS WITHOUT ELEVATIONS WERE NOT USED IN THE DEVELOPMENT OF THIS GROUNDWATER CONTOUR.

BAR SCALE
80 0 40 80 160
1 inch = 80 ft.

FIGURE 5
ROCHESTER GAS & ELECTRIC

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP 10-13-08

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 5 GW

ISH INC.

LEGEND

- CEMENT BENTONITE SLURRY WALL
- NAPL MONITORING RECOVERY WELL
- ISS COLUMN
- SHALLOW MONITORING WELL
- PIEZOMETER LOCATION
- (394.90) GROUNDWATER ELEVATION (FEET MSL)
- 398 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

NOTE:
THE GROUNDWATER ELEVATION CONTOUR WAS CREATED FROM THE ELEVATIONS SHOWN. LOCATIONS WITHOUT ELEVATIONS WERE NOT USED IN THE DEVELOPMENT OF THIS GROUNDWATER CONTOUR.

BAR SCALE
80 0 40 80 160
1 inch = 80 ft.

FIGURE 6
ROCHESTER GAS & ELECTRIC

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP 02-09-09 AND 02-10-09

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 6 GW

ISH INC.

LEGEND

- CEMENT BENTONITE SLURRY WALL
- NAPL MONITORING RECOVERY WELL
- ISS COLUMN
- SHALLOW MONITORING WELL
- PIEZOMETER LOCATION
- (394.02) GROUNDWATER ELEVATION (FEET MSL)
- 398 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

NOTE:
THE GROUNDWATER ELEVATION CONTOUR WAS CREATED FROM THE ELEVATIONS SHOWN. LOCATIONS WITHOUT ELEVATIONS WERE NOT USED IN THE DEVELOPMENT OF THIS GROUNDWATER CONTOUR.

BAR SCALE
80 0 40 80 160
1 inch = 80 ft.

FIGURE 7
ROCHESTER GAS & ELECTRIC

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP 5-18-09

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 7 GW

ISH INC.

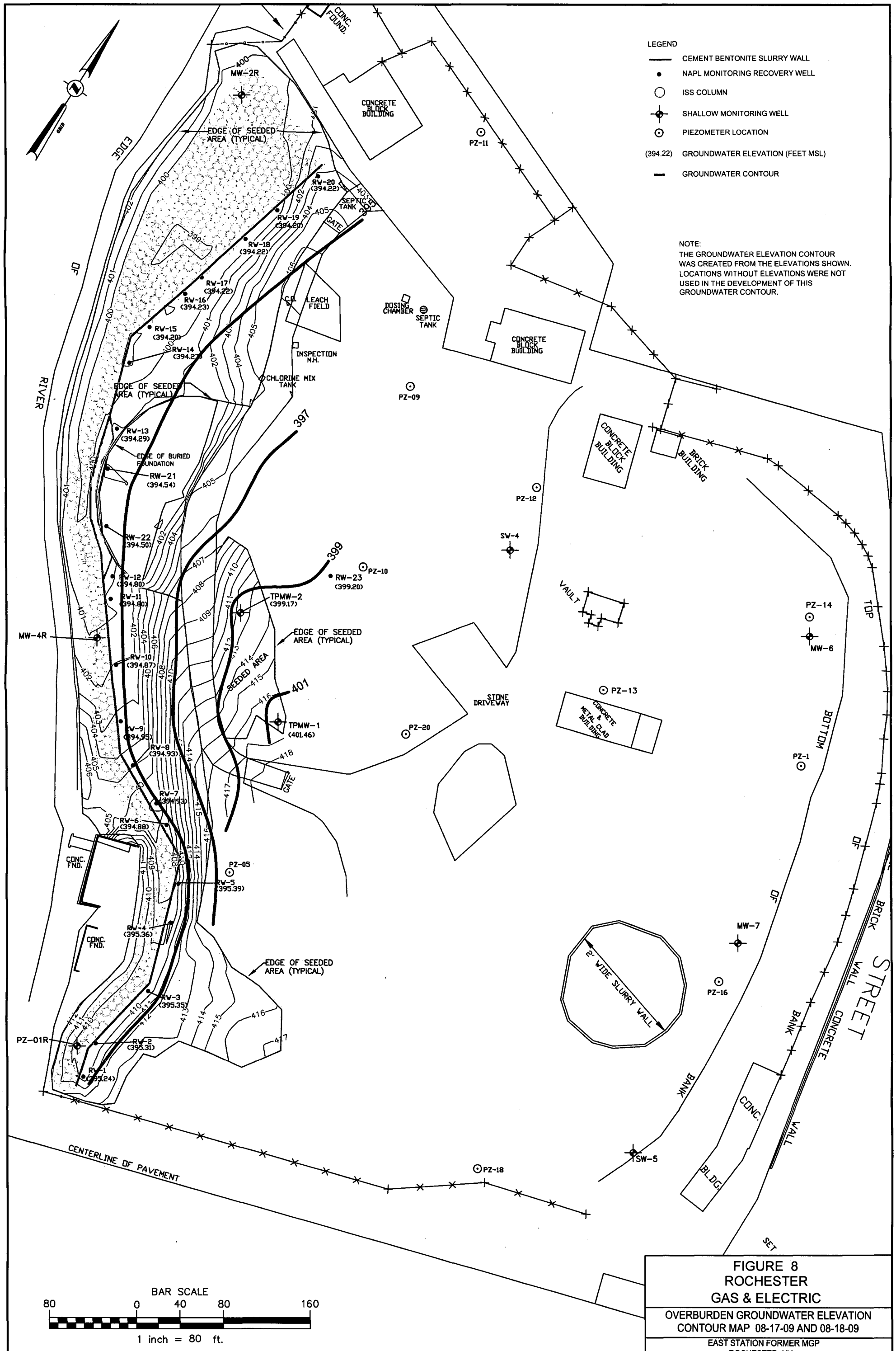


FIGURE 8
ROCHESTER
GAS & ELECTRIC

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP 08-17-09 AND 08-18-09

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 8 GW

ISH INC.

LEGEND

SHALLOW BEDROCK MONITORING WELL

(403.66) GROUNDWATER ELEVATION (FEET MSL)

387 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

GROUNDWATER FLOW DIRECTION

NOTE:
THE GROUNDWATER ELEVATION CONTOUR WAS CREATED FROM THE ELEVATIONS SHOWN. LOCATIONS WITHOUT ELEVATIONS WERE NOT USED IN THE DEVELOPMENT OF THIS GROUNDWATER CONTOUR.

CONCRETE BLOCK BUILDING

PZ-11

EDGE OF SEEDED AREA (TYPICAL)

SEPTIC TANK

GATE

MW-3DR (386.48)

C.O. LEACH FIELD

DOSING CHAMBER

SEPTIC TANK

INSPECTION M.H.

CHLORINE MIX TANK

CONCRETE BLOCK BUILDING

EDGE OF SEEDED AREA (TYPICAL)

DW-1R (386.43)

EDGE OF BURIED FOUNDATION

CONCRETE BLOCK BUILDING

BRICK BUILDING

VAULT

MW-6D (403.66)

SEEDED AREA

STONE DRIVEWAY

CONCRETE & METAL CLAD BUILDING

DW-3R (388.52)

CONC. FND.

MW-5R (391.57)

CONC. FND.

EDGE OF SEEDED AREA (TYPICAL)

2' WIDE SLURRY WALL

MW-8DR (390.99)

DW-5

CONC. WALL

BLDG.

CENTERLINE OF PAVEMENT

SMITH STREET BRIDGE

BAR SCALE
80 0 40 80 160
1 inch = 80 ft.

FIGURE 9
ROCHESTER
GAS & ELECTRIC

SHALLOW BEDROCK GROUNDWATER
ELEVATION CONTOUR MAP

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 9 GW

ISH INC.

LEGEND

- ISS MONITORING LOCATION
- SHALLOW BEDROCK MONITORING LOCATION
- UPGRADIENT SHALLOW MONITORING LOCATION
- VERTICAL NAPL MONITORING/ RECOVERY POINT

NS - NOT SAMPLED
ND - NOT DETECTED
- ALL RESULTS ARE IN µg/L

MW-3DR

CONSTITUENT	12/98	3/99	10/08	5/09
BENZENE	990	420	19,000	27,000
NAPHTHALENE	ND	73	2,500	3,900
CYANIDE	2,030	1,490	1,000	1,470

DW-1R

CONSTITUENT	12/98	3/99	10/08	5/09
BENZENE	6,400	4,900	37,000	2,000
NAPHTHALENE	1,900	1,100	2,900	1.4
CYANIDE	974	1,300	1,000	1,020

RW-21

CONSTITUENT	10/08
BENZENE	1,700
NAPHTHALENE	2,500
CYANIDE	1,900

RW-22

CONSTITUENT	10/08
BENZENE	1,500
NAPHTHALENE	430
CYANIDE	2,800

TPMW-2

CONSTITUENT	10/08	5/09
BENZENE	290	88
NAPHTHALENE	790	1.1
CYANIDE	6,600	151

RW-23

CONSTITUENT	10/08
BENZENE	2,700
NAPHTHALENE	5,800
CYANIDE	620

TPMW-1

CONSTITUENT	10/08	5/09
BENZENE	1,100	370
NAPHTHALENE	2,300	1,000
CYANIDE	790	483

DW-3R

CONSTITUENT	12/98	3/99	10/08	5/09
BENZENE	ND	NS	19,000	17,000
NAPHTHALENE	ND	NS	920	2,700
CYANIDE	28	NS	260	164

MW-5R

CONSTITUENT	12/98	3/99	10/08	5/09
BENZENE	5,300	14,300	25,000	38,000
NAPHTHALENE	390	1,300	8,200	4,500
CYANIDE	ND	NS	68	372

MW-8DR

CONSTITUENT	12/98	3/99	10/08	5/09
BENZENE	2,400	4,600	37,000	18,000
NAPHTHALENE	7,000	1,900	6,000	1,300
CYANIDE	108	101	85	44.3

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

NOTE: ISS IRM WAS COMPLETED IN SEPTEMBER 2008

FIGURE 10
ROCHESTER GAS & ELECTRIC

SUMMARY OF BENZENE, NAPHTHALENE AND CYANIDE ANALYTICAL RESULTS

EAST STATION FORMER MGP
ROCHESTER, NY

DATE: 11/05/09 FILE NAME: FIGURE 10 GW

ISH INC.

APPENDIX A

GROUNDWATER PURGING DATA

APPENDIX A

GROUNDWATER PURGING DATA - OCTOBER 14-15, 2008 and MAY 19, 2009

RG&E East Station Former MGP Site
Rochester, New York

Well ID: DW-1R | Sample Date: 10/14/2008 | Purge Begin: 10:42 | Sample Time: 11:20
Total Depth: 35.20 feet toc | Initial Depth to Water: 14.65 | Purge End: 11:16 | Set Intake: 28.50 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	10:43	15.71	7.97	3,137	17.7	NA	-150	7	Clear
0.20	10:46	16.12	7.77	3,137	17.6	NA	-196	5	Clear
0.25	10:49	16.65	7.65	3,139	17.9	6.65	-203	5	Clear
0.30	10:52	17.14	7.60	3,130	17.8	3.96	-213	5	Clear
0.35	10:55	17.74	7.52	3,079	17.9	3.40	-219	4	Clear
0.40	10:58	17.99	7.50	3,068	17.9	3.00	-221	12	Clear
0.45	11:01	18.42	7.46	3,059	18.0	2.51	-222	12	Clear
0.50	11:04	18.84	7.41	3,058	18.0	5.76	-223	4	Clear
0.55	11:07	19.02	7.33	3,068	17.6	4.21	-226	4	Clear
0.60	11:10	19.50	7.31	3,075	17.5	2.93	-231	10	Clear
0.65	11:13	19.68	7.28	3,075	17.7	2.90	-233	10	Clear
0.70	11:16	19.98	7.27	3,100	17.5	2.89	-235	10	Clear

Well ID: DW-3R | Sample Date: 10/15/2008 | Purge Begin: 7:55 | Sample Time: 8:45
Total Depth: 29.04 feet toc | Initial Depth to Water: 18.67 | Purge End: 8:21 | Set Intake: 25.50 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	7:57	19.80	7.14	1,059	15.1	2.37	-39	5	Clear
0.20	8:00	20.73	7.14	1,059	15.3	0.92	-32	4	Clear
0.25	8:03	21.12	7.16	1,055	15.4	0.77	-29	3	Clear
0.30	8:06	21.60	7.16	1,056	15.4	0.69	-23	4	Clear
0.35	8:09	22.12	7.17	1,053	15.5	0.71	-21	6	Clear
0.40	8:12	22.55	7.18	1,052	15.5	0.66	-15	7	Clear
0.45	8:15	22.83	7.19	1,051	15.6	0.78	-11	14	Clear
0.55	8:18	23.20	7.18	1,053	15.5	0.72	-15	18	Clear
0.65	8:21	23.40	7.18	1,057	15.2	0.80	-13	15	Clear

Well ID: MW-2R | Sample Date: 10/14/2008 | Purge Begin: 9:00 | Sample Time: 9:40
Total Depth: 17.74 feet toc | Initial Depth to Water: 15.25 | Purge End: 9:37 | Set Intake: 17.20 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	9:07	15.50	8.31	6,586	22.0	4.67	-329	19	Turbid-Yellow
0.20	9:10	15.65	8.75	6,706	22.2	3.03	-365	19	Turbid-Yellow
0.25	9:13	15.79	8.91	6,875	22.4	2.16	-377	106	Turbid-Yellow
0.30	9:16	15.91	9.46	6,624	22.6	1.94	-397	41	Turbid-Yellow
0.35	9:19	15.99	9.66	6,555	22.7	2.43	-404	32	Turbid-Yellow
0.40	9:22	16.15	9.81	6,513	22.7	3.25	-405	13	Turbid-Yellow
0.45	9:25	16.21	9.91	6,518	22.7	3.06	-407	10	Turbid-Yellow
0.50	9:28	16.29	9.61	6,703	22.7	2.14	-395	61	Turbid-Yellow
0.55	9:31	16.40	9.36	6,836	22.5	2.39	-385	57	Turbid-Yellow/Black
0.60	9:34	16.51	9.36	6,835	22.6	2.10	-384	84	Turbid-Yellow/Black
0.65	9:37	16.61	9.36	6,835	22.6	2.04	-386	90	Turbid-Yellow/Black

Note: Odor and sheen from purge water.

Well ID: MW-3DR | Sample Date: 10/14/2008 | Purge Begin: 9:09 | Sample Time 9:50
Total Depth: 35.43 feet toc | Initial Depth to Water: 14.55 | Purge End: 9:45 | Set Intake: 30.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	9:12	14.93	7.82	2,397	16.9	0.18	-223	7	Clear
0.20	9:15	14.90	7.43	2,565	17.3	0.39	-209	12	Clear
0.25	9:18	14.93	7.40	2,824	17.2	0.48	-198	3	Clear
0.30	9:21	14.95	7.35	2,962	17.2	0.44	-192	4	Clear
0.35	9:24	14.96	7.35	2,996	17.1	0.39	-182	2	Clear
0.40	9:27	14.96	7.34	3,005	17.1	0.43	-167	2	Clear
0.45	9:30	14.96	7.35	2,998	17.1	0.31	-180	1	Clear
0.50	9:33	14.96	7.39	2,998	17.2	0.38	-161	1	Clear
0.55	9:36	14.96	7.43	3,009	17.2	0.35	-165	1	Clear
0.60	9:39	14.96	7.47	3,008	17.2	0.29	-171	1	Clear
0.65	9:42	14.96	7.51	3,001	17.2	0.28	-172	1	Clear
0.70	9:45	14.96	7.52	2,993	17.3	0.30	-163	0	Clear

Note: Collected extra volume for MS/MSD. Purge water had odor.
NA = Not available - readings were not accurate

APPENDIX A

GROUNDWATER PURGING DATA - OCTOBER 14-15, 2008 and MAY 19, 2009

RG&E East Station Former MGP Site
Rochester, New York

Well ID: MW-4R | Sample Date: 10/15/2008 | Purge Begin: 7:38 | Sample Time: 8:20
Total Depth: 18.18 feet toc | Initial Depth to Water: 14.81 | Purge End: 8:16 | Set Intake: 16.50 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	7:43	15.06	12.14	4,538	16.0	NA	-394	24	Turbid-Yellow
0.20	7:46	15.27	12.20	4,616	16.9	4.89	-421	22	Turbid-Yellow
0.25	7:49	15.37	12.20	4,604	17.2	4.00	-426	24	Turbid-Yellow
0.30	7:52	15.45	12.21	4,600	17.1	3.25	-428	15	Turbid-Yellow
0.35	7:55	15.55	12.21	4,602	17.1	3.45	-428	15	Turbid-Yellow
0.40	7:58	15.63	12.21	4,601	17.1	3.30	-429	15	Turbid-Yellow
0.45	8:01	15.80	12.23	4,631	17.3	2.08	-430	14	Turbid-Yellow
0.50	8:04	15.90	12.26	4,658	17.1	2.02	-435	9	Turbid-Yellow
0.55	8:07	15.96	12.27	4,677	17.1	1.93	-435	13	Turbid-Yellow
0.60	8:10	16.01	12.29	4,703	17.0	1.89	-436	10	Turbid-Yellow
0.65	8:13	16.03	12.30	4,701	16.7	1.80	-436	11	Turbid-Yellow
0.70	8:16	16.10	12.32	4,710	16.6	1.79	-437	13	Turbid-Yellow

Note: Odor and sheen from purge water.

Well ID: MW-5R | Sample Date: 10/15/2008 | Purge Begin: 9:15 | Sample Time: 9:50
Total Depth: 31.22 feet toc | Initial Depth to Water: 18.89 | Purge End: 9:44 | Set Intake: 24.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	9:20	20.08	10.27	919	14.0	NA	-278	6	Clear
0.20	9:23	20.59	10.22	895	14.7	NA	-267	5	Clear
0.25	9:26	21.10	10.07	889	14.8	8.14	-262	4	Clear
0.30	9:29	21.50	9.99	881	15.1	3.84	-252	7	Clear
0.35	9:32	21.79	9.91	880	15.1	2.71	-254	6	Clear
0.40	9:35	22.00	9.93	879	15.1	2.22	-251	5	Clear
0.45	9:38	22.05	9.92	873	15.0	2.32	-257	6	Clear
0.50	9:41	22.05	9.91	872	14.8	2.30	-250	5	Clear
0.55	9:44	22.10	9.90	872	14.6	2.36	-250	5	Clear

Note: Noticed sheen in purge bucket, and in sample (8270). Tubing had NAPL staining on it towards the bottom and will need to be replaced for next sampling event.

Well ID: MW-8DR | Sample Date: 10/14/2008 | Purge Begin: 7:53 | Sample Time: 8:20
Total Depth: 38.63 feet toc | Initial Depth to Water: 20.60 | Purge End: 8:17 | Set Intake: 32.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	8:05	22.19	7.11	2,286	16.1	4.61	+68	33	Clear
0.20	8:08	22.60	7.14	2,262	16.3	3.86	-54	35	Clear
0.25	8:11	23.28	7.16	2,233	16.8	3.83	-116	40	Clear
0.30	8:14	23.66	7.18	2,220	16.8	3.84	-122	39	Clear
0.35	8:17	24.07	7.19	2,218	16.9	3.83	-125	40	Clear

Well ID: PZ-01R | Sample Date: 10/14/2008 | Purge Begin: 7:52 | Sample Time: 16:00
Total Depth: 22.46 feet toc | Initial Depth to Water: 21.70 | Purge End: 8:03 | Set Intake: 22.46 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	7:57	22.09	12.15	5,129	18.8	4.02	-361	44	Turbid-Light Brown
0.20	8:00	22.30	12.20	5,462	18.9	0.29	-299	36	Turbid-Light Brown

Note: Only VOC's were collected for sample. Attempted to collect 8270 and cyanide samples, but was unsuccessful due to insufficient recovery of well.

Well ID: RW-21 | Sample Date: 10/14/2008 | Purge Begin: 15:00 | Sample Time: 15:30
Total Depth: 22.21 feet toc | Initial Depth to Water: 11.09 | Purge End: 15:25 | Set Intake: 16.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	15:01	11.09	7.07	2,773	18.5	NA	-111	4	Clear
0.25	15:04	11.10	6.84	2,847	18.5	NA	-135	3	Clear
0.35	15:07	11.10	6.76	2,883	18.5	10.68	-137	3	Clear
0.45	15:10	11.10	6.72	2,911	18.5	5.71	-141	3	Clear
0.55	15:13	11.10	6.71	2,925	18.5	3.70	-146	3	Clear
0.65	15:16	11.10	6.70	2,933	18.5	3.62	-146	3	Clear
0.75	15:19	11.10	6.70	2,950	18.5	2.33	-140	3	Clear
0.85	15:22	11.10	6.68	2,973	18.5	2.43	-145	3	Clear
0.95	15:25	11.10	6.67	2,984	18.5	2.37	-145	3	Clear

Note: Odor from purge water.
NA = Not available - readings were not accurate

APPENDIX A

GROUNDWATER PURGING DATA - OCTOBER 14-15, 2008 and MAY 19, 2009

RG&E East Station Former MGP Site
Rochester, New York

Well ID: RW-22 Sample Date: 10/14/2008 Purge Begin: 14:58 Sample Time: 15:30
Total Depth: 24.12 feet toc Initial Depth to Water: 11.61 Purge End: 15:24 Set Intake: 17.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	15:00	11.63	6.59	4,270	18.6	0.85	-164	5	Clear
0.25	15:03	11.63	6.58	4,305	18.6	0.56	-166	3	Clear
0.35	15:06	11.63	6.59	4,332	18.6	0.37	-158	3	Clear
0.45	15:09	11.63	6.59	4,341	18.6	0.29	-150	3	Clear
0.55	15:12	11.63	6.59	4,359	18.6	0.22	-149	3	Clear
0.65	15:15	11.63	6.59	4,366	18.6	0.21	-162	3	Clear
0.75	15:18	11.63	6.59	4,373	18.6	0.18	-166	4	Clear
0.85	15:21	11.63	6.59	4,377	18.6	0.16	-173	4	Clear
0.95	15:24	11.63	6.59	4,383	18.6	0.15	-167	5	Clear

Note: Odor from purge water.

Well ID: RW-23 Sample Date: 10/14/2008 Purge Begin: 12:00 Sample Time: 12:50
Total Depth: 28.25 feet toc Initial Depth to Water: 16.05 Purge End: 12:44 Set Intake: 19.50 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	12:11	16.19	7.35	5,701	13.9	4.55	-204	7	Clear
0.25	12:14	16.19	7.30	5,666	13.7	4.11	-202	7	Clear
0.35	12:17	16.19	7.29	5,636	13.6	5.54	-225	12	Clear
0.45	12:20	16.19	7.36	5,473	13.9	6.15	-264	12	Clear
0.55	12:23	16.19	7.32	5,470	13.8	6.20	-230	7	Clear
0.65	12:26	16.19	7.31	5,308	13.9	3.25	-210	7	Clear
0.75	12:29	16.19	7.32	5,215	14.0	2.82	-209	7	Clear
0.85	12:32	16.19	7.35	5,029	14.0	2.80	-200	11	Clear
0.95	12:35	16.19	7.36	4,918	14.1	3.16	-211	11	Clear
1.05	12:38	16.19	7.38	4,714	14.1	3.05	-206	4	Clear
1.15	12:41	16.19	7.41	4,628	14.0	3.01	-201	3	Clear
1.25	12:44	16.19	7.43	4,521	14.1	3.08	-198	9	Clear

Note: Odor from purge water.

Well ID: TPMW-1 Sample Date: 10/14/2008 Purge Begin: 13:50 Sample Time 14:20
Total Depth: 27.05 feet toc Initial Depth to Water: 19.40 Purge End: 14:13 Set Intake: 19.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	13:52	19.70	6.89	5,240	15.6	0.87	-101	5	Clear
0.20	13:55	19.79	6.89	5,265	15.3	0.43	-93	7	Clear
0.25	13:58	19.91	6.90	5,280	15.2	0.41	-87	5	Clear
0.30	14:01	19.97	6.91	5,285	15.0	0.41	-84	5	Clear
0.35	14:04	20.03	6.93	5,251	15.0	0.32	-97	4	Clear
0.40	14:07	20.12	6.95	5,195	14.9	0.34	-93	4	Clear
0.45	14:10	20.17	6.96	5,169	14.9	0.37	-93	4	Clear
0.50	14:13	20.19	6.97	5,126	14.9	0.32	-97	3	Clear

Well ID: TPMW-2 Sample Date: 10/14/2008 Purge Begin: 13:45 Sample Time: 14:10
Total Depth: 25.14 feet toc Initial Depth to Water: 17.46 Purge End: 14:00 Set Intake: 18.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.15	13:48	17.46	9.31	1,229	16.3	7.76	-217	72	Clear
0.20	13:51	17.47	9.31	1,224	15.8	3.81	-216	53	Clear
0.25	13:54	17.47	9.27	1,218	15.9	2.90	-218	39	Clear
0.30	13:57	17.47	9.24	1,213	15.9	2.70	-216	30	Clear
0.35	14:00	17.47	9.21	1,203	15.8	2.84	-217	22	Clear

Well ID: DW-1R Sample Date: 5/19/09 Purge Begin: 10:20 Sample Time: 10:35
Total Depth: 35.18 feet toc Initial Depth to Water: 10.26 Purge End: 10:32 Set Intake: 28.50

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	10:20	11.00	7.87	3.01	16.8	NA	-110	188	Not Recorded
0.29	10:23	11.00	8.01	3.00	16.3	NA	-118	129	Not Recorded
0.41	10:26	11.00	8.05	3.00	15.9	NA	-121	130	Not Recorded
0.53	10:29	11.00	8.07	3.01	15.8	NA	-122	134	Not Recorded
0.65	10:32	11.00	8.07	3.02	15.7	NA	-125	130	Not Recorded

Note: Coal tar odor, air bubbles in flow through cell due to peristaltic pump action.
NA = Not available - readings were not accurate

APPENDIX A

GROUNDWATER PURGING DATA - OCTOBER 14-15, 2008 and MAY 19, 2009

RG&E East Station Former MGP Site
Rochester, New York

Well ID: DW-3R | Sample Date: 5/19/09 | Purge Begin: 11:28 | Sample Time: 11:55
Total Depth: 29.00 feet toc | Initial Depth to Water: 15.97 | Purge End: 11:50 | Set Intake: 25.5 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	11:28	16.40	8.26	0.13	13.2	NA	-187	72	Clear
0.29	11:31	16.40	8.13	0.12	12.9	NA	-190	40	Clear
0.41	11:34	16.40	8.10	0.12	12.8	NA	-189	42	Clear
0.53	11:38	16.40	8.09	0.12	12.8	NA	-189	62	Clear
0.65	11:42	16.40	8.09	0.12	13.2	NA	-194	37	Clear
0.77	11:45	16.40	8.08	0.12	13.4	NA	-196	42	Clear
0.88	11:50	16.40	8.08	0.12	13.4	NA	-196	47	Clear

Note: Clear, coal tar odor.

Well ID: MW-3DR | Sample Date: 5/19/09 | Purge Begin: 10:16 | Sample Time 10:30
Total Depth: 35.40 feet toc | Initial Depth to Water: 10.26 | Purge End: 10:31 | Set Intake: 30.00

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	10:16	10.64	8.30	0.29	14.6	NA	-79	40	Brown
0.29	10:19	10.64	8.07	0.40	14.6	NA	-163	26	Brown
0.41	10:22	10.64	7.97	0.41	14.7	NA	-178	27	Brown
0.53	10:25	10.64	7.91	0.42	14.8	NA	-189	25	Brown
0.65	10:28	10.64	7.87	0.43	14.9	NA	-199	20	Brown
0.77	10:31	10.64	7.83	0.45	15.0	NA	-200	27	Brown

Note: Coal tar odor, brown water, air bubbles noted in flow through cell.

Well ID: MW-5R | Sample Date: 5/19/09 | Purge Begin: 12:08 | Sample Time: 12:30
Total Depth: 31.16 feet toc | Initial Depth to Water: 17.93 | Purge End: 12:29 | Set Intake: 24.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	12:08	17.20	7.45	2.92	14.4	NA	-112	158	Clear
0.29	12:11	17.20	7.11	2.90	14.5	NA	-114	176	Clear
0.41	12:14	17.20	7.11	2.90	14.4	NA	-114	175	Clear
0.53	12:17	17.20	7.05	2.86	14.4	NA	-117	63.5	Clear
0.65	12:20	17.20	7.01	2.84	14.5	NA	-119	56.5	Clear
0.77	12:23	17.20	7.00	2.82	14.6	NA	-120	50.3	Clear
0.88	12:26	17.20	7.00	2.81	14.9	NA	-120	48.9	Clear
1.00	12:29	17.20	7.00	2.81	14.9	NA	-120	48.2	Clear

Note: Clear, coal tar-type odor, NAPL coats tubing, air bubbles in line due to pump action.

Well ID: MW-8DR | Sample Date: 5/19/09 | Purge Begin: 13:32 | Sample Time: 13:50
Total Depth: 36.60 feet toc | Initial Depth to Water: 18.16 | Purge End: 13:47 | Set Intake: 32.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	13:32	18.76	7.13	2.98	15.7	NA	-127	130	Clear
0.29	13:35	18.76	7.10	2.94	15.1	NA	-137	106	Clear
0.41	13:38	18.76	7.10	2.90	15.1	NA	-143	110	Clear
0.53	13:41	18.76	7.11	2.80	14.9	NA	-152	100	Clear
0.65	13:44	18.76	7.11	2.79	15.0	NA	-160	105	Clear
0.77	13:47	18.76	7.14	2.71	15.0	NA	-165	99.8	Clear

Note: Clear, slight coal tar-type odor, air bubbles in line due to pump action.

Well ID: TPMW-1 | Sample Date: 5/19/2009 | Purge Begin: 8:47 | Sample Time: 9:00
Total Depth: 27.02 feet toc | Initial Depth to Water: 18.17 | Purge End: 8:59 | Set Intake: 22.0 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	8:47	20.00	7.44	0.42	10.2	NA	-106	19	Clear
0.29	8:50	20.00	7.48	0.42	10.2	NA	-110	18	Clear
0.41	8:53	20.00	7.52	0.41	10.2	NA	-115	19	Clear
0.53	8:56	20.00	7.54	0.41	10.1	NA	-118	24	Clear
0.65	8:59	20.00	7.57	0.41	10.3	NA	-122	23	Clear

Note: Clear, slight coal tar-type odor.

Well ID: TPMW-2 | Sample Date: 5/19/09 | Purge Begin: 8:57 | Sample Time: 9:20
Total Depth: 25.07 feet toc | Initial Depth to Water: 15.72 | Purge End: 9:09 | Set Intake: 21.00 feet toc

Purge Volume (Gallons)	Time	Water Level (feet toc)	pH (SU)	Conductivity (µS/cm)	Temperature (° C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color
0.17	8:57	16.18	7.77	1.21	11.4	NA	-123	288	Yellow
0.29	9:00	16.18	7.87	1.21	11.4	NA	-123	200	Yellow
0.41	9:03	16.18	7.80	1.21	11.3	NA	-123	192	Yellow
0.53	9:06	16.18	7.83	1.21	11.3	NA	-124	176	Yellow
0.65	9:09	16.18	7.81	1.21	11.3	NA	-124	181	Yellow

Note: Yellow, slight coal tar-type odor, air bubbles in flow through cell due to peristaltic pump action.
NA = Not available - readings were not accurate