Annual Summary Report

SUMMARY REPORT FOR THE SPRING 2012 GROUNDWATER MONITORING EVENT

Former Carborundum Company, Hyde Park Facility (Site No. 932036)

Town of Niagara, Niagara County, NY

SUBMITTED TO:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF HAZARDOUS WASTE REMEDIATION

SUBMITTED BY:

Atlantic Richfield Company

A BP affiliated company

4850 East 49th Street
Cuyahoga Heights, Ohio 44125

PREPARED BY:

PARSONS

40 La Riviere Drive, Suite 350
Buffalo, New York 14202

SEPTEMBER 2012

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September 10, 2012

Michael J. Hinton P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Ave.
Buffalo, NY 14203-2999

Re: Carborundum Globar, Site No. 932036
Town of Niagara, Niagara County
Spring 2012 Annual Monitoring Report

Dear Mr. Hinton:

Enclosed is the Spring 2012 Annual Monitoring Report, containing results of sampling conducted in June 2012. If you have any questions regarding this report, feel free to contact William Barber at (216) 271-8038.

Sincerely,

Mark S. Raybuck

Mark Raybuck
Project Manager

cc: W. Barber (Atlantic Richfield)

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SECTION 1
INTRODUCTION

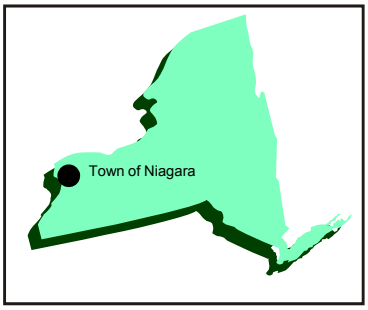
This annual report summarizes the groundwater monitoring activities completed at the Former Carborundum Company Hyde Park Facility (Site) in the Town of Niagara, New York (Figure 1.1). Groundwater sampling was completed from June 11 to June 25, 2012. This report provides the results from the recent Spring 2012 sampling event data, with a comparison to previous results. The ongoing annual groundwater monitoring is conducted on an alternating spring/fall schedule, and includes the collection of groundwater samples for the analysis of volatile organic compounds (VOCs) and natural attenuation parameters.

This work was completed in accordance with the groundwater monitoring work plan (DE&S, 2000a) for Operable Unit 2 (OU2), approved by the New York State Department of Environmental Conservation (NYSDEC), correspondence from NYSDEC dated September 28, 2005 (NYSDEC 2005), and the letter to NYSDEC dated May 11, 2012.

This event was conducted in conjunction with the 6-month performance sampling event to evaluate the performance of a vegetable oil substrate injection that was performed in November and December 2011. The 6-month sampling event results will be presented in more detail under separate cover. The scope of work for the Spring 2012 groundwater monitoring event included:

- Collection of water level measurements from overburden and bedrock monitoring wells;
- Purging of overburden and bedrock monitoring wells and collecting field measurements of pH, temperature, specific conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO), total dissolved solids (TDS), and turbidity;
- Collection of groundwater samples from monitoring wells for VOC analyses; and
- Collection of groundwater samples from selected overburden and bedrock monitoring wells for analysis of natural attenuation parameters.

A Site location map is provided as Figure 1.1, and a Site Plan is included as Figure 1.2.



New York

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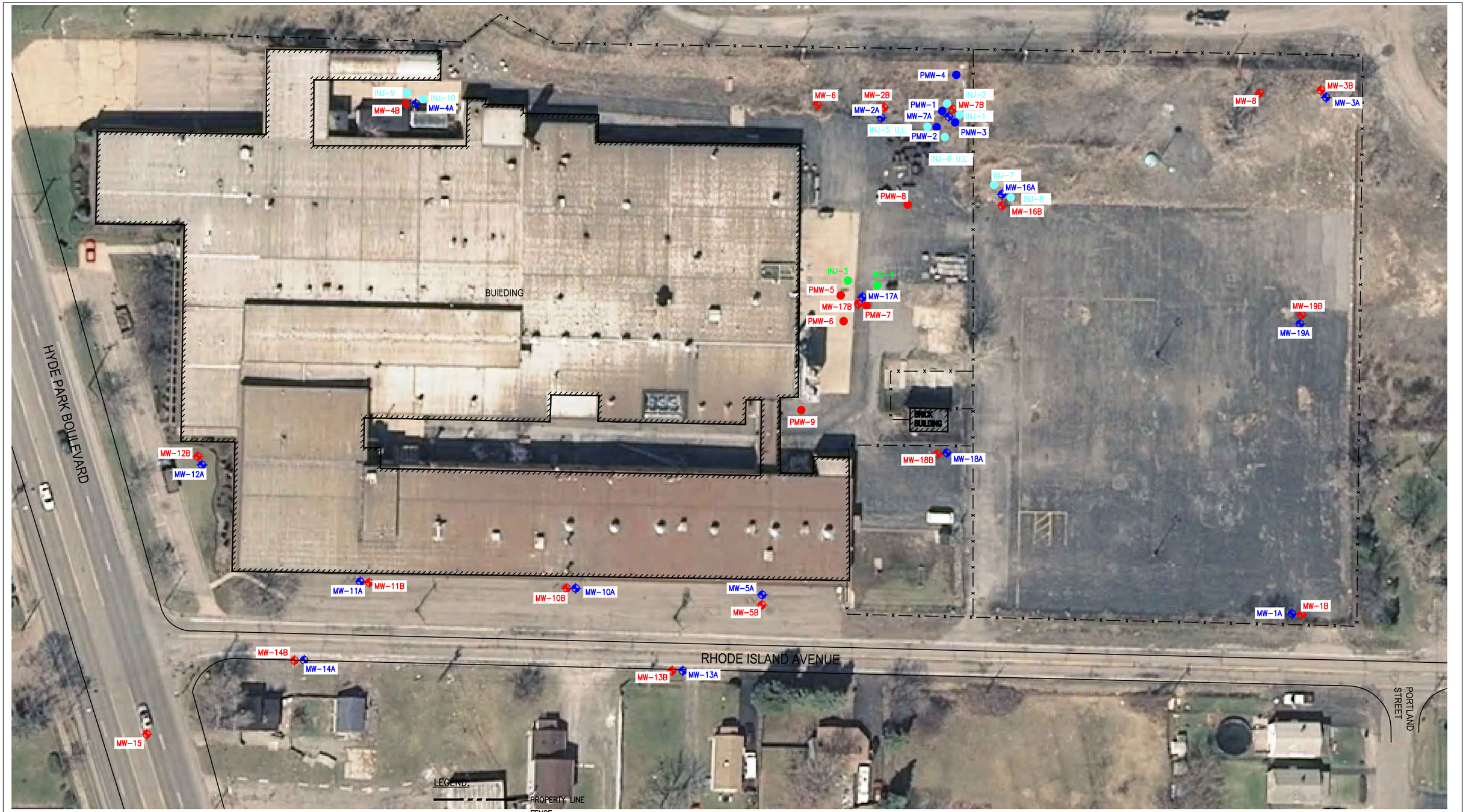
FIGURE 1.1

FORMER CARBORUNDUM CO.
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

SITE LOCATION MAP

PARSONS
40 La Riviere Dr., Suite 350, Buffalo, NY 14202

SOURCE: live.local.com



LEGEND:

PROPERTY LINE	
FENCE	
MW-5A	BEDROCK MONITORING WELL LOCATION
PMW-1	BEDROCK PERFORMANCE MONITORING WELL LOCATION
INJ-1	BEDROCK INJECTION WELL LOCATION
MW-5B	OVERBURDEN MONITORING WELL LOCATION
PMW-1	OVERBURDEN PERFORMANCE MONITORING WELL LOCATION
INJ-1	OVERBURDEN INJECTION WELL LOCATION

SOURCE: INTERA, 2006

HORIZONTAL DATUM: NAD83/96 NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

60 40 20 0 60

SCALE IN FEET

N

FIGURE 1.2

FORMER CARBORUNDUM COMPANY
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

SITE PLAN

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

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SECTION 2
PROGRAM METHODOLOGY

The groundwater monitoring program included water level monitoring, groundwater sampling from wells, and submission of groundwater samples for analysis of VOCs. Samples from six monitoring well couplets (locations with overburden and bedrock monitoring wells) were also analyzed for natural attenuation parameters. Quality assurance/quality control (QA/QC) samples, including two field duplicates, one matrix spike/matrix spike duplicate sample and six trip blanks were also collected and submitted for analysis (Appendix A).

In September 2008, an *in situ* bioremediation pilot test was initiated, which featured the addition of vegetable oil-based substrate into the overburden groundwater. In November 2009, a similar injection was conducted in bedrock groundwater and in the overburden. These data were presented in a separate deliverable to the NYSDEC (Parsons, 2009). An additional round of injections into the overburden groundwater at three separate locations on the site was conducted in November and December, 2011. A more detailed assessment of bioremediation performance after this injection event and subsequent monitoring events will be reported separately from this annual monitoring event report.

2.1 WATER LEVEL MONITORING

Water level monitoring was conducted on June 11, 2012. Water levels were measured relative to the top of the inner well casing using an electronic water level tape accurate to 0.01 ft. The depth to water was measured in each well from a surveyed point on the casing. The water levels were then converted to elevations presented as feet above mean sea level (ft AMSL, NAVD 88 datum). The groundwater elevations were used to construct groundwater elevation contour maps in both the overburden and bedrock zones.

2.2 GROUNDWATER SAMPLING AND ANALYSIS

The locations of the monitoring wells are shown in Figure 1.2. Wells were sampled following the methodology outlined in the groundwater monitoring work plan (DE&S, 2000a), and subsequent correspondence with NYSDEC. A list of wells, dates sampled, sample IDs, and purge volumes is provided in Table 2.1. A copy of the groundwater sampling logs is provided in Appendix B.

During purging, groundwater was monitored for pH, specific conductivity, turbidity, DO, temperature, TDS, and ORP. An aliquot of the groundwater sample was tested in the field for ferrous iron, carbon dioxide, hydrogen sulfide, and alkalinity, using Hach^{tm} test kits.

Following collection, the samples were packed in ice and shipped via overnight delivery to an approved laboratory in accordance with chain-of-custody procedures. Groundwater sample analyses were performed by Lancaster Laboratories, Inc. (LLI) in Lancaster, PA. Table 2.2 provides a summary of sample collection and analysis specifications for each analysis type including sample containers, preservation methods, analytical methods, and other information.

In addition to monitoring concentrations of chlorinated VOCs (PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, vinyl chloride, and chloroethane), several wells were selected for the monitoring of natural attenuation evaluation parameters, consisting of methane, ethane, ethene, propane, chloride, sulfate, total organic carbon, biochemical oxygen demand, chemical oxygen demand, dissolved iron, nitrate, nitrite, and sulfide. The six well clusters chosen for these additional analyses are located along the groundwater flow path in upgradient, cross-gradient, and downgradient locations and in source areas. The well couplets selected for natural attenuation monitoring included MW-5, MW-7, MW-10, MW-16, MW-17, and MW-18.

Purge water and decontamination water were contained and staged in containment tanks for disposal. Following receipt of sample results, the water was disposed off in the sanitary sewer under a permit with the Niagara Falls Water Board.

Table 2.1
Summary of Groundwater Sampling
Spring 2012 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well ID	Date Sampled	Sample ID	Volume Purged (gallons)
MW-2B	13-Jun-12	MW-2B_061312	2.50
MW-4A	12-Jun-12	MW-4A_061212	3.30
MW-5A	12-Jun-12	MW-5A_061212	4.00
MW-5B	13-Jun-12	MW-5B_061312	3.00
MW-6	13-Jun-12	MW-6_061312	2.50
MW-7A	14-Jun-12	MW-7A_061412	5.00
MW-7B	14-Jun-12	MW-7B_061412, MS, MSD	8.00
MW-8	12-Jun-12	MW-8_061212	2.25
MW-10A	13-Jun-12	MW-10A_061312	2.50
MW-10B	14-Jun-12	MW-10B_061412	2.75
MW-11B	14-Jun-12	MW-11B_061412, DUP_061412	1.50
MW-12A	13-Jun-12	MW-12A_061312	3.00
MW-12B	13-Jun-12	MW-12B_061312	2.50
MW-13B	13-Jun-12	MW-13B_061312	2.75
MW-14B	13-Jun-12	MW-14B_061312	2.60
MW-15	14-Jun-12	MW-15_061412	1.50
MW-16A	14-Jun-12	MW-16A_061412	1.00
MW-16B	13-Jun-12	MW-16B_061312, DUP_061312	3.50
MW-17A	12-Jun-12	MW-17A_061212	3.00
MW-17B	12-Jun-12	MW-17B061212	4.50
MW-18A	12-Jun-12	MW-18A_061212	2.50
MW-18B	12-Jun-12	MW-18B_061212	2.00
MW-19B	12-Jun-12	MW-19B_061212	3.00

Table 2.2
Summary of Sample and Analytical Specifications
Spring 2012 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Sample Type	Container Type	Sample Volume	Preservation Method	Max. Holding Time	Analytical Method
Volatile Organic Compounds					
VOCs	40mL glass vial with septum top	3x40 mL	Hydrochloric acid, Cool 4°C	7days	USEPA Method 8260B
Natural Attenuation Parameters					
Methane, Ethene, Ethane, Propane	40mL glass vial with septum top	2x40 mL	Hydrochloric acid, Cool 4°C	7 days	USEPA RSK175
TOC	40mL glass vial with septum top	2x40 mL	Phosphoric acid, Cool 4°C	7 days	USEPA 5310C
BOD	500mL plastic	500 mL	None	48 hrs	USEPA 5120B
COD	120 mL plastic	120 mL	Sulfuric acid	28 days	USEPA 410.4
Bromide	40mL glass vial with septum top	2x40 mL	None	28 days	USEPA 300.1
Dissolved Iron	500mL plastic	500 mL	None	6 months	USEPA 6010B
Dissolved Inorganics	500mL plastic	500 mL	None	6 months	USEPA 6010B
Chloride	40mL glass vial with septum top	2x40 mL	None	28 days	USEPA 300.1
Nitrate	40mL glass vial with septum top	40 mL	Sulfuric acid	48 hours	USEPA 353.2
Nitrite	40mL glass vial with septum top	40 mL	None	28 days	USEPA 354.1
Sulfate	40mL glass vial with septum top	2x40 mL	None	28 days	USEPA 300.1
Sulfide	250 mL plastic	250 mL	Sodium hydroxide and zinc acetate	7 days	Standard Method 204500

SECTION 3
GROUNDWATER MONITORING PROGRAM SUMMARY

3.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTIONS

A summary of the groundwater elevations for the Spring 2012 event is provided in Table 3.1. Table 3.1 also includes location coordinates, top of casing and ground surface elevations for the monitoring wells.

Groundwater in the overburden monitoring wells was measured at depths between 2.51 and 10.45 feet below ground surface (bgs). An overburden groundwater contour map was developed based on the June 11, 2012 water levels (Figure 3.1). The overburden groundwater flow direction is to the southwest, towards Hyde Park Boulevard and Rhode Island Avenue, consistent with historical data.

Groundwater in the bedrock monitoring wells was measured at depths between 3.13 and 11.39 feet bgs. A bedrock groundwater potentiometric surface contour map was developed based on the June 11, 2012 water levels (Figure 3.2). Consistent with historical observations of groundwater flow, the bedrock groundwater flow direction is west/southwesterly towards Hyde Park Boulevard and Rhode Island Avenue.

3.2 GROUNDWATER SAMPLING RESULTS

Field measurements collected for the Spring 2012 sampling event are provided in Table 3.2. Summaries of the chlorinated VOCs and natural attenuation parameter results are included in Table 3.3. The complete analytical data results are included as Appendix C.

3.2.1 VOC Results

Groundwater samples from 23 groundwater monitoring wells (8 overburden, 15 bedrock) were collected and analyzed for the presence of VOCs. Overall, with the exception of the current results from MW-16B, concentrations of these VOCs have decreased or remained stable since 2000. Reductions are due to natural attenuation and enhanced biodegradation that included three rounds of vegetable oil substrate injections in 2008, 2009, and 2011. Figures 3.3, 3.4, and 3.5 are examples that show long-term trends for two overburden and four bedrock wells at the Site. The time-series plots typically show gradual decreasing historical trends in TCE and DCE and in some cases stable trends, followed by significant decreases in concentrations following injection events. Additional time series plots will be presented for other wells in the 6-month performance monitoring report that will be submitted under separate cover.

Overburden Results: Figure 3.6 shows a summary of the overburden well analytical results from the Spring 2012 sampling event, and from several previous events. The results for the eight overburden groundwater samples were generally consistent with previous rounds of monitoring and long-term trends. Key observations are listed below.

- Overall, concentrations across the Site continued to decrease or remain steady.

- Concentrations of DCE, DCA, and VC in MW-7A are significantly less than historical levels and are typically at or below the analytical detection limits during the June 2012 sampling event. MW-7A is in the area of the vegetable oil substrate injections (September 2008, November 2009, and November 2011).

- Concentrations of VOCs in MW-4A and MW-16A decreased from 2011 to 2012. These two areas were targeted in the November 2011 injection event.

- TCE was sporadically detected in the overburden (four of eight wells) at low concentrations ranging between 1.2 and 21 µg/L.

- MW-5A shows sporadic increases and decreases in DCE and VC both prior to and after substrate injections. DCE in MW-5A increased from 5.7 µg/L to 88 µg/L between October 2011 and June 2012, while VC increased from 3.3 µg/L to 82 µg/L during the same time period. The DCE concentration in MW-5A in 2011 and 2012 is lower than its concentration in May 2010.

- The highest concentrations TCE breakdown products were detected in the samples from well MW-10A (DCE), located south of the building.

Bedrock Results: Figure 3.7 shows a summary of the bedrock well VOC analytical results from the Spring 2012 sampling and several previous events.

- The VOC results for the bedrock groundwater samples were generally consistent with recent decreasing VOC concentration trends and previous results, with the exception of MW-16B.

- Downgradient monitoring wells MW-15, MW-14B, MW-11B, and MW-12 B all show significant recent reductions in TCE, DCE, and VC relative to concentrations measured prior to bioremediation injections.

- For the past three years, DCE concentrations in MW-17B (20.8 µg/L in 2012) have remained appreciably lower than historical concentrations

(282 µg/L in 2009). MW-17B is located within the area of the bedrock vegetable oil substrate pilot test injection (November 2009).

- DCE concentrations at MW-10B consistently ranged from 180 µg/L to 370 µg/L from 2007 to 2010 before increasing to 960 µg/L in 2011. Sampling results from June 2012 show that DCE concentrations have decreased to 280 µg/L, which is consistent with recent historical values.

- TCE was non-detect in all wells, except MW-16B (75 µg/L). TCE, DCE, VC, and DCA concentrations all increased in MW-16B in 2012. Based on the historical concentrations of this well, additional data will need to be collected to evaluate whether this is a trend or an anomaly in the data. The well is scheduled to be sampled again as part of the 12-month performance monitoring event.

3.2.2 Attenuation Monitoring Results

As part of the ongoing groundwater monitoring program, natural attenuation parameters were sampled during each monitoring event (see Table 3.3). The results for 2012 were generally consistent with previous monitoring events. The environmental conditions and site-wide long-term changes in concentrations indicate that natural attenuation and enhanced biodegradation are ongoing, active processes.

More detail regarding attenuation monitoring and the effects of the September 2008, November 2009, and November/December 2011 substrate injections will be presented in separate reports (6-month monitoring report and 12-month monitoring report).

3.3 DATA VALIDATION

Analytical results from June 11, 2012 through June 25, 2012 samples were reviewed by Parsons for usability with respect to the following requirements:

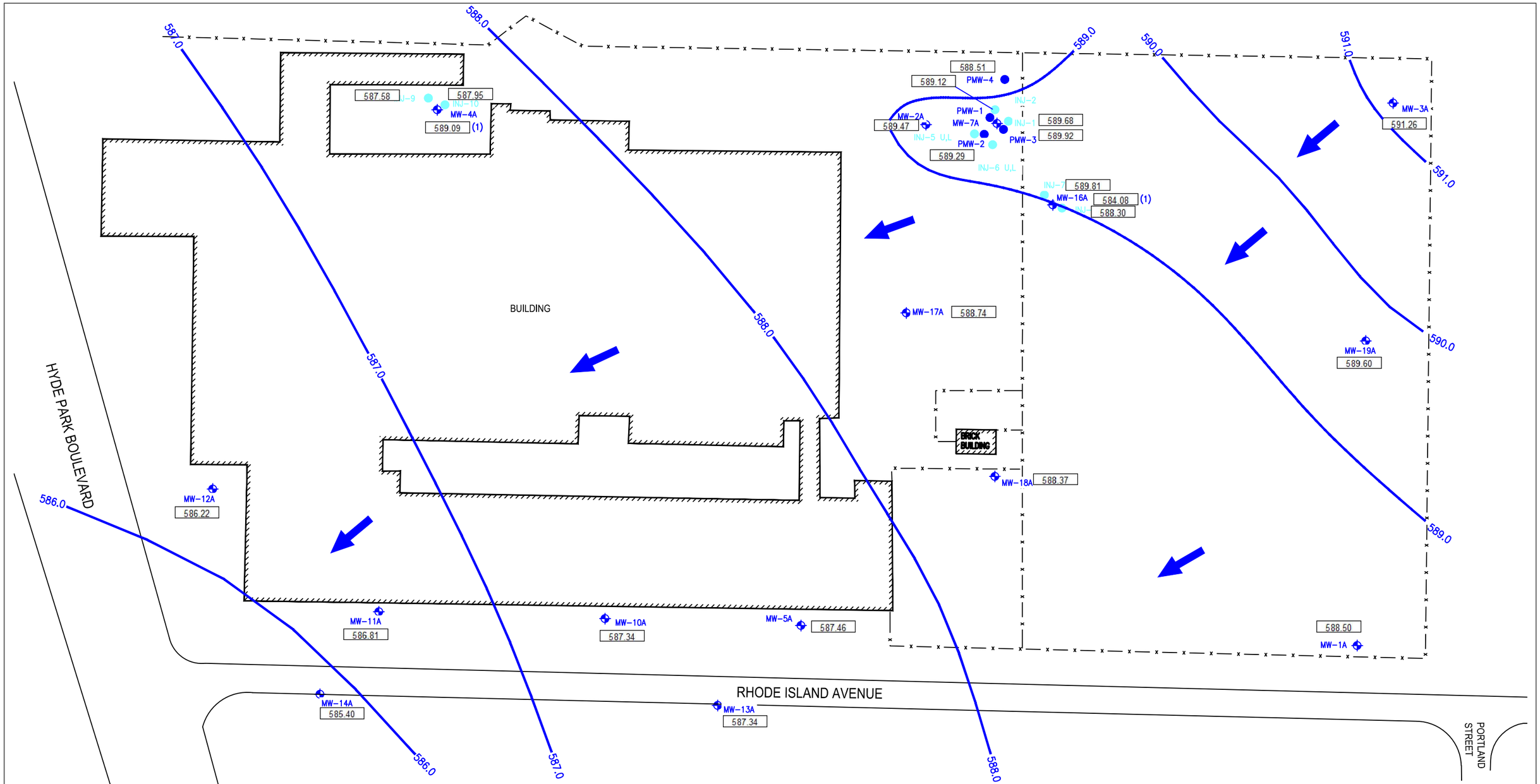
- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs).

The analytical laboratory for this project was Eurofins/Lancaster Laboratories. This laboratory is approved to conduct project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

The data submitted by the laboratory have been reviewed and validated. The analytical data were found to be acceptable in terms of deliverable

completeness, accuracy, precision, representativeness, completeness and comparability. Data validation was performed for in accordance with the most current editions of the USEPA Region II SOPs and the NYSDEC ASP for organic and inorganic data review.

A copy of the data usability summary report (DUSR) for groundwater samples is included in Appendix A.



LEGEND:

- PROPERTY LINE
- FENCE
- MW-5B — OVERBURDEN MONITORING WELL LOCATION
- PMW-1 — OVERBURDEN PERFORMANCE MONITORING WELL LOCATION
- INJ-1 — OVERBURDEN INJECTION WELL LOCATION
- 587.53 — GROUNDWATER ELEVATION (FT-AMSL)
- (1) — DID NOT USE TO CREATE CONTOURS (ANOMALOUS READING)
- 587.0 — EQUIPOTENTIAL CONTOUR LINE (1.0 FT. CONTOUR INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

SOURCE: INTERA, 2006

HORIZONTAL DATUM: NAD83/96 NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

60 40 20 0 60
SCALE IN FEET

NOTE: MW-4A AND MW-16A WERE ANOMALOUS AND NOT USED IN THE CONTOURING

FIGURE 3.1

FORMER CARBORUNDUM COMPANY
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

OVERBURDEN GROUNDWATER ELEVATIONS
JUNE 2012

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

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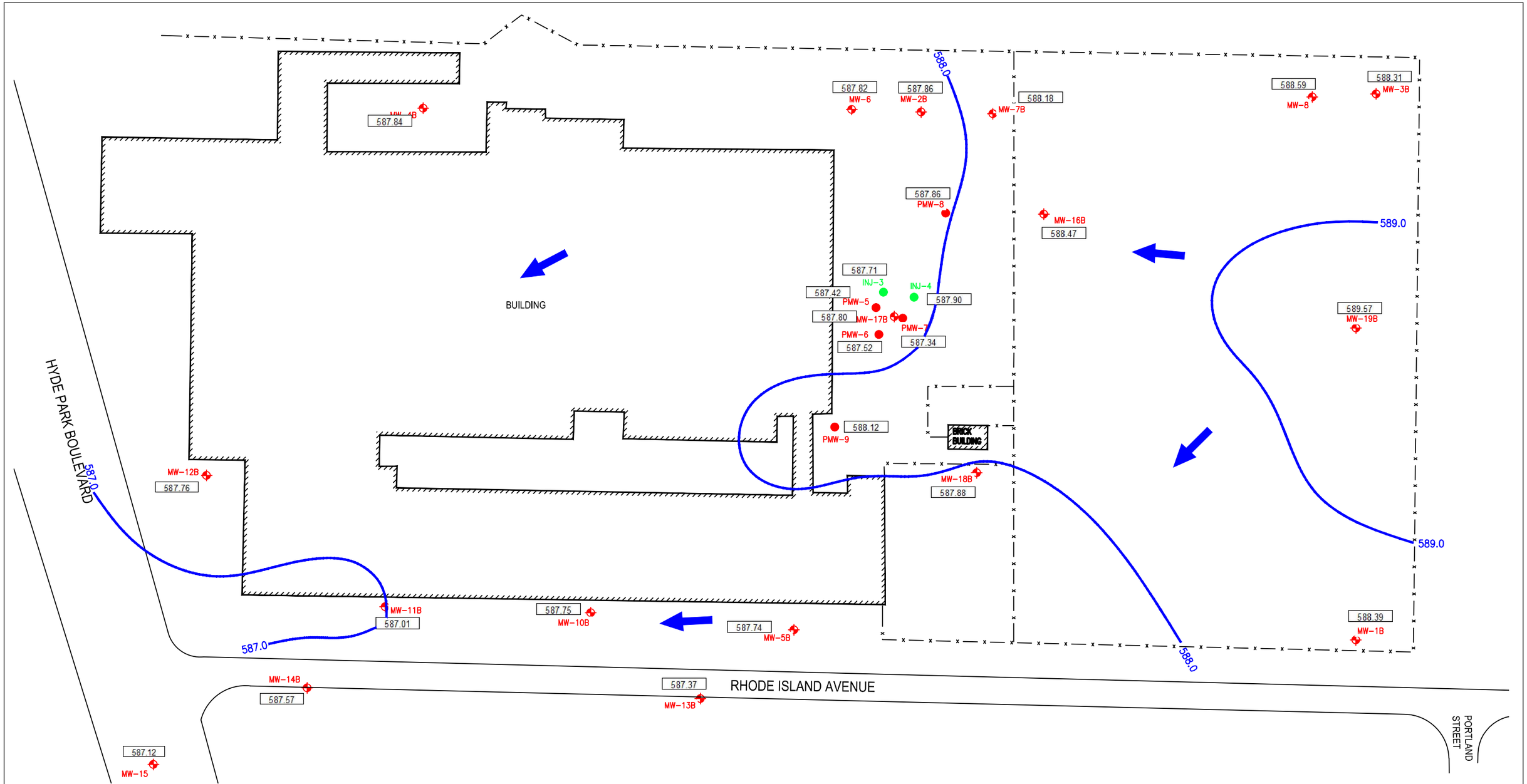


LEGEND:

- PROPERTY LINE
- FENCE
- MW-5A — BEDROCK MONITORING WELL LOCATION
- PMW-1 — BEDROCK PERFORMANCE MONITORING WELL LOCATION
- INJ-1 — BEDROCK INJECTION WELL LOCATION
- 587.46 — GROUNDWATER ELEVATION (FT-AMSL)
- 587.5 — EQUIPOTENTIAL CONTOUR LINE (1.0 FT. CONTOUR INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

SOURCE: INTERA, 2006

HORIZONTAL DATUM: NAD83/96 NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

60 40 20 0 60
SCALE IN FEET

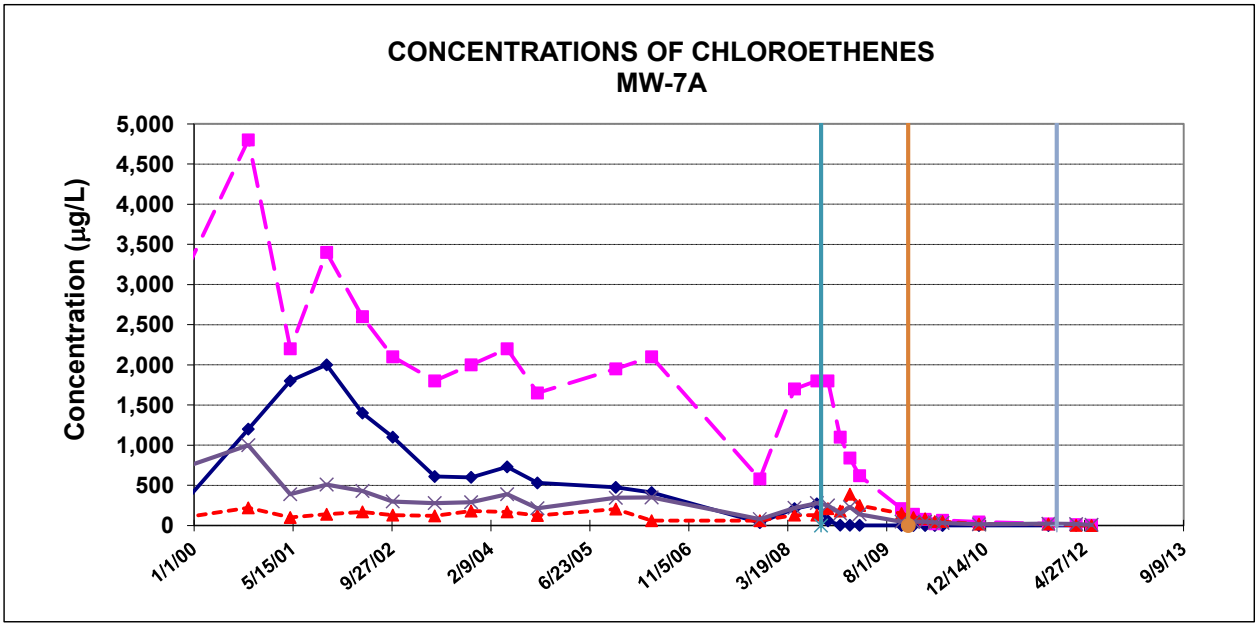
\buffs01\p:\hyde park\445335\CAD\BP(HydePark)-06.dwg 8/4/10

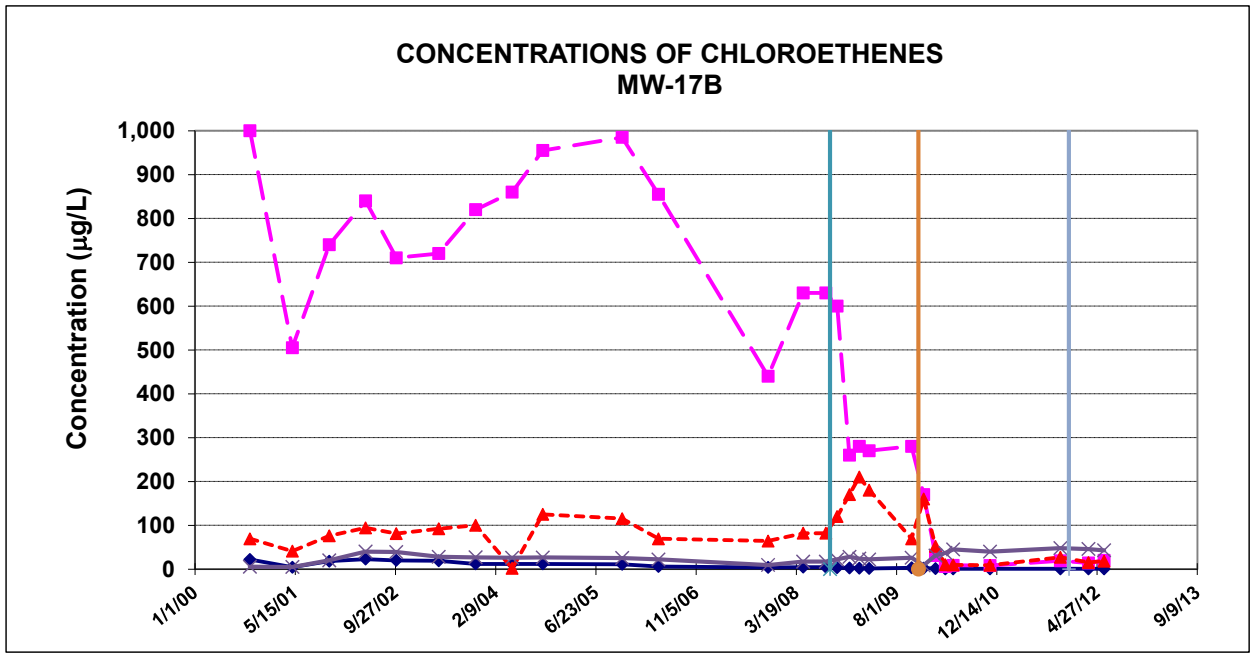
FIGURE 3.2

FORMER CARBORUNDUM COMPANY
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

BEDROCK GROUNDWATER ELEVATIONS JUNE 2012

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730





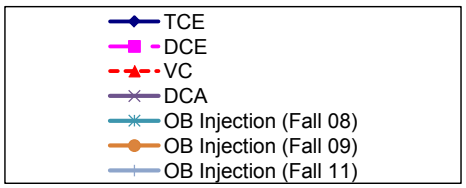


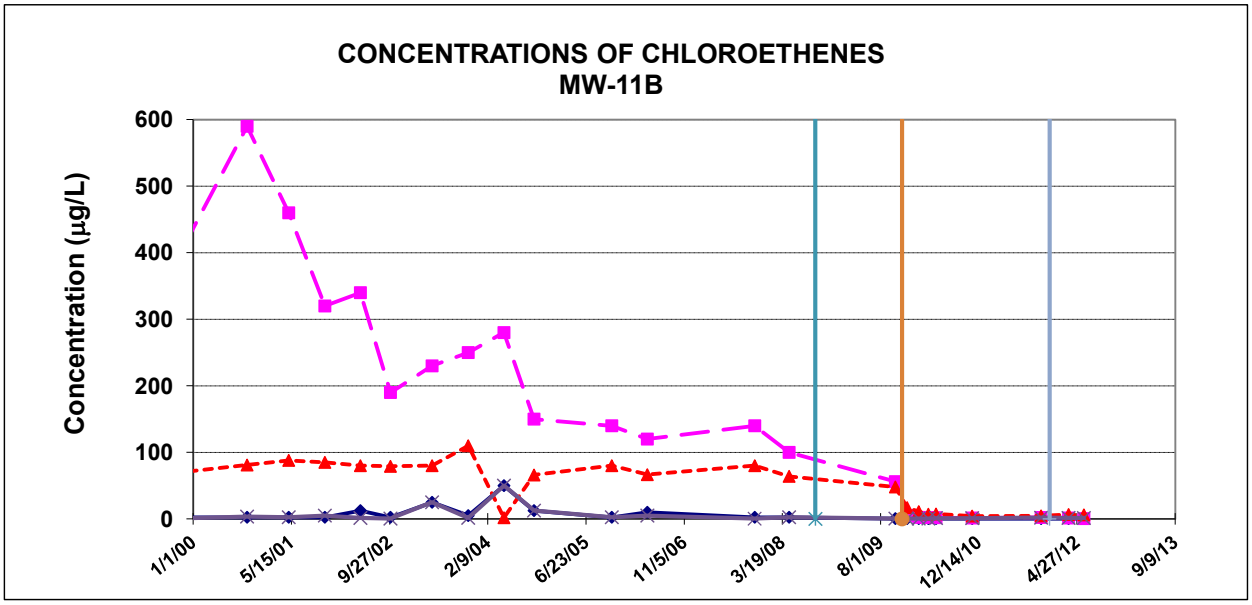
FIGURE 3.3

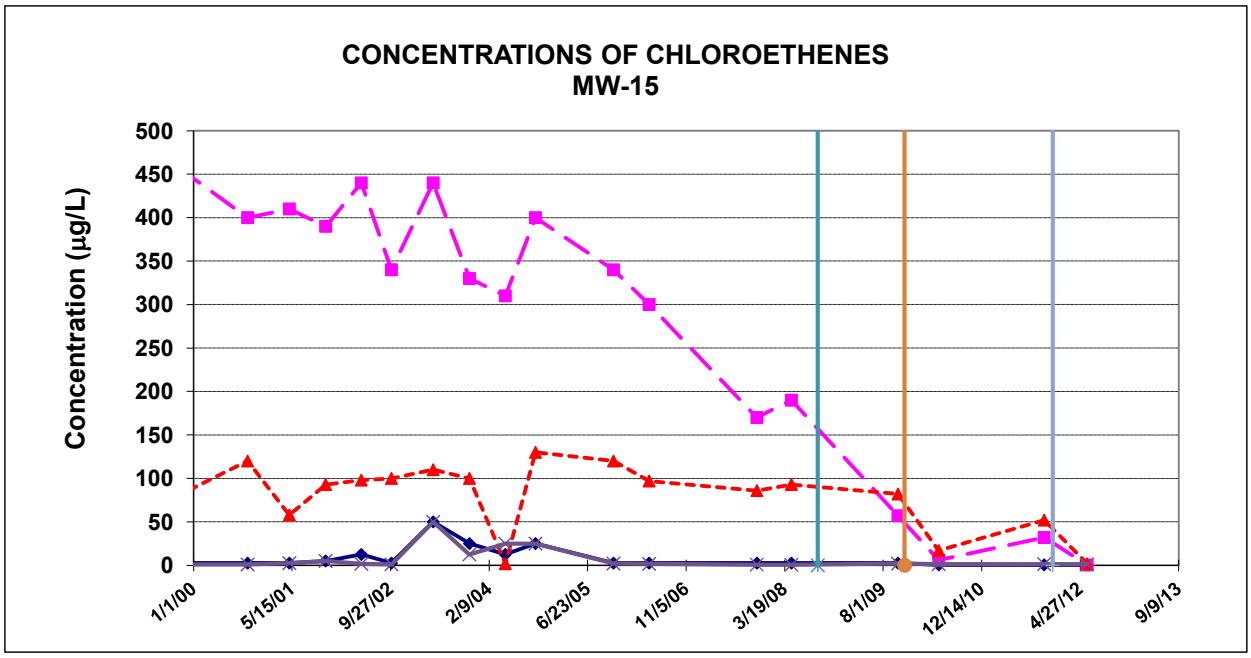
FORMER CARBORUNDUM COMPANY

LONG TERM TRENDS OF CHLORINATED ETHENES IN WELLS MW-7A AND MW-17B

PARSONS

40 La Riviere Dr., Suite 350, Buffalo NY 14222





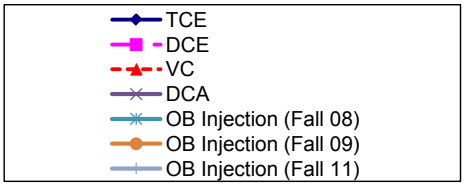


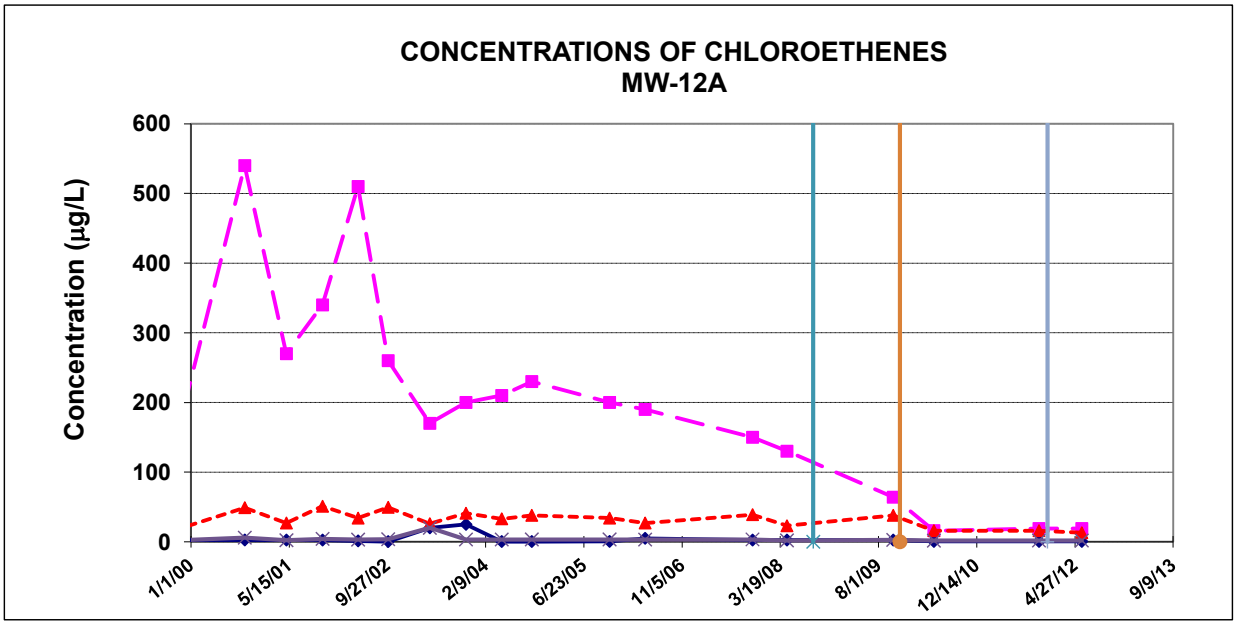
FIGURE 3.4

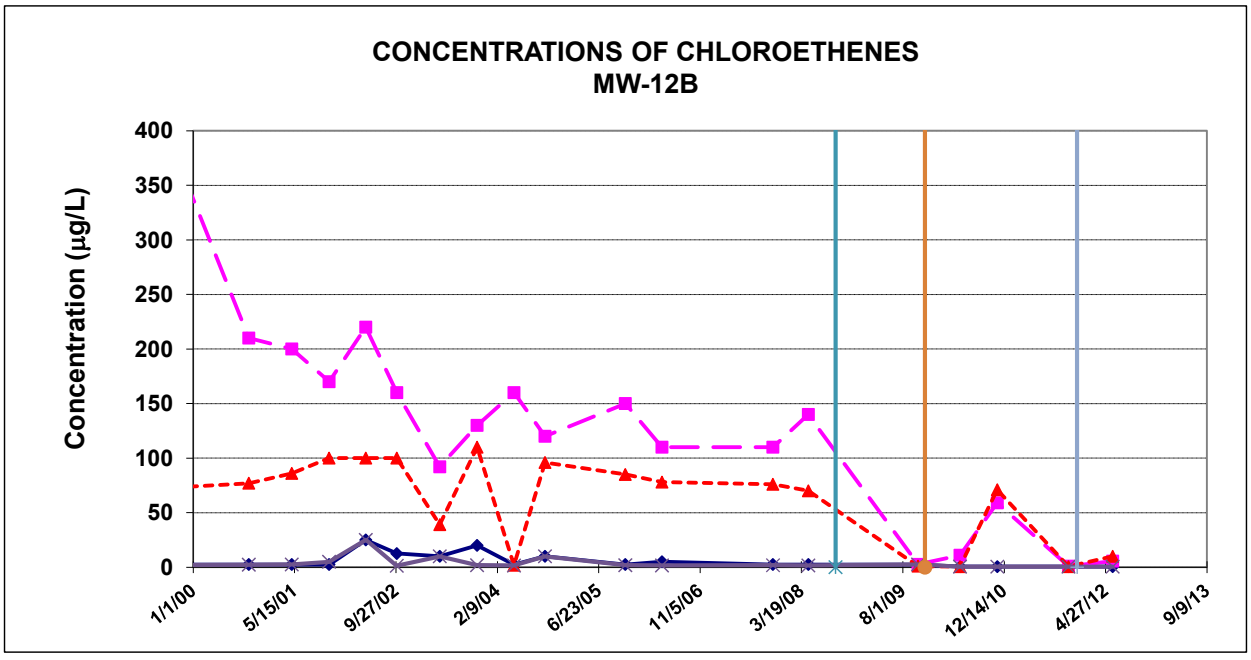
FORMER CARBORUNDUM COMPANY

LONG TERM TRENDS OF CHLORINATED ETHENES IN WELLS MW-11B AND MW-15

PARSONS

40 La Riviere Dr., Suite 350, Buffalo NY 14222





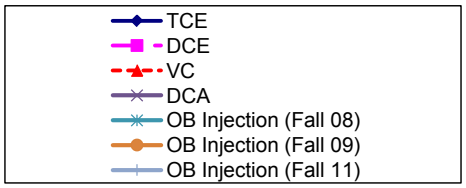


FIGURE 3.5

FORMER CARBORUNDUM COMPANY

LONG TERM TRENDS OF CHLORINATED ETHENES IN WELLS MW-12A AND MW-12B

PARSONS

40 La Riviere Dr., Suite 350, Buffalo NY 14222

MW-7A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	1200	36	210	1.8 J	1 U	1 U	1.2 J
DCE	4800	580	1700	210	65	20	3.8 J
VC	220	60	130	150	50	19	1 U
DCA	1000	80	220	49	33	22	9.1

MW-3A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	0.43	5 U	0.21 J	5 U	NS	NS	NS
DCE	1.5	0.9 J	0.71 J	5 U	NS	NS	NS
VC	2 U	2 U	2 U	2 U	NS	NS	NS
DCA	5 U	5 U	5 U	5 U	NS	NS	NS

MW-4A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	2.8	34	34	130	94	160	7.5
DCE	74	200	200	115.7	254.9	150	140
VC	45	56	53	41	45	73	20
DCA	4.6	12	15	17	21	18	5.4

MW-2A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	0.91 J	5 U	5 U	1 U	NS	NS
DCE	1.2	9.8	0.38 J	5 U	5 U	NS	NS
VC	2 U	1.9 J	2 U	1.3 J	1.2 J	NS	NS
DCA	13	7.1	14	26	18	NS	NS

MW-16A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	NA	0.39 J	0.39 J	5 U	1 U	1 U	1 U
DCE	NA	12	9	8.2	10	11	8.4
VC	NA	160	53	75	180	340	110
DCA	NA	5 U	5 U	5 U	1 U	1 U	1 U

MW-17A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	115	38	29	22	15	11	5.3
DCE	230	160	200	180	210	160	140
VC	18	12	28	25	27	30	25
DCA	59	19	20	30	20	26	21

MW-19A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	1.7	5 U	5 U	5 U	NS	NS	NS
DCE	33	4.2 J	3.2 J	3.7	NS	NS	NS
VC	2 U	4	1.2 J	2.8	NS	NS	NS
DCA	5 U	5 U	5 U	5 U	NS	NS	NS

MW-12A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	2.6	5 U	5 U	5 U	1 U	1 U	1 U
DCE	540	150	130	64	16	19	19
VC	49	39	23	38	16	16	13
DCA	5.9	3.2 J	2 J	2.7	1.6 J	1.8 J	1.8 J

MW-18A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	36	22	25	25	25	23	21
DCE	47	25	31	43	51	42	56
VC	4.4	6.7	2.1 J	7	2.6 J	8.4	2.4 J
DCA	5.6	4.1 J	3.8 J	4.7 J	4.2 J	4.7 J	4.2 J

MW-11A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	NS	NS
DCE	1.3	5 U	5 U	5 U	1.9 J	NS	NS
VC	2 U	2 U	0.7 J	2 U	3.2 J	NS	NS
DCA	5 U	5 U	5 U	5 U	1 U	NS	NS

MW-10A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	1200	300	390	409.4	397.6	630	620
VC	86	67	97	140	140	250	170
DCA	25	4.5 J	5.8	6.4	5.7	7.7	7

MW-1A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	1 U	NS	NS	NS
DCE	2.4	5 U	5 U	1 U	NS	NS	NS
VC	0.44	2 U	2 U	1 U	NS	NS	NS
DCA	5 U	5 U	5 U	1 U	NS	NS	NS

MW-5A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	1.3	0.59 J	0.47 J	5 U	1 U	1 U	1 U
DCE	320	2.6 J	37	5.9	110.97	5.7	88
VC	42	2 U	16	1.8	84	3.3 J	82
DCA	2.1	5 U	5 U	5 U	1 U	1 U	1 U

MW-14A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	NS	NS	NS
DCE	1.6	1.6 J	1.5 J	1.4	NS	NS	NS
VC	0.37	2.4	1.6 J	2.7	NS	NS	NS
DCA	5 U	5 U	5 U	5 U	NS	NS	NS

MW-13A	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	NS	NS	NS
DCE	5 U	5 U	5 U	5 U	NS	NS	NS
VC	2 U	2 U	2 U	2 U	NS	NS	NS
DCA	5 U	5 U	5 U	5 U	NS	NS	NS

HYDE PARK BOULEVARD

RHODE ISLAND AVENUE

PORTLAND STREET

BUILDING

BRICK BUILDING

INJ-9 INJ-10 MW-4A

MW-2A INJ-5 U,L

PMW-4 PMW-1 MW-7A PMW-2 INJ-2 INJ-1 PMW-3 INJ-6 U,L

INJ-7 MW-16A INJ-8

MW-3A MW-19A MW-17A MW-12A MW-18A MW-11A MW-10A MW-1A MW-5A MW-14A MW-13A

LEGEND:

PROPERTY LINE

FENCE

MW-5A BEDROCK MONITORING WELL LOCATION

INJ BEDROCK INJECTION WELL LOCATION

MW-5B OVERBURDEN MONITORING WELL LOCATION

INJ OVERBURDEN INJECTION WELL LOCATION

CONCENTRATIONS IN ug/L (ppb)

SAMPLE DATE	
TCE	TRICHLOROETHENE
DCE	CIS-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE
DCA	1,1-DICHLOROETHANE

SOURCE: INTERA, 2006

HORIZONTAL DATUM: NAD83/96 NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

60 40 20 0 60

SCALE IN FEET

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FIGURE 3.6

FORMER CARBORUNDUM COMPANY
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

VOC CONCENTRATIONS IN OVERBURDEN GROUNDWATER (2000-2012)

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

MW-6	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	560	130	150	85	39	33	30
VC	91	82	100	69	48	57	47
DCA	0.28	5 U	5 U	5 U	1 U	1 U	1 U

MW-7B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	1 U	1 U	1 U	1 U
DCE	84	11	10	7.3	4.5 J	6	1.6 J
VC	39	31	45	24	31	25	9.2
DCA	5 U	5 U	5 U	1 U	1 U	1 U	1 U

MW-3B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	NS	NS	NS
DCE	4.8	1.9 J	2.1 J	1.5	NS	NS	NS
VC	2.3	2.2	2.2	2.9	NS	NS	NS
DCA	5 U	5 U	5 U	5 U	NS	NS	NS

MW-4B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	3.2	5 U	5 U	5 U	1 U	NS	NS
DCE	39	23	12	9.7	2.8	NS	NS
VC	35	11	13	9.5	12	NS	NS
DCA	3.2	1.4 J	5 U	5 U	1 U	NS	NS

MW-2B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	0.44	5 U	5 U	5 U	1 U	1 U	1 U
DCE	260	48	41	9.1	3.7 J	1.8 J	2.7 J
VC	92	59	62	16	7.6 J	2.6 J	8.6
DCA	5 U	5 U	5 U	5 U	1 U	1 U	1 U

MW-8	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	5.5	2.2 J	2.5 J	2.1	2.3	1.9 J	1.6 J
VC	1.9	1.8 J	2.6	2.6	2.2	2.1 J	1.1 J
DCA	5 U	5 U	5 U	5 U	1 U	1 U	1 U

MW-16B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	0.97	5 U	0.25 J	5 U	1 U	1 U	75
DCE	130	210	280	511.8	81	27	4800
VC	35	63	86	130	48	43	590
DCA	5 U	5 U	0.22 J	5 U	1 U	1 U	4.1 J

MW-17B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	22	4 J	4.6 J	3.1 J	1 U	1 U	1 U
DCE	1000	440	630	280	8.5	19	20
VC	69	64	82	69	9.6	27	18
DCA	5.4	9.3	17	26	45	48	43

MW-19B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	2.4	5 U	5 U	5 U	1 U	1 U	1 U
DCE	41	12	24	68	2.1	8.7	2.3 J
VC	6.3	3.4	5.8	7.2	2.1 J	3.3 J	1.6 J
DCA	5 U	5 U	5 U	5 U	1 U	1 U	1 U

MW-12B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	210	110	140	2.6	11	0.98 J	5.6
VC	77	76	70	2 U	1 U	1 U	10
DCA	2.3	1.8 J	1.6 J	5 U	1 U	1 U	1 U

MW-18B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	7.7	5 U	5 U	5 U	1 U	1 U	1 U
DCE	690	160	120	62	69	150	110
VC	90	140	180	220	190	220	140
DCA	5 U	5 U	5 U	5 U	1 U	1 U	1 U

MW-11B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	1 U	1 U	1 U	1 U
DCE	590	140	100	56	1.9 J	2.2 J	1 U
VC	81	80	64	48	7.4	4.6 J	6.1
DCA	3.5	0.39 J	5 U	1 U	1.3 J	1.8 J	1.4 J

MW-10B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	68	0.7 J	0.46 J	1 U	1 U	2 U	1 U
DCE	1800	220	180	370	220	960	280
VC	95	130	76	150	83	180	110
DCA	1.2	0.69 J	0.54 J	1 U	1 U	2 U	1 U

MW-1B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	1 U	NS	NS	NS
DCE	4.7	11	1.2 J	0.8	NS	NS	NS
VC	3.8	16	1.9 J	1.7	NS	NS	NS
DCA	1.5	5 U	0.71 J	1 U	NS	NS	NS

MW-14B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	300	56	120	64	16	4.1 J	1.5 J
VC	110	49	90	86	33	5.4	5.4
DCA	0.61 J	0.6 J	0.41 J	5 U	1 U	1 U	1 U

MW-5B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	2.6	0.76 J	0.51 J	5 U	1.1 J	1 U	1 U
DCE	420	61	58	39	36	48	33
VC	45	49	57	37	39	63	34
DCA	1.1	0.38 J	5 U	5 U	1 U	1 U	1 U

MW-15	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	5 U	5 U	5 U	5 U	1 U	1 U	1 U
DCE	400	170	190	57.1	5.9	32	0.8 U
VC	120	86	93	82	17	52	1.8 J
DCA	0.95	0.66 J	0.58 J	2	1.3 J	1.4 J	1.2 J

MW-13B	2000	Oct-07	Apr-08	Oct-09	May-10	Oct-11	Jun-12
TCE	12	0.78 J	0.65 J	5 U	1 U	1 U	1 U
DCE	310	82	65	88	46	17	27
VC	40	59	56	68	47	24	57
DCA	0.91	0.61 J	0.48 J	5 U	1 U	1 U	1 U

HYDE PARK BOULEVARD

RHODE ISLAND AVENUE

PORTLAND STREET

BUILDING

BRICK BUILDING

MW-6 MW-2B MW-7B MW-3B MW-4B MW-8 MW-16B MW-19B PMW-8 INJ-3 INJ-4 PMW-5 MW-17B PMW-7 PMW-6 PMW-9 MW-18B MW-12B MW-11B MW-10B MW-5B MW-1B MW-14B MW-13B MW-15

LEGEND:

PROPERTY LINE

FENCE

MW-5A BEDROCK MONITORING WELL LOCATION

INJ BEDROCK INJECTION WELL LOCATION

MW-5B OVERBURDEN MONITORING WELL LOCATION

INJ OVERBURDEN INJECTION WELL LOCATION

CONCENTRATIONS IN ug/L (ppb)

SAMPLE DATE	
TCE	TRICHLOROETHENE
DCE	CIS-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE
DCA	1,1-DICHLOROETHANE

SOURCE: INTERA, 2006

HORIZONTAL DATUM: NAD83/96 NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE.
VERTICAL DATUM NAVD 88 DATUM

60 40 20 0 60

SCALE IN FEET

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FIGURE 3.7

FORMER CARBORUNDUM COMPANY
HYDE PARK FACILITY
TOWN OF NIAGARA, NEW YORK

VOC CONCENTRATIONS IN BEDROCK GROUNDWATER (2000-2012)

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

TABLE 3.1
WATER LEVEL MEASUREMENTS
(JUNE 2012)

Well No.	Formation	Elevation TOC	Easting	Northing	6/11/12	
					Water Level	GW Elevation
PMW-1	overburden	596.62	1028372.30	1136886.30	5.90	590.72
PMW-2	overburden	595.98	1028371.76	1136875.49	6.69	589.29
PMW-3	overburden	596.59	1028379.73	1136882.30	6.67	589.92
PMW-4	overburden	597.05	1028384.66	1136909.84	8.54	588.51
PMW-5	bedrock	592.65	1028308.62	1136764.72	5.23	587.42
PMW-6	bedrock	592.44	1028310.46	1136747.77	4.92	587.52
PMW-7	bedrock	592.93	1028325.51	1136758.05	5.59	587.34
PMW-8	bedrock	593.11	1028352.65	1136824.51	5.25	587.86
PMW-9	bedrock	592.45	1028282.58	1136689.24	4.33	588.12
INJ-1	overburden	596.66	1028382.45	1136887.25	6.98	589.68
INJ-2	overburden	595.89	1028374.60	1136890.69	6.77	589.12
INJ-3	bedrock	592.87	1028313.28	1136774.48	5.16	587.71
INJ-4	bedrock	593.26	1028332.65	1136771.29	5.36	587.90
INJ-5U	overburden	596.08	1028365.66	1136878.92	7.17	588.91
INJ-5L	overburden	596.00	1028365.66	1136878.92	7.97	588.03
INJ-6U	overburden	596.96	1028376.98	1136868.99	6.70	590.26
INJ-6L	overburden	595.97	1028376.98	1136868.99	7.27	588.70
INJ-7	overburden	592.76	1028409.44	1136837.46	2.95	589.81
INJ-8	overburden	592.98	1028418.16	1136832.59	4.68	588.30
INJ-9	overburden	591.62	1028023.50	1136898.15	4.04	587.58
INJ-10	overburden	591.49	1028032.17	1136890.90	3.54	587.95
MW-1A	overburden	597.56	1028606.44	1136554.99	9.06	588.50
MW-1B	bedrock	597.64	1028611.01	1136554.66	9.25	588.39
MW-2A	overburden	595.73	1028335.27	1136881.61	6.26	589.47
MW-2B	bedrock	595.80	1028337.09	1136888.34	7.94	587.86
MW-3A	overburden	599.94	1028627.22	1136895.86	8.68	591.26
MW-3B	bedrock	599.70	1028624.57	1136899.80	11.39	588.31
MW-4A	overburden	591.60	1028027.77	1136890.77	2.51	589.09
MW-4B	bedrock	591.49	1028023.72	1136890.65	3.65	587.84
MW-5A	overburden	597.91	1028256.93	1136567.66	10.45	587.46
MW-5B	bedrock	597.79	1028256.86	1136562.36	10.05	587.74
MW-6B	bedrock	595.51	1028293.24	1136889.98	7.69	587.82
MW-7A	overburden	596.59	1028379.67	1136889.32	6.25	590.34
MW-7B	bedrock	596.66	1028377.01	1136884.33	8.48	588.18
MW-8B	bedrock	599.63	1028584.29	1136897.91	11.04	588.59

TABLE 3.1
WATER LEVEL MEASUREMENTS
(JUNE 2012)

Well No.	Formation	Elevation TOC	Easting	Northing	6/11/12	
					Water Level	GW Elevation
MW-10A	overburden	596.87	1028134.19	1136571.96	9.53	587.34
MW-10B	bedrock	596.71	1028129.79	1136571.87	8.96	587.75
MW-11A	overburden	595.48	1027992.43	1136576.28	8.67	586.81
MW-11B	bedrock	595.57	1027996.44	1136575.71	8.56	587.01
MW-12A	overburden	590.79	1027887.31	1136654.88	4.57	586.22
MW-12B	bedrock	590.89	1027886.62	1136658.22	3.13	587.76
MW-13A	overburden	595.18	1028202.92	1136517.75	7.84	587.34
MW-13B	bedrock	594.73	1028199.59	1136517.64	7.36	587.37
MW-14A	overburden	592.97	1027954.11	1136524.76	7.57	585.40
MW-14B	bedrock	592.85	1027951.17	1136524.55	5.28	587.57
MW-15B	bedrock	591.44	1027851.99	1136475.97	4.33	587.12
MW-16A	overburden	591.64	1028415.02	1136829.41	7.56	584.08
MW-16B	bedrock	592.38	1028414.66	1136826.44	3.91	588.47
MW-17A	overburden	593.13	1028319.92	1136765.00	4.39	588.74
MW-17B	bedrock	592.92	1028319.47	1136763.41	5.12	587.80
MW-18A	overburden	593.78	1028377.39	1136661.13	5.41	588.37
MW-18B	bedrock	593.43	1028375.07	1136659.79	5.55	587.88
MW-19A	overburden	594.95	1028610.90	1136747.48	5.35	589.60
MW-19B	bedrock	594.65	1028611.64	1136749.89	5.08	589.57

Table 3.2
Field Measured Parameters
Spring 2012 Monitoring Event
Former Carborundum Company, Hyde Park Facility

Well ID	Sample Date	pH (pH Units)	Conductivity (mS/cm)	Temperature (^{o}C)	Eh (mV)	DO (mg/L)	Turbidity (NTU)
MW-2B	13-Jun-12	7.18	1.720	15.07	-336	0.0	2.19
MW-4A	12-Jun-12	6.41	2.240	20.42	-60	3.45	234
MW-5A	12-Jun-12	7.94	0.635	18.24	75	1.13	7.60
MW-5B	13-Jun-12	7.29	1.050	17.17	-89	6.67	3.40
MW-6	13-Jun-12	7.33	1.010	13.26	-295	0.0	0.0
MW-7A	14-Jun-12	6.62	1.920	18.11	-117	0.0	645
MW-7B	14-Jun-12	7.24	0.865	19.12	-331	0.0	47.8
MW-8	12-Jun-12	7.21	0.904	18.03	-113	0.0	7.16
MW-10A	13-Jun-12	7.34	2.780	18.68	-176	0.0	3.24
MW-10B	14-Jun-12	7.01	0.896	19.02	-110	0.04	0.25
MW-11B	14-Jun-12	7.16	1.100	18.43	-353	0.0	2.30
MW-12A	13-Jun-12	7.08	0.883	16.08	-112	0.0	4.60
MW-12B	13-Jun-12	7.19	0.589	15.57	-128	0.0	0.0
MW-13B	13-Jun-12	7.18	2.680	19.91	-81	0.0	35.7
MW-14B	13-Jun-12	7.38	1.390	17.47	-334	0.46	10.2
MW-15	14-Jun-12	7.24	0.992	14.58	-331	0.13	0.97
MW-16A	14-Jun-12	6.98	2.840	17.63	10	0.0	2.76
MW-16B	13-Jun-12	7.31	0.860	15.99	-320	0.26	6.32
MW-17A	12-Jun-12	7.33	2.340	19.07	-103	0.0	21.7
MW-17B	12-Jun-12	6.91	2.760	16.65	-325	0.0	11.4
MW-18A	12-Jun-12	7.46	0.717	17.40	-110	0.0	8.20
MW-18B	12-Jun-12	7.17	1.110	16.93	-79	0.0	1.20
MW-19B	12-Jun-12	7.10	1.190	20.26	-147	0.23	3.16

TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]		Overburden Wells			
			Location ID:	MW- 2B	MW- 4A	MW- 5A	MW-7A
			Sample ID:	MW-2B_061312	MW-4A_061212	MW-5A_061212	MW-7A_061412
			Lab Sample Id:	6687268	6685703/6687265/6700837	6685707	6688892
			Source:	LLI	LLI	LLI	LLI
			SDG:	BPW08	BPW07/BPW08/BPW18	BPW07	BPW09
			Matrix:	WATER	WATER	WATER	WATER
			Sampled:	6/13/2012 9:40	6/12/2012 11:15	6/12/2012 15:40	6/14/2012 15:55
			Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	1 U	5.4	1 U	9.1
75-35-4	1,1-DICHLOROETHENE	5	ug/l	0.8 U	0.81 J	0.8 U	0.8 U
75-00-3	CHLOROETHANE	5	ug/l	1 U	7.8	1 J	22
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	2.7 J	140	88	3.8 J
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	0.8 U	2.9 J	1 J	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	1 U	7.5	1 U	1.2 J
75-01-4	VINYL CHLORIDE	2	ug/l	8.6	20	82	1 U
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l		3.9 J	34	3.3 J
74-84-0	ETHANE	--	ug/l		1 U	2.8 J	5.8
74-82-8	METHANE	--	ug/l		3700	130	6300
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l		0.0801 U		0.0801 U
7440-38-2	ARSENIC	0.050	mg/l		0.0051 U		0.0051 U
7440-70-2	CALCIUM	--	mg/l		287		268
7439-89-6	IRON	0.600	mg/l		3.22	0.0141 U	3.6
7439-95-4	MAGNESIUM	35	mg/l		92.8		95.4
7439-96-5	MANGANESE	0.600	mg/l		0.736		1.33
7440-23-5	SODIUM	--	mg/l		230		142 J
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l		796	3.2 U	
24959-67-9	BROMIDE	2000	mg/l		36.7		20.3
16887-00-6	CHLORIDE (AS CL)	250	mg/l		89.8	120	24.3
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l		1350	12.8 U	
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l		0.04 U	0.57	
14797-65-0	NITROGEN, NITRITE	10	mg/l		0.015 U	0.015 U	
74-98-6	PROPANE	--	ug/l		1 U	1 U	1 U
14808-79-8	SULFATE (AS SO4)	250	mg/l		1.5 U	116	1.5 U
18496-25-8	SULFIDE	50 (G)	mg/l		0.34	0.054 U	
TOC	TOTAL ORGANIC CARBON	--	mg/l		434	0.98 J	573

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
(6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]		Overburden Wells			
			Location ID:	MW-10A	MW-12A	MW-16A	MW-17A
			Sample ID:	MW-10A_061312	MW-12A_061312	MW-16A_061412	MW-17A_061212
			Lab Sample Id:	6687271	6687276	6688891	6685705
			Source:	LLI	LLI	LLI	LLI
			SDG:	BPW08	BPW08	BPW09	BPW07
			Matrix:	WATER	WATER	WATER	WATER
			Sampled:	6/13/2012 11:40	6/13/2012 15:00	6/14/2012 14:20	6/12/2012 14:55
			Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	7	1.8 J	1 U	21
75-35-4	1,1-DICHLOROETHENE	5	ug/l	1 J	0.8 U	0.8 U	8.1
75-00-3	CHLOROETHANE	5	ug/l	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	620	19	8.4	140
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	13	0.8 U	0.8 U	1.2 J
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	1 U	1 U	1 U	5.3
75-01-4	VINYL CHLORIDE	2	ug/l	170	13	110	25
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l	43		11	3.1 J
74-84-0	ETHANE	--	ug/l	1.5 J		1 U	12
74-82-8	METHANE	--	ug/l	120		8.7 J	8500
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l			0.0801 U	
7440-38-2	ARSENIC	0.050	mg/l			0.0051 U	
7440-70-2	CALCIUM	--	mg/l			333	
7439-89-6	IRON	0.600	mg/l	0.0141 U		0.0141 U	0.0141 U
7439-95-4	MAGNESIUM	35	mg/l			144	
7439-96-5	MANGANESE	0.600	mg/l			0.134	
7440-23-5	SODIUM	--	mg/l			173 J	
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l	3.2 U		5.4	5.9
24959-67-9	BROMIDE	2000	mg/l			2 U	
16887-00-6	CHLORIDE (AS CL)	250	mg/l	621		237	484
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l	31 J		26.5 J	28.8 J
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l	0.04 U			0.04 U
14797-65-0	NITROGEN, NITRITE	10	mg/l	0.015 U			0.015 U
74-98-6	PROPANE	--	ug/l	1 U		1 U	1 U
14808-79-8	SULFATE (AS SO4)	250	mg/l	264		1100	172
18496-25-8	SULFIDE	50 (G)	mg/l	0.054 U			0.054 U
TOC	TOTAL ORGANIC CARBON	--	mg/l	0.98 J		9.5	4.4

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
(6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]		Overburden Wells	Bedrock Wells		
			Location ID:	MW-18A	MW- 5B	MW- 6	MW- 7B
			Sample ID:	MW-18A_061212	MW-5B_061312	MW-6_061312	MW-7B_061412
			Lab Sample Id:	6685704	6687270	6687267	6688887
			Source:	LLI	LLI	LLI	LLI
			SDG:	BPW07	BPW08	BPW08	BPW09
			Matrix:	WATER	WATER	WATER	WATER
			Sampled:	6/12/2012 12:10	6/13/2012 11:35	6/13/2012 9:25	6/14/2012 12:20
			Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	4.2 J	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	5	ug/l	1.1 J	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	5	ug/l	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	56	33	30	1.6 J
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	0.94 J	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	21	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	2	ug/l	2.4 J	34	47	9.2
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l	1 U	1 U		7.9
74-84-0	ETHANE	--	ug/l	1 U	1 U		1 U
74-82-8	METHANE	--	ug/l	11 J	50		2400
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l				0.0801 U
7440-38-2	ARSENIC	0.050	mg/l				0.0051 U
7440-70-2	CALCIUM	--	mg/l				125
7439-89-6	IRON	0.600	mg/l	0.0141 U	0.0141 U		0.0141 U
7439-95-4	MAGNESIUM	35	mg/l				47.8
7439-96-5	MANGANESE	0.600	mg/l				0.0833
7440-23-5	SODIUM	--	mg/l				91.7
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l	3.1 U	3.7 U		
24959-67-9	BROMIDE	2000	mg/l				2 U
16887-00-6	CHLORIDE (AS CL)	250	mg/l	108	187		150
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l	12.8 U	33.3 J		
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l	0.04 U	0.04 U		
14797-65-0	NITROGEN, NITRITE	10	mg/l	0.015 U	0.015 U		
74-98-6	PROPANE	--	ug/l	1 U	1 U		1 U
14808-79-8	SULFATE (AS SO4)	250	mg/l	129	255		143
18496-25-8	SULFIDE	50 (G)	mg/l	0.054 U	0.054 U		
TOC	TOTAL ORGANIC CARBON	--	mg/l	1	3.4		19.3

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
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(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
(6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]		Bedrock Wells			
			Location ID:	MW- 8	MW-10B	MW-11B	Dup of MW-11B_061412 MW-11B
			Sample ID:	MW-8_061212	MW-10B_061412	MW-11B_061412	DUP_061412FD
			Lab Sample Id:	6685709	6688885	6688884	6688886
			Source:	LLI	LLI	LLI	LLI
			SDG:	BPW07	BPW09	BPW09	BPW09
			Matrix:	WATER	WATER	WATER	WATER
			Sampled:	6/12/2012 16:55	6/14/2012 11:20	6/14/2012 11:10	6/14/2012 12:01
			Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	1 U	1 U	1.4 J	1.3 J
75-35-4	1,1-DICHLOROETHENE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	5	ug/l	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	1.6 J	280	1.8 J	2.1 J
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	0.8 U	1.7 J	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	2	ug/l	1.1 J	110	6.1	6.1
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l		5.7	110	100
74-84-0	ETHANE	--	ug/l		1 U	2.6 J	2.4 J
74-82-8	METHANE	--	ug/l		120	7400	7500
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l		0.0801 U	0.0801 U	0.0801 U
7440-38-2	ARSENIC	0.050	mg/l		0.0051 U	0.0051 U	0.0051 U
7440-70-2	CALCIUM	--	mg/l		162	148	145
7439-89-6	IRON	0.600	mg/l		0.0141 U	0.0141 U	0.0141 U
7439-95-4	MAGNESIUM	35	mg/l		59.7	52.1	51.7
7439-96-5	MANGANESE	0.600	mg/l		0.0585	0.0472	0.0564
7440-23-5	SODIUM	--	mg/l		71.4	85.3	81
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l		3.3 U	32	25.7
24959-67-9	BROMIDE	2000	mg/l		2 U	2.3 J	2.4 J
16887-00-6	CHLORIDE (AS CL)	250	mg/l		141	121	126
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l		12.9 J	76.5	81
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l		0.04 U	0.04 U	0.04 U
14797-65-0	NITROGEN, NITRITE	10	mg/l		0.015 U	0.015 U	0.015 U
74-98-6	PROPANE	--	ug/l		1.1 J	1 U	1 U
14808-79-8	SULFATE (AS SO4)	250	mg/l		261	135	130
18496-25-8	SULFIDE	50 (G)	mg/l		0.054 U	44.4	39.4
TOC	TOTAL ORGANIC CARBON	--	mg/l		3.8	4.3	4.2

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
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TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

				Bedrock Wells			
Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]	Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-12B MW-12B_061312 6687273 LLI BPW08 WATER 6/13/2012 13:55 7/27/2012	MW-13B MW-13B_061312 6687275 LLI BPW08 WATER 6/13/2012 14:45 7/27/2012	MW-14B MW-14B_061312 6687274 LLI BPW08 WATER 6/13/2012 14:20 7/27/2012	MW-15 MW-15_061412 6688883 LLI BPW09 WATER 6/14/2012 9:20 7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	1 U	1 U	1 U	1.2 J
75-35-4	1,1-DICHLOROETHENE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	5	ug/l	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	5.6	27	1.5 J	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	2	ug/l	10	57	5.4	1.8 J
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l			91	
74-84-0	ETHANE	--	ug/l			2.2 J	
74-82-8	METHANE	--	ug/l			9100	
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l				
7440-38-2	ARSENIC	0.050	mg/l				
7440-70-2	CALCIUM	--	mg/l				
7439-89-6	IRON	0.600	mg/l			0.027 J	
7439-95-4	MAGNESIUM	35	mg/l				
7439-96-5	MANGANESE	0.600	mg/l				
7440-23-5	SODIUM	--	mg/l				
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l			33	
24959-67-9	BROMIDE	2000	mg/l				
16887-00-6	CHLORIDE (AS CL)	250	mg/l			241	
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l			117	
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l			0.04 U	
14797-65-0	NITROGEN, NITRITE	10	mg/l			0.015 U	
74-98-6	PROPANE	--	ug/l			1 U	
14808-79-8	SULFATE (AS SO4)	250	mg/l			126	
18496-25-8	SULFIDE	50 (G)	mg/l			48.2	
TOC	TOTAL ORGANIC CARBON	--	mg/l			10.2	

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
(6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

TABLE 3.3
Analytical Summary Table
2012 Annual Sampling Event

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		NYSDEC Class GA Groundwater Standards/Guidance Values [1]		Bedrock Wells			
					Dup of MW-16B_061312		
			Location ID:	MW-16B	MW-16B	MW-17B	MW-18B
			Sample ID:	MW-16B_061312	DUP061312	MW-17B_061212	MW-18B_061212
			Lab Sample Id:	6687269	6687272	6685708	6685702
			Source:	LLI	LLI	LLI	LLI
			SDG:	BPW08	BPW08	BPW07	BPW07
			Matrix:	WATER	WATER	WATER	WATER
			Sampled:	6/13/2012 11:30	6/13/2012 12:01	6/12/2012 16:40	6/12/2012 10:20
			Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND		UNITS:				
	VOLATILES						
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/l	1.6 U	1.6 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	5	ug/l	4 J	4.1 J	43	1 U
75-35-4	1,1-DICHLOROETHENE	5	ug/l	15	15	0.8 U	0.8 U
75-00-3	CHLOROETHANE	5	ug/l	2.6 J	2.2 J	1.5 J	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	5	ug/l	4700	4800	20	110
127-18-4	TETRACHLOROETHYLENE(PCE)	5	ug/l	1.6 U	1.6 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/l	19	19	0.82 J	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	5	ug/l	74	75	1 U	1 U
75-01-4	VINYL CHLORIDE	2	ug/l	600	590	18	140
NATURAL ATTENUATION PARAMETERS							
	HYDROCARBON GASES-RSK 175M						
74-85-1	ETHENE	--	ug/l	74	70	72	3.6 J
74-84-0	ETHANE	--	ug/l	2.5 J	2.3 J	45	1 U
74-82-8	METHANE	--	ug/l	2600	2300	23000	110
	DISSOLVED METALS						
7429-90-5	ALUMINUM	--	mg/l	0.0801 U	0.0801 U	0.0801 U	0.0801 U
7440-38-2	ARSENIC	0.050	mg/l	0.0051 U	0.0051 U	0.0051 U	0.0051 U
7440-70-2	CALCIUM	--	mg/l	152	150	194	158
7439-89-6	IRON	0.600	mg/l	0.0141 U	0.0141 U	0.19 J	0.0141 U
7439-95-4	MAGNESIUM	35	mg/l	60.7 J	59.6 J	57.1	58.8
7439-96-5	MANGANESE	0.600	mg/l	0.0669	0.0653	0.0833	0.0889
7440-23-5	SODIUM	--	mg/l	58.9	58.5	351	68.2
	GENERAL CHEMISTRY						
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	--	mg/l	24.6	21.7	9.6	3.5 U
24959-67-9	BROMIDE	2000	mg/l	2 U	2 U	2.6	2 U
16887-00-6	CHLORIDE (AS CL)	250	mg/l	81.5	81.5	739	102
COD	COD - CHEMICAL OXYGEN DEMAND	--	mg/l	65.1	69.7	49.2 J	12.8 U
14797-55-8	NITROGEN, NITRATE (AS N)	10	mg/l	0.04 U	0.04 U	0.04 U	0.04 U
14797-65-0	NITROGEN, NITRITE	10	mg/l	0.015 U	0.015 U	0.015 U	0.015 U
74-98-6	PROPANE	--	ug/l	1 U	1 U	1 U	1 U
14808-79-8	SULFATE (AS SO4)	250	mg/l	165	177	116	268
18496-25-8	SULFIDE	50 (G)	mg/l	33.1	29.7	11.6	0.054 U
TOC	TOTAL ORGANIC CARBON	--	mg/l	4.1	4.3	3.8	4

Notes:
(1) NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998).
(2) -- indicates no standard or guidance value is available.
(3) (G) indicates guidance value.
(4) U indicates compound was not detected at specified detection limit.
(5) J indicates an estimated concentration.
(6) Shaded values indicate concentrations exceeding groundwater standard or guidance values.

SECTION 4
SUMMARY AND CONLUSIONS

The following summary and conclusions were developed for the Spring 2012 groundwater sampling event:

- In general, there has been a steady decline in VOC concentrations in the overburden and bedrock groundwater over the past 12 years, with more recent substantial declines related to the 2008, 2009, and 2011 bioremediation injections.
- Overburden groundwater VOC concentrations were generally consistent with the previous monitoring program results. A notable decrease was observed in MW-7A, located in the area of the vegetable oil substrate injections conducted in September 2008, November 2009, and November 2011. MW-4A and MW-16A exhibited recent decreases, following the November 2011 injection event in the vicinity of these wells.
- Bedrock groundwater VOC concentrations were also generally consistent with results from previous rounds of monitoring, with additional declines related to the substrate injections. Notably, VOC concentrations have decreased substantially in several downgradient bedrock monitoring wells. TCE was non-detect in all wells except MW-16B.
- Groundwater samples for natural attenuation monitoring have been collected since October 2000. The results for 2012 were generally consistent with previous monitoring events, and continue to indicate that natural attenuation processes are active.
- Groundwater flow directions were found to be consistent with former groundwater monitoring results. Groundwater in the overburden and the bedrock is generally westerly to southwesterly.

SECTION 5
REFERENCES

NYSDEC. 1998. Division of Water Technical Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. New York State Department of Environmental Conservation. June 1998.

DE&S 2000a. Groundwater Monitoring Work Plan for the Former Carborundum Company – Electric Products Division, Hyde Park Facility, Town of Niagara, Niagara County, New York, Site No. 932036, Final Document. Duke Engineering & Services, January 2000.

NYSDEC 2005. Letter to Mr. William Barber (BP) from Michael Hinton (NYSDEC) re: Carborundum Globar Site No. 932036, Town of Niagara, Niagara County, New York. Summary Report for the Fifth Year of the Groundwater Monitoring Program. NYSDEC, September 28, 2005.

Parsons, 2009. Enhanced Bioremediation Pilot Test (Overburden) Results Data Delivery, Former Carborundum Company (Hyde Park Facility), July 30, 2009.

Parsons, 2012. Letter to NYSDEC regarding modifications to the Spring 2012 monitoring event. May 11, 2012.

APPENDIX A
DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT

HYDE PARK FACILITY

Prepared For:

Atlantic Richfield Company

4850 East 49th Street
MBC 3-147
Cuyahoga Heights, Ohio 44125

Prepared By:

PARSONS

40 La Riviere Drive, Suite 350
Buffalo, New York 14202
(716) 541-0730

AUGUST 2012

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LIST OF ATTACHMENTS

SECTION 1

DATA USABILITY SUMMARY

Groundwater samples were collected from the Hyde Park Site in Niagara Falls, New York from June 12, 2012 through June 18, 2012. Analytical results from these samples were reviewed by Parsons for usability with respect to the following requirements:

- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs).

The analytical laboratory for this project was Lancaster Laboratories, Inc. (LLI). LLI is approved to conduct project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 34 days on average for the Hyde Park samples. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report.

1.2 SAMPLING AND CHAIN-OF-CUSTODY

The samples were collected, shipped under a COC record, and received at the laboratory within one day of sampling. All samples were received intact and in good condition at LLI. It was noted that volatile sample INJ-5A was received at LLI with a pH=3, greater than the pH<2 preservation requirement for volatile samples.

1.3 LABORATORY ANALYTICAL METHODS

The groundwater samples collected from the site were analyzed for volatile organic compounds (VOCs) including trichloroethene, cis- and trans-1,2-dichloroethene, tetrachloroethylene, 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, chloroethane, methane, ethane, ethene, and propane; dissolved metals; chloride; bromide; sulfate; sulfide; nitrite; nitrate; biochemical oxygen demand (BOD); chemical oxygen demand (COD); and/or total organic carbon (TOC). Summaries of issues concerning these laboratory analyses are presented in Subsections 1.3.1 through 1.3.3. The data qualifications resulting from the data review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, and comparability (PARCC) are discussed for each analytical method in Section 2. The laboratory data were reviewed and may be qualified with the following validation flags:

"U" - not detected at the value given,
"UJ" - estimated and not detected at the value given,
"J" - estimated at the value given,
"N" - presumptive evidence at the value given, and

"R" - unusable value.

The validated laboratory data were tabulated and are presented in Attachment A.

1.3.1 Volatile Organic Analysis Including Methane, Ethane, Ethene, and Propane

The groundwater samples were analyzed for VOCs using the USEPA SW-846 8260B analytical method and methane, ethane, ethene, and propane (MEEP) using the USEPA approved RSK 175 analytical method. The reported results for these samples did not require qualification resulting from data validation. The reported VOC and MEEP analytical results were 100% complete (i.e., usable) for the groundwater data presented by LLI. PARCC requirements were met.

1.3.2 Dissolved Metals Analysis

The groundwater samples were analyzed for dissolved metals using the USEPA SW-846 6010B analytical method. Certain reported results for the metals samples were qualified as estimated based upon instrument calibrations. The reported metals analytical results were 100% complete (i.e., usable) for the groundwater data presented by LLI. PARCC requirements were met.

1.3.3 Other Parameters

The groundwater samples were also analyzed for chloride, bromide, and sulfate using the USEPA 300.0 analytical method; sulfide using the SM20 4500 S2 D analytical method; nitrite and nitrate using the USEPA 353.2 analytical method; BOD using the SM20 5210B analytical method; COD using the USEPA 410.4 analytical method; and TOC using the SM20 5310C analytical method. Custody documentation, analytical holding times, laboratory blanks, matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy, laboratory duplicate precision, laboratory control sample accuracy, instrument calibrations, quantitation limits, sample result identification, and field duplicate precision were reviewed for compliance. The reported results for these parameters did not require qualification resulting from data validation with the exception of the positive bromide results associated with samples collected on 6/15/12, and the positive chloride results associated with samples collected on 6/18/12. These bromide and chloride results were considered estimated, possibly biased high, and qualified “J” based upon exceedances in matrix spike recoveries for bromide (116%R; QC limit 90-110%R) and chloride (142%R; QC limit 90-110%R).

The reported analytical results for these parameters were 100% complete (i.e., usable) for the groundwater data presented by LLI. PARCC requirements were met.

SECTION 2

DATA VALIDATION REPORT

2.1 GROUNDWATER

Data review has been completed for data packages generated by LLI containing groundwater samples collected from the Hyde Park Site. The samples were shipped under a COC record and received intact by the analytical laboratory. Analytical sample results were submitted in sample delivery groups (SDGs) BPW07, BPW08, BPW09, BPW10, BPW11, and BPW18. Data validation was performed in accordance with the most current editions of the NYSDEC ASP and the USEPA Region II SOPs for organic and inorganic data review. This data validation and usability report is presented by analysis type and the validated laboratory data are presented in Attachment A.

2.1.1 Volatiles

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank and trip blank contamination
- Instrument performance
- Initial and continuing calibrations
- Internal standard responses
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols.

Usability

All volatile groundwater sample results were considered usable following data review.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The volatile

groundwater data presented were 100% (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A.

It was noted that samples INJ-01, -02, -05A, -05B, PMW-1, -2, -3, -4, -5, -7, -8, MW-4A, -7A, -7B, -10A, -10B, -11B, -14B, -16B, -17A, -17B, and DUP061312 were diluted and reanalyzed since vinyl chloride, cis-1,2-dichloroethene, methane, and/or ethene exceeded calibration ranges during the original analysis. Results from the reanalysis of these samples for the associated compounds were reported in the validated laboratory data table in Attachment A.

2.1.2 Dissolved Metals

The following items were reviewed for compliancy in the metals analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration, and preparation blank contamination
- Initial and continuing calibration verifications
- Interference check sample recoveries
- Matrix spike recoveries
- Laboratory duplicate precision
- Field duplicate precision
- Laboratory control sample (LCS) recoveries
- Serial dilutions
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of instrument calibrations.

Calibrations

All initial and continuing calibration verifications were analyzed at the appropriate frequency with recoveries within QC limits. The contract required detection limit (CRDL) standard was analyzed at the appropriate frequency with recoveries within the 70-130%R QC limit with the exception of the low recovery for magnesium (27.7%R) associated with samples collected on 6/13/12; and the high recovery for sodium (162.7%R) in the standard associated with samples MW-7A and MW-16A. Therefore, the magnesium results were considered estimated, possibly biased low, with positive results qualified "J" and nondetected results qualified "UJ" for the affected samples. The positive sodium results were considered estimated, possibly biased high, and qualified "J" for the affected samples.

Usability

All metals sample results were considered usable following data review.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, and comparability. The dissolved metals data presented were 100% complete (i.e., usable). The validated groundwater laboratory data are tabulated and presented in Attachment A.

ATTACHMENT A

VALIDATED LABORATORY DATA

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 2B MW-2B_061312 6687268 LLI BPW08 WATER 6/13/2012 9:40 7/27/2012	MW- 4A MW-4A_061212 6685703/6687265/670083 LLI BPW07/BPW08/BPW18 WATER 6/12/2012 11:15 7/27/2012	MW- 5A MW-5A_061212 6685707 LLI BPW07 WATER 6/12/2012 15:40 7/27/2012	MW- 5B MW-5B_061312 6687270 LLI BPW08 WATER 6/13/2012 11:35 7/27/2012	MW- 6 MW-6_061312 6687267 LLI BPW08 WATER 6/13/2012 9:25 7/27/2012	MW-7A MW-7A_061412 6688892 LLI BPW09 WATER 6/14/2012 15:55 7/27/2012	MW- 7B MW-7B_061412 6688887 LLI BPW09 WATER 6/14/2012 12:20 7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	5.4	1 U	1 U	1 U	9.1	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.81 J	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	7.8	1 J	1 U	1 U	22	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	2.7 J	140	88	33	30	3.8 J	1.6 J
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	2.9 J	1 J	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	7.5	1 U	1 U	1 U	1.2 J	1 U
75-01-4	VINYL CHLORIDE	ug/l	8.6	20	82	34	47	1 U	9.2
74-85-1	ETHENE	ug/l		3.9 J	34	1 U		3.3 J	7.9
74-84-0	ETHANE	ug/l		1 U	2.8 J	1 U		5.8	1 U
74-82-8	METHANE	ug/l		3700	130	50		6300	2400
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l		0.0801 U				0.0801 U	0.0801 U
7440-38-2	ARSENIC	mg/l		0.0051 U				0.0051 U	0.0051 U
7440-70-2	CALCIUM	mg/l		287				268	125
7439-89-6	IRON	mg/l		3.22	0.0141 U	0.0141 U		3.6	0.0141 U
7439-95-4	MAGNESIUM	mg/l		92.8				95.4	47.8
7439-96-5	MANGANESE	mg/l		0.736				1.33	0.0833
7440-23-5	SODIUM	mg/l		230				142 J	91.7
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l		796	3.2 U	3.7 U			
24959-67-9	BROMIDE	mg/l		36.7				20.3	2 U
16887-00-6	CHLORIDE (AS CL)	mg/l		89.8	120	187		24.3	150
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l		1350	12.8 U	33.3 J			
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l		0.04 U	0.57	0.04 U			
14797-65-0	NITROGEN, NITRITE	mg/l		0.015 U	0.015 U	0.015 U			
74-98-6	PROPANE	ug/l		1 U	1 U	1 U		1 U	1 U
14808-79-8	SULFATE (AS SO4)	mg/l		1.5 U	116	255		1.5 U	143
18496-25-8	SULFIDE	mg/l		0.34	0.054 U	0.054 U			
TOC	TOTAL ORGANIC CARBON	mg/l		434	0.98 J	3.4		573	19.3

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 8 MW-8_061212 6685709 LLI BPW07 WATER 6/12/2012 16:55 7/27/2012	MW-10A MW-10A_061312 6687271 LLI BPW08 WATER 6/13/2012 11:40 7/27/2012	MW-10B MW-10B_061412 6688885 LLI BPW09 WATER 6/14/2012 11:20 7/27/2012	MW-11B MW-11B_061412 6688884 LLI BPW09 WATER 6/14/2012 11:10 7/27/2012	Dup of MW-11B_061412 MW-11B DUP_061412FD 6688886 LLI BPW09 WATER 6/14/2012 12:01 7/27/2012	MW-12A MW-12A_061312 6687276 LLI BPW08 WATER 6/13/2012 15:00 7/27/2012	MW-12B MW-12B_061312 6687273 LLI BPW08 WATER 6/13/2012 13:55 7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	7	1 U	1.4 J	1.3 J	1.8 J	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	1 J	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	1.6 J	620	280	1.8 J	2.1 J	19	5.6
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	13	1.7 J	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	1.1 J	170	110	6.1	6.1	13	10
74-85-1	ETHENE	ug/l		43	5.7	110	100		
74-84-0	ETHANE	ug/l		1.5 J	1 U	2.6 J	2.4 J		
74-82-8	METHANE	ug/l		120	120	7400	7500		
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l			0.0801 U	0.0801 U	0.0801 U		
7440-38-2	ARSENIC	mg/l			0.0051 U	0.0051 U	0.0051 U		
7440-70-2	CALCIUM	mg/l			162	148	145		
7439-89-6	IRON	mg/l		0.0141 U	0.0141 U	0.0141 U	0.0141 U		
7439-95-4	MAGNESIUM	mg/l			59.7	52.1	51.7		
7439-96-5	MANGANESE	mg/l			0.0585	0.0472	0.0564		
7440-23-5	SODIUM	mg/l			71.4	85.3	81		
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l		3.2 U	3.3 U	32	25.7		
24959-67-9	BROMIDE	mg/l			2 U	2.3 J	2.4 J		
16887-00-6	CHLORIDE (AS CL)	mg/l		621	141	121	126		
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l		31 J	12.9 J	76.5	81		
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l		0.04 U	0.04 U	0.04 U	0.04 U		
14797-65-0	NITROGEN, NITRITE	mg/l		0.015 U	0.015 U	0.015 U	0.015 U		
74-98-6	PROPANE	ug/l		1 U	1.1 J	1 U	1 U		
14808-79-8	SULFATE (AS SO4)	mg/l		264	261	135	130		
18496-25-8	SULFIDE	mg/l		0.054 U	0.054 U	44.4	39.4		
TOC	TOTAL ORGANIC CARBON	mg/l		0.98 J	3.8	4.3	4.2		

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-13B MW-13B_061312 6687275 LLI BPW08 WATER 6/13/2012 14:45 7/27/2012	MW-14B MW-14B_061312 6687274 LLI BPW08 WATER 6/13/2012 14:20 7/27/2012	MW-15 MW-15_061412 6688883 LLI BPW09 WATER 6/14/2012 9:20 7/27/2012	MW-16A MW-16A_061412 6688891 LLI BPW09 WATER 6/14/2012 14:20 7/27/2012	MW-16B MW-16B_061312 6687269 LLI BPW08 WATER 6/13/2012 11:30 7/27/2012	Dup of MW-16B_061312 MW-16B DUP061312 6687272 LLI BPW08 WATER 6/13/2012 12:01 7/27/2012	MW-17A MW-17A_061212 6685705 LLI BPW07 WATER 6/12/2012 14:55 7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	1.6 U	1.6 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1 U	1.2 J	1 U	4 J	4.1 J	21
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	15	15	8.1
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	2.6 J	2.2 J	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	27	1.5 J	0.8 U	8.4	4700	4800	140
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	1.6 U	1.6 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	19	19	1.2 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U	74	75	5.3
75-01-4	VINYL CHLORIDE	ug/l	57	5.4	1.8 J	110	600	590	25
74-85-1	ETHENE	ug/l		91		11	74	70	3.1 J
74-84-0	ETHANE	ug/l		2.2 J		1 U	2.5 J	2.3 J	12
74-82-8	METHANE	ug/l		9100		8.7 J	2600	2300	8500
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l				0.0801 U	0.0801 U	0.0801 U	
7440-38-2	ARSENIC	mg/l				0.0051 U	0.0051 U	0.0051 U	
7440-70-2	CALCIUM	mg/l				333	152	150	
7439-89-6	IRON	mg/l		0.027 J		0.0141 U	0.0141 U	0.0141 U	0.0141 U
7439-95-4	MAGNESIUM	mg/l				144	60.7 J	59.6 J	
7439-96-5	MANGANESE	mg/l				0.134	0.0669	0.0653	
7440-23-5	SODIUM	mg/l				173 J	58.9	58.5	
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l		33		5.4	24.6	21.7	5.9
24959-67-9	BROMIDE	mg/l				2 U	2 U	2 U	
16887-00-6	CHLORIDE (AS CL)	mg/l		241		237	81.5	81.5	484
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l		117		26.5 J	65.1	69.7	28.8 J
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l		0.04 U			0.04 U	0.04 U	0.04 U
14797-65-0	NITROGEN, NITRITE	mg/l		0.015 U			0.015 U	0.015 U	0.015 U
74-98-6	PROPANE	ug/l		1 U		1 U	1 U	1 U	1 U
14808-79-8	SULFATE (AS SO4)	mg/l		126		1100	165	177	172
18496-25-8	SULFIDE	mg/l		48.2			33.1	29.7	0.054 U
TOC	TOTAL ORGANIC CARBON	mg/l		10.2		9.5	4.1	4.3	4.4

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW-17B MW-17B_061212 6685708 LLI BPW07 WATER 6/12/2012 16:40 7/27/2012	MW-18A MW-18A_061212 6685704 LLI BPW07 WATER 6/12/2012 12:10 7/27/2012	MW-18B MW-18B_061212 6685702 LLI BPW07 WATER 6/12/2012 10:20 7/27/2012	MW-19B MW-19B_061212 6685706 LLI BPW07 WATER 6/12/2012 15:00 7/27/2012	PMW-1 PMW-1_061512 6690457 LLI BPW10 WATER 6/15/2012 12:45 7/27/2012	PMW-2 PMW-2_061512 6690458 LLI BPW10 WATER 6/15/2012 12:45 7/27/2012	PMW-3 PMW-3_061512 6690462 LLI BPW10 WATER 6/15/2012 13:25 7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	43	4.2 J	1 U	1 U	32	110	4.5 J
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	1.1 J	0.8 U	0.8 U	0.8 U	10	0.8 U
75-00-3	CHLOROETHANE	ug/l	1.5 J	1 U	1 U	1 U	21	160	6.7
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	20	56	110	2.3 J	7.9	3200	300
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.82 J	0.94 J	0.8 U	0.8 U	0.8 U	68	1.6 J
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	21	1 U	1 U	3 J	3 J	1.2 J
75-01-4	VINYL CHLORIDE	ug/l	18	2.4 J	140	1.6 J	3.2 J	870	200
74-85-1	ETHENE	ug/l	72	1 U	3.6 J		9.6	520	160
74-84-0	ETHANE	ug/l	45	1 U	1 U		13	17	31
74-82-8	METHANE	ug/l	23000	11 J	110		6200	9200	3300
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l	0.0801 U		0.0801 U		0.0801 U	0.0801 U	0.0801 U
7440-38-2	ARSENIC	mg/l	0.0051 U		0.0051 U		0.0051 U	0.0051 U	0.0051 U
7440-70-2	CALCIUM	mg/l	194		158		78.4	241	178
7439-89-6	IRON	mg/l	0.19 J	0.0141 U	0.0141 U		2.72	12.3	1.59
7439-95-4	MAGNESIUM	mg/l	57.1		58.8		57.2	96.2	79
7439-96-5	MANGANESE	mg/l	0.0833		0.0889		1.13	0.781	0.325
7440-23-5	SODIUM	mg/l	351		68.2		41.7	51.1	47.9
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l	9.6	3.1 U	3.5 U				
24959-67-9	BROMIDE	mg/l	2.6		2 U		4.5 J	4.1 J	2.5 J
16887-00-6	CHLORIDE (AS CL)	mg/l	739	108	102		12	41.3	28.7
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l	49.2 J	12.8 U	12.8 U				
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.04 U	0.04 U	0.04 U				
14797-65-0	NITROGEN, NITRITE	mg/l	0.015 U	0.015 U	0.015 U				
74-98-6	PROPANE	ug/l	1 U	1 U	1 U				
14808-79-8	SULFATE (AS SO4)	mg/l	116	129	268		5.3	3.6 J	21.6
18496-25-8	SULFIDE	mg/l	11.6	0.054 U	0.054 U				
TOC	TOTAL ORGANIC CARBON	mg/l	3.8	1	4		350	290	72.4

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	PMW-4 PMW-4_061512 6690455 LLI BPW10 WATER 6/15/2012 9:40 7/27/2012	PMW-5 PMW-5_061512 6690456 LLI BPW10 WATER 6/15/2012 11:35 7/27/2012	PMW-7 PMW-7_061512 6690454 LLI BPW10 WATER 6/15/2012 9:05 7/27/2012	PMW-8 PMW-8_061412 6688894 LLI BPW09 WATER 6/14/2012 16:30 7/27/2012	INJ-1 INJ-1_061812 6692573 LLI BPW11 WATER 6/18/2012 10:10 7/27/2012	INJ-2 INJ-2_061512 6690463 LLI BPW10 WATER 6/15/2012 15:15 7/27/2012	INJ-5A INJ-5A_061812 6692574 LLI BPW11 WATER 6/18/2012 11:00 7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	1.9 J
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	4.7 J	13	1 U	2 J	33	180
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	2.3 J	0.8 U	0.8 U	0.8 U	5.1
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	15	22	220
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	5.9	1.5 J	130	2.2 J	1 J	59	180
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	2.3 J	1.2 J	0.8 U	0.8 U	2.3 J	14
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	2.3 J	1 U	1 U	3.2 J	1.1 J
75-01-4	VINYL CHLORIDE	ug/l	7.5	6.3	44	5.7	2.7 J	14	65
74-85-1	ETHENE	ug/l	10	110	56	130	42	120	140
74-84-0	ETHANE	ug/l	1.8 J	12	8.4	1 U	16	6.9	4.6 J
74-82-8	METHANE	ug/l	9100	17000	9700	880	14000	15000	11000
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l		0.0801 U	0.0801 U		0.0801 U	0.0801 U	0.0801 U
7440-38-2	ARSENIC	mg/l		0.0051 U	0.0051 U		0.0051 U	0.0051 U	0.0132 J
7440-70-2	CALCIUM	mg/l		199	142		285	215	240
7439-89-6	IRON	mg/l		0.0223 J	0.0214 J		6.08	0.593	25.8
7439-95-4	MAGNESIUM	mg/l		62.9	42.9		88.4	70.7	109
7439-96-5	MANGANESE	mg/l		0.0743	0.0692		0.788	0.712	0.931
7440-23-5	SODIUM	mg/l		105	199		41.1	36.3	204
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l							
24959-67-9	BROMIDE	mg/l	2 U	2.8 J	2 U	2 U	2.2 J	2.6 J	21.1
16887-00-6	CHLORIDE (AS CL)	mg/l	42.9	176	277	103	18.6 J	16.2	39 J
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l							
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l							
14797-65-0	NITROGEN, NITRITE	mg/l							
74-98-6	PROPANE	ug/l				1 U			
14808-79-8	SULFATE (AS SO4)	mg/l	97.2	88.4	166	241	3.3 J	11.4	2 J
18496-25-8	SULFIDE	mg/l							
TOC	TOTAL ORGANIC CARBON	mg/l	58.2	23.1	2.8	3.4	277	197	412

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	INJ-5B INJ-5B_061512 6690464 LLI BPW10 WATER 6/15/2012 16:00 7/27/2012	FIELDQC TB12133-A 6685710 LLI BPW07 WATER 5/31/2012 0:00 7/27/2012	FIELDQC TB12133-B 6687266 LLI BPW08 WATER 5/31/2012 0:00 7/27/2012	FIELDQC TB12133-C 6688893 LLI BPW09 WATER 5/31/2012 0:00 7/27/2012	FIELDQC TB12133-D 6690465 LLI BPW10 WATER 5/31/2012 0:00 7/27/2012	FIELDQC TB12133-E 6692572 LLI BPW11 WATER 5/31/2012 0:00 7/27/2012
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	23	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	16	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	88	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	2.6 J	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	5.4	1 U	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	22	1 U	1 U	1 U	1 U	1 U
74-85-1	ETHENE	ug/l	100					
74-84-0	ETHANE	ug/l	5.4					
74-82-8	METHANE	ug/l	9000					
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0801 U					
7440-38-2	ARSENIC	mg/l	0.0051 U					
7440-70-2	CALCIUM	mg/l	224					
7439-89-6	IRON	mg/l	0.0216 J					
7439-95-4	MAGNESIUM	mg/l	82.8					
7439-96-5	MANGANESE	mg/l	0.994					
7440-23-5	SODIUM	mg/l	67.2					
	OTHER							
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l						
24959-67-9	BROMIDE	mg/l	2 U					
16887-00-6	CHLORIDE (AS CL)	mg/l	47.6					
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l						
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l						
14797-65-0	NITROGEN, NITRITE	mg/l						
74-98-6	PROPANE	ug/l						
14808-79-8	SULFATE (AS SO4)	mg/l	6.5					
18496-25-8	SULFIDE	mg/l						
TOC	TOTAL ORGANIC CARBON	mg/l	334					

APPENDIX B
GROUNDWATER SAMPLING LOGS (SPRING 2012)

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-2B_061312 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)?

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(39.82 - 7.95) x 0.16 = 5.10 gal

Method: Geopump/Low Flow Date/Time: 6/13/12 0940

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	G		mg/L	NTU	mS/cm	°C	g/L	mv	
900	7.95	250	0.00	6.33	0.63	16.60	1.56	17.13	1.01	-194	clear
905	7.95	250	1.25	6.90	1.89	4.72	1.81	15.24	1.16	-287	clear
910	8.40	250	2.50	7.09	0.00	5.29	1.85	15.00	1.19	-308	clear
915	8.40	250	3.75	7.13	0.00	5.44	1.83	14.88	1.17	-315	clear
920	8.30	250	5.00	7.19	0.00	3.11	1.76	15.04	1.13	-326	clear
925	8.28	250	6.25	7.19	0.00	2.85	1.74	15.17	1.11	-331	clear
930	8.29	250	7.50	7.19	0.00	3.35	1.83	15.23	1.17	-334	clear
935	8.30	250	8.75	7.17	0.00	4.24	1.84	15.16	1.18	-333	clear
940	8.30	250	10.00	7.18	0.00	2.19	1.72	15.07	1.12	-336	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 0940 Total Volume of Water purged: 2.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.18	Ferrous Iron (mg/L)	0.00
Spec. Cond.(mS/cm)	1.72	Manganese	
Turbidity (NTU)	2.19	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	222
Temp.(°C)	15.07	Hydrogen Sulfide	3
TDS (g/L)	1.12	Alkalinty	28 drops/ 560
ORP (mv)	-336.00		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-4A_061212 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(18.17 - 2.58) x 0.16 = 2.49 TD = 18.17

Method: Geopump/Low Flow Date/Time: 6/12/12 0935

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal		mg/L	NTU	mS/cm	°C	g/L	mv	
935	2.58	250	0.00	6.08	0.00	488	2.43	20.70	1.57	-8	Susp solids
940	5.37	250	1.25	6.21	13.79	205	2.48	19.14	1.59	-29	Susp solids
945	7.63	250	2.50	6.20	8.91	201	2.42	19.55	1.56	-32	Susp solids
950	9.00	100	3.00	6.20	5.56	183	2.41	19.82	1.55	-40	Vegetable oil
955	9.92	100	3.50	6.18	2.32	176	2.43	20.16	1.56	-42	Vegetable oil
1000	10.31	100	4.00	6.19	2.11	102	2.40	20.88	1.54	-45	Vegetable oil
1005	10.25	100	4.50	6.21	1.79	163	2.48	20.74	1.59	-49	Vegetable oil and susp solids
1010	10.62	100	5.00	6.26	1.47	381	2.35	21.66	1.50	-57	vegetable oil
1015	10.93	100	5.50	6.26	1.46	432	2.34	21.66	1.50	-59	vegetable oil
1020	11.52	100	6.00	6.30	1.42	295	2.27	21.51	1.45	-65	vegetable oil
1025	11.60	100	6.50	6.34	1.45	OR	2.30	20.06	1.47	-70	vegetable oil
1030	11.62	100	7.00	6.37	3.76	OR	2.28	20.45	1.47	-72	vegetable oil
1035	11.62	100	7.50	6.42	3.80	OR	2.29	20.14	1.47	-69	vegetable oil
1040	11.62	100	8.00	6.43	4.06	OR	2.29	20.31	1.45	-68	vegetable oil
1050	11.63	100	9.00	6.46	4.14	884	2.28	20.48	1.45	-67	vegetable oil

Method: Geopump/Low Flow Date/Time: 6/12/12 1115 Total Volume of Water purged:

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L)	
Spec. Cond.(mS/cm)		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)			

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Nam *Hyde Park Facility* Well ID: MW-4A_061212 Well Diameter: 2 Inches

Sampler Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(18.17 - 2.58) x 0.16 = 2.49

Method: Geopump/Low Flow Date/Tim 6/12/12 0935

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1055	11.64	100	9.5	6.44	3.61	437	2.26	20.58	1.45	-64	vegetable oil
1100	11.63	100	10.0	6.46	3.56	332	2.24	21.03	1.43	-62	vegetable oil
1105	11.63	100	10.5	6.46	3.43	280	2.23	21.04	1.42	-62	vegetable oil
1110	11.63	100	11.0	6.44	3.27	377	2.24	20.60	1.44	-61	vegetable oil
1115	11.64	100	11.5	6.41	3.45	254	2.24	20.42	1.43	-60	vegetable oil

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1115 Total Volume of Water purged: 3.30 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.41	Ferrous Iron (mg/L	7.2
Spec. Cond.(mS/cm	2.24	Manganese	
Turbidity (NTU)	234	Sulfate	
DO (mg/L)	3.45	Carbon Dioxide	594
Temp.(°C)	20.42	Hydrogen Sulfide	0
TDS (g/L)	1.43	Alkalinty	55 drops/ 1100
ORP (mv)	-60		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE& Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Dissolved Iron	1-500mL plastic	None	6010B
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Commer Vegetable oil was present, and skewed the turbidity readings. Collect sulfide sample on 6/13/12 at 0835 after purging for five minutes due to bottle

MEE - Methane, ethane, ethene. Dissolved Inorganics - Al, As, Ca, K, Mg, Mn, Na. VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Nam *Hyde Park Facility* Well ID: MW-4A_062512 Well Diameter: 2 Inches

Samplers Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

Method: Geopump/Low Flow Date/Tim 6/25/12 1110

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(18.44 - 3.83) x 0.16 = 2.34

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1110	3.83	200	0.00	7.10	2.28	600	2.02	21.14	1.29	-122	vegetable oil
1115	6.84	200	0.25	6.83	0.40	414	1.99	18.99	1.27	-129	vegetable oil
1120	7.70	200	0.50	6.79	0.33	363	1.97	19.15	1.26	-129	vegetable oil
1125	9.95	100	0.75	6.69	0.16	772	1.97	19.46	1.26	-131	Vegetable oil and odor
1130	10.43	100		6.65	0.25	650	1.98	19.96	1.27	-133	Vegetable oil and odor
1135	10.80	100	1.00	6.62	0.44	485	2.00	20.72	1.28	-134	Vegetable oil and odor
1140	11.47	100		6.63	0.29	580	2.01	21.11	1.29	-139	Vegetable oil and odor
1145	11.95	100	1.25	6.65	0.22	679	2.03	21.38	1.30	-143	Vegetable oil and odor
1150	11.90	100		6.64	0.14	657	2.02	21.61	1.30	-145	Vegetable oil and odor
1155	11.85	100	1.50	6.64	0.11	573	2.00	21.46	1.28	-145	Vegetable oil and odor
1200	11.85	100		6.63	0.06	761	1.97	21.31	1.28	-144	Vegetable oil and odor
1205	11.83	100	1.75	6.61	0.05	OR	1.99	21.03	1.28	-144	Vegetable oil and odor
1210	11.84	100	1.875	6.65	0.02	OR	2.01	21.9	1.28	-140	Vegetable oil and odor

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/25/12 1210 Total Volume of Water purged:

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.65	Ferrous Iron (mg/L)	
Spec. Cond.(mS/cm	2.01	Manganese	
Turbidity (NTU)	>1000	Sulfate	
DO (mg/L)	0.02	Carbon Dioxide	
Temp.(°C)	21.90	Hydrogen Sulfide	
TDS (g/L)	-140	Alkalinty	
ORP (mv)	1.28	* NOTE * HACH test kits are only required for	

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
BOD	1-500 mL plastic	none	SM 5210B

Commen Resample for BOD only

MEE - Methane, ethane, ethene. Dissolved Inorganics - Al, As, Ca, K, Mg, Mn, Na. VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-5A_061212 Well Diameter: 2 Inches

Samplers: Rob Piurek Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
DTW = 10.37 TD = 21.30

Method: Geopump/Low Flow Date/Time: 6/12/12 1450

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1450	10.37	300	0.00	6.56	3.80	36.90	0.580	26.04	0.375	73	clear
1500	10.85	300	0.75	7.99	2.65	49.40	0.601	19.78	0.384	60	clear
1510	10.87	300	1.50	8.06	2.08	18.30	0.611	18.91	0.391	65	clear
1515	10.87	300	1.75	8.05	1.96	9.03	0.617	18.67	0.395	67	clear
1520	10.87	300	2.50	8.04	1.69	7.70	0.622	18.35	0.398	69	clear
1525	10.87	300	3.00	8.04	1.50	4.84	0.627	18.24	0.401	72	clear
1530	10.87	300	3.25	7.98	1.20	5.41	0.630	18.23	0.403	73	clear
1535	10.87	300	3.75	7.94	1.13	7.60	0.635	18.24	0.406	75	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1540 Total Volume of Water purged: 4

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.94	Ferrous Iron (mg/L)	0.2
Spec. Cond.(mS/cm)	0.635	Manganese	
Turbidity (NTU)	7.60	Sulfate	
DO (mg/L)	1.13	Carbon Dioxide	106
Temp.(°C)	18.24	Hydrogen Sulfide	0.0
TDS (g/L)	0.406	Alkalinty	12 drops/ 240
ORP (mv)	75		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE& Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Dissolved Iron	1-500mL plastic	None	6010B
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-5B_061312 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(39.5 - 10.10) (0.16) = 4.7

Method: Geopump/Low Flow Date/Time: 6/13/12 1135

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
1040	10.1	250	0.00	7.65	2.61	392	1.04	17.33	0.667	-148	
1045	10.1	250	0.25	7.57	5.46	236	1.06	17.07	0.680	-153	
1050	10.1	250	0.50	7.49	7.89	131	1.09	16.95	0.698	-140	
1055	10.1	250	1.00	7.43	7.97	14.5	1.10	16.87	0.706	-118	
1100	10.1	250	1.50	7.39	7.24	7.9	1.10	16.96	0.705	-105	
1105	10.1	250	2.00	7.37	6.97	18.0	1.09	16.98	0.698	-99	
1110	10.1	250	2.25	7.35	6.78	6.8	1.09	17.19	0.697	-95	
1115	10.1	250	2.50	7.32	6.65	5.2	1.07	17.39	0.685	-90	
1120	10.1	250	2.75	7.30	6.60	2.7	1.06	17.18	0.676	-87	
1125	10.1	250	3.00	7.29	6.67	3.4	1.05	17.17	0.675	-89	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1135 Total Volume of Water purged: 3 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.29	Ferrous Iron (mg/L)	0.7
Spec. Cond.(mS/cm)	1.05	Manganese	
Turbidity (NTU)	3.40	Sulfate	
DO (mg/L)	6.67	Carbon Dioxide	226
Temp.(°C)	17.17	Hydrogen Sulfide	0
TDS (g/L)	0.675	Alkalinty	16 drops/ 320
ORP (mv)	-89	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	Lab SOP
TOC	2-40mL amber glass	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Dissolved Iron	1-500mL plastic	None	6010B
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-6_061312 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(43.0 - 7.73) x .16 = 5.6 gal

Method: Geopump/Low Flow Date/Time: 6/13/12 0925

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
840	7.73	250	0.00	7.03	2.51	0.00	1.140	14.68	0.730	-228	water clear
845	7.76	250	0.50	7.14	0.95	0.00	1.060	14.04	0.679	-245	water clear
850	7.78	250	0.75	7.30	0.00	0.00	0.988	13.46	0.632	-267	water clear
855	7.78	250	1.00	7.32	0.00	0.00	0.996	13.29	0.637	-276	water clear
900	7.78	250	1.50	7.33	0.00	0.00	1.000	13.25	0.641	-285	water clear
905	7.78	250	2.00	7.33	0.00	0.00	1.000	13.24	0.642	-289	water clear
910	7.78	250	2.50	7.33	0.00	0.00	1.010	13.26	0.643	-295	water clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 0925 Total Volume of Water purged: 2.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.33	Ferrous Iron (mg/L)	0.10
Spec. Cond.(mS/cm)	1.01	Manganese	
Turbidity (NTU)	0.00	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	196.00
Temp.(°C)	13.26	Hydrogen Sulfide	5.00
TDS (g/L)	0.643	Alkalinty	16 drops/ 320
ORP (mv)	-295		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-7A_061412 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(20 - 6.4) x .16 = 2.1

Method: Geopump/Low Flow Date/Time: 6/14/12 1555

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1340	6.4	250	0.00	6.10	17.06	336	2.12	25.93	1.35	-94	Water cloudy
1345	6.4	250	0.25	6.05	13.58	324	2.13	24.84	1.36	-106	Water cloudy
1350	6.4	250	0.50	5.97	8.88	269	2.16	22.94	1.38	-131	Water cloudy
1355	6.3	250	0.75	5.94	7.12	199	2.20	21.90	1.41	-150	Water cloudy
1400	6.3	250	1.00	5.93	6.15	296	2.22	21.85	1.42	-159	Water cloudy
1405	6.3	250	1.25	5.93	5.55	177	2.22	21.75	1.42	-163	Water cloudy
1410	6.3	250	1.50	5.93	5.25	244	2.22	21.20	1.42	-165	Water cloudy
1415	6.3	250	1.75	5.92	5.20	253	2.24	20.17	1.43	-166	Water cloudy
1420	6.3	250	2.00	5.92	4.89	206	2.25	20.03	1.44	-166	Water cloudy
1425	6.3	250	2.25	5.91	4.35	241	2.25	20.08	1.44	-164	Water cloudy
1430	6.3	250	2.50	5.92	4.23	200	2.30	19.99	1.47	-143	Change tubing
1455	18.6	250	3.00	6.18	2.57	823	2.22	19.31	1.43	-114	
1500	19.6	250	3.25	6.45	2.41	732	2.08	17.79	1.33	-101	
1505	20.0	250	3.50	6.41	6.24	840	2.10	17.32	1.35	-103	
1510	19.6	250	4.00	6.44	1.84	675	2.14	18.20	1.37	-107	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1555 Total Volume of Water purged: 5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.62	Ferrous Iron (mg/L)	5.3
Spec. Cond.(mS/cm)	1.92	Manganese	
Turbidity (NTU)	645	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	
Temp.(°C)	18.11	Hydrogen Sulfide	0.3
TDS (g/L)	1.22	Alkalinty	
ORP (mv)	-117	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2-40mL amber glass	H3PO4	5310C
Dissolved Inorganics	1-500mL plastic	None	SW6010B

Comments: Water cloudy with vegetable oil chunks

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Nam *Hyde Park Facility* Well ID: MW-7A_061412 Well Diameter: 2 Inches

Samplers Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

Method: Geopump/Low Flow Date/Tim 6/14/12 1555

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(20 - 6.4) x .16 = 2.1

Time	DTW	ump Rat	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1515	21.1	250	4.25	6.48	0.00	510	2.06	17.43	1.33	-113	well dry
1530	20.6	250	4.35	6.54	0.00	573	2.01	18.40	1.28	-111	water oily
1535	21.6	250	4.50	6.60	0.00	516	1.92	17.58	1.23	-115	
1555	20.0	250	4.25	6.62	0.00	645	1.92	18.11	1.22	-117	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1555 Total Volume of Water purged: 5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L	
pec. Cond.(mS/cm		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)			

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Commen Water cloudy with vegetable oil chunks

MEE - Methane, ethane, ethene. Dissolved Inorganics - Al, As, Ca, K, Mg, Mn, Na. VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-7B_061412 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(43.4 - 8.5) x .16 = 5.5

Method: Geopump/Low Flow Date/Time: 6/14/12 1220

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1015	8.50	250	0.0	6.53	14.69	0.0	0.894	16.74	0.573	-293	Turbidity wasn't reading
1020	8.50	250	0.25	6.65	5.00	0.0	0.892	17.26	0.571	-298	Turbidity wasn't reading
1025	8.50	250	0.50	6.76	0.69	0.0	0.895	17.38	0.573	-307	Turbidity wasn't reading
1030	8.50	250	0.75	6.86	0.00	839	0.899	17.57	0.575	-312	Water cloudy
1035	8.50	250	1.00	6.92	0.00	638	0.903	17.64	0.571	-315	Water cloudy
1040	8.50	250	1.25	6.98	0.00	427	0.913	17.84	0.584	-319	Water cloudy
1045	8.50	250	1.50	7.03	0.00	347	0.907	18.29	0.581	-322	Water cloudy
1050	8.50	250	2.00	7.06	0.00	303	0.901	18.17	0.576	-324	Water cloudy
1055	8.50	250	2.50	7.09	0.00	252	0.915	18.52	0.585	-326	Water cloudy
1100	8.50	250	3.00	7.11	0.00	210	0.922	18.72	0.590	-327	Water cloudy
1105	8.50	250	3.50	7.14	0.00	156	0.917	18.90	0.587	-329	Water cloudy
1110	8.50	250	4.00	7.15	0.00	148	0.910	19.17	0.583	-331	Water cloudy
1115	8.50	250	4.50	7.17	0.00	131	0.905	19.28	0.580	-332	Water cloudy
1120	8.50	250	4.75	7.18	0.00	128	0.895	19.55	0.573	-333	Water cloudy
1125	8.50	250	5.00	7.18	0.00	128	0.888	19.77	0.569	-333	Water cloudy

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1220 Total Volume of Water purged: 8 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.24	Ferrous Iron (mg/L)	0.20
Spec. Cond.(mS/cm)	0.865	Manganese	
Turbidity (NTU)	47.8	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	290
Temp.(°C)	19.12	Hydrogen Sulfide	5.00
TDS (g/L)	0.554	Alkalinty	18 drops/360
ORP (mv)	-331		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	1-120mL amber glass	H3PO4	5310C
Dissolved Inorganics	1-500mL plastic	None	SW6010B

Comments: MS/MSD taken (MW-7B_ 061412MS and MW-7B_061412MSD taken for same parameters)

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Nam *Hyde Park Facility* Well ID: MW-7B_061412 Well Diameter: 2 Inches

Samplers Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(43.4 - 8.5) x .16 = 5.5

Method: Geopump/Low Flow Date/Tim 6/14/12 1220

Time	DTW	ump Rat	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
1130	8.50	250	5.25	7.18	0.00	125.0	0.887	19.83	0.568	-333	Water slightly cloudy
1135	8.50	250	5.50	7.20	0.00	102.0	0.892	19.97	0.571	-334	Water slightly cloudy
1140	8.50	250	5.75	7.22	0.00	82.1	0.919	18.46	0.588	-331	Water slightly cloudy
1145	8.50	250	6.00	7.21	0.00	87.9	0.927	18.25	0.593	-328	Water slightly cloudy
1150	8.50	250	6.25	7.21	0.00	85.4	0.921	18.72	0.590	-328	Water slightly cloudy
1155	8.50	250	6.50	7.19	0.00	186.0	0.921	18.67	0.589	-329	Water slightly cloudy
1200	8.50	250	6.75	7.20	0.00	104.0	0.917	18.69	0.587	-327	Water slightly cloudy
1205	8.50	250	7.00	7.22	0.00	85.4	0.905	18.92	0.580	-327	Water slightly cloudy
1210	8.50	250	7.25	7.23	0.00	68.1	0.874	19.16	0.567	-330	Water slightly cloudy
1215	8.50	250	7.50	7.24	0.00	63.30	0.874	18.68	0.559	-332	Water slightly cloudy
1220	8.50	250	7.75	7.24	0.00	47.80	0.865	19.12	0.554	-331	Water slightly cloudy

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1220 Total Volume of Water purged: 8 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH		Ferrous Iron (mg/L	
pec. Cond.(mS/cm		Manganese	
Turbidity (NTU)		Sulfate	
DO (mg/L)		Carbon Dioxide	
Temp.(°C)		Hydrogen Sulfide	
TDS (g/L)		Alkalinty	
ORP (mv)		* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	1-120mL amber glass	H3PO4	5310C
Dissolved Inorganics	1-500mL plastic	None	SW6010B

Commen

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-8_061212 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(48.71 - 10.95) x 0.16 = 5.72 gal

Method: Geopump/Low Flow Date/Time: 6/12/12 1655

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	G		mg/L	NTU	mS/cm	°C	g/L	mv	
1610	10.95	200	0.00	7.48	0.00	21.70	1.06	24.17	0.679	-53	clear
1615	11.03	200	0.25	7.41	0.46	28.20	1.01	21.10	0.648	-55	clear
1620	11.04	200	0.50	7.42	1.08	5.49	0.86	19.17	0.550	-34	clear
1625	11.04	200	0.75	7.37	1.05	7.33	0.865	18.27	0.553	-54	clear
1630	11.06	200	1.00	7.34	0.78	10.30	0.874	18.14	0.559	-88	clear
1635	11.06	200	1.25	7.25	0.54	5.65	0.883	17.52	0.566	-91	clear
1640	11.06	200	1.50	7.27	0.23	3.84	0.886	17.74	0.568	-103	clear
1645	11.06	200	1.75	7.24	0.00	6.82	0.904	17.97	0.578	-108	clear
1650	11.06	200	2.00	7.24	0.00	6.53	0.903	17.73	0.580	-111	clear
1655	11.06	200	2.25	7.21	0.00	7.16	0.904	18.03	0.579	-113	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1655 Total Volume of Water purged: 2.25

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.21	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	0.904	Manganese	
Turbidity (NTU)	7.16	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	84
Temp.(°C)	18.03	Hydrogen Sulfide	0.40
TDS (g/L)	0.579	Alkalinty	19 drops/ 380
ORP (mv)	-113		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-10A_061312 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(20.61 - 9.61) (0.16) = 1.816

Method: Geopump/Low Flow Date/Time: 6/13/12 1140

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1045	9.61	200	0.0	7.62	9.20	385	3.07	18.99	1.94	-176	Brown/ Suspended solids
1050		200		7.52	2.59	34.7	2.74	18.16	1.75	-180	Brown
1055		200		7.46	1.83	21.2	2.74	17.93	1.75	-179	clear
1100	9.77	200		7.44	1.31	11.3	2.79	17.95	1.79	-180	clear
1105	9.80	200	1.0	7.42	0.94	11.3	2.86	18.32	1.83	-181	clear
1110	9.80	200		7.40	0.66	6.41	2.82	18.29	1.80	-180	clear
1115	9.80	200		7.39	0.45	5.43	2.80	18.18	1.79	-179	clear
1125	9.78	200		7.37	0.01	8.99	2.79	18.38	1.79	-178	clear
1130	9.78	200	2.00	7.36	0.00	3.87	2.82	18.56	1.80	-177	clear
1135	9.78	200		7.35	0.00	6.09	2.80	18.45	1.79	-176	clear
1140	9.80	200	2.50	7.34	0.00	3.24	2.78	18.68	1.78	-176	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1140 Total Volume of Water purged: 2.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.34	Ferrous Iron (mg/L)	1.9
Spec. Cond.(mS/cm)	2.78	Manganese	
Turbidity (NTU)	3.24	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	344
Temp.(°C)	18.68	Hydrogen Sulfide	0
TDS (g/L)	1.78	Alkalinty	380
ORP (mv)	-176		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Dissolved Iron	1-500mL plastic	None	6010B
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-10B_061412 Well Diameter: 4 Inches

Samplers: Rob Piurek Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
DTW = 8.98 TD = 38.58

Method: Geopump/Low Flow Date/Time: 6/14/12 1040

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1040	8.98	250	0.0	6.68	0.73	7.94	0.890	20.13	0.570	-71	clear
1050	9.00	250	0.75	6.93	0.00	1.88	0.900	18.51	0.576	-96	clear
1100	9.00	250	1.25	6.98	0.01	1.00	0.903	18.52	0.578	-105	clear
1110	9.00	250	2.0	6.99	0.03	0.66	0.900	18.91	0.576	-111	clear
1115	9.00	250	2.25	7.00	0.04	0.29	0.898	18.95	0.574	-112	clear
1120	9.00	250	2.75	7.01	0.04	0.25	0.896	19.02	0.573	-110	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1120 Total Volume of Water purged: 2.75

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.01	Ferrous Iron (mg/L)	0.5
Spec. Cond.(mS/cm)	0.896	Manganese	
Turbidity (NTU)	0.25	Sulfate	
DO (mg/L)	0.04	Carbon Dioxide	238
Temp.(°C)	19.02	Hydrogen Sulfide	0.0
TDS (g/L)	0.573	Alkalinty	16 drops/ 320
ORP (mv)	-110		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	1-120mL amber glass	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-11B_061412 Well Diameter: 4 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(36.72-8.68) x 0.16 = 18.65 gal

Method: Geopump/Low Flow Date/Time: 6/14/2012 0:00

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
1040	8.68	250	0.0	7.36	0.00	3.18	1.04	18.08	0.662	-313	Clear
1045	9.04	250	0.25	7.28	0.00	2.59	1.07	16.84	0.685	-329	Clear
1050	8.91	250	0.5	7.22	0.00	2.26	1.08	18.13	0.695	-337	Sulfur odor
1055	8.92	250	0.75	7.18	0.00	3.99	1.09	18.45	0.703	-345	Sulfur odor
1100	8.92	250	1.0	7.18	0.00	2.66	1.09	18.66	0.699	-348	Sulfur odor
1105	8.95	250	1.25	7.15	0.00	2.81	1.10	18.29	0.704	-351	clear, sulfur odor
1110	8.92	250	1.50	7.16	0.00	2.30	1.10	18.43	0.706	-353	clear, sulfur odor

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1110 Total Volume of Water purged: ~1.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.16	Ferrous Iron (mg/L)	0
Spec. Cond.(mS/cm)	1.10	Manganese	
Turbidity (NTU)	2.30	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	190
Temp.(°C)	18.43	Hydrogen Sulfide	4
TDS (g/L)	0.706	Alkalinty	26 drops/ 520
ORP (mv)	-353		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments: Duplicate sample for all parameters taken (Dup_061412)

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-12A_061312 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(14.5 - 4.65) x 0.16 = 1.5 gal

Method: Geopump/Low Flow Date/Time: 6/13/12 1500

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
1425	4.65	250	0.0	7.17	0.80	27.8	0.673	17.50	0.427	-115	
1430	4.73	250	0.5	7.13	2.62	17.0	0.767	16.42	0.489	-107	
1435	4.73	250	1.0	7.10	2.39	10.2	0.829	16.98	0.529	-121	
1440	4.73	250	1.5	7.09	0.50	5.9	0.867	16.41	0.554	-117	
1445	4.73	250	2.0	7.09	0.00	4.3	0.878	16.17	0.562	-114	
1450	4.73	250	2.5	7.09	0.00	3.9	0.882	16.00	0.564	-113	
1455	4.73	250	3.0	7.08	0.00	4.6	0.883	16.08	0.565	-112	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1500 Total Volume of Water purged: 3 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.08	Ferrous Iron (mg/L)	1.4
Spec. Cond.(mS/cm)	0.883	Manganese	
Turbidity (NTU)	4.60	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	270
Temp.(°C)	16.08	Hydrogen Sulfide	0
TDS (g/L)	0.565	Alkalinty	21 drops/ 420
ORP (mv)	-112		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-12B_061312 Well Diameter: 4 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(30 - 3.17) x 0.32 = 8.5

Method: Geopump/Low Flow Date/Time: 6/13/12 1355

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1320	3.17	250	0.00	7.54	5.08	0.00	0.506	18.78	0.324	-50	
1325	3.17	250	0.25	7.27	0.78	0.00	0.558	16.88	0.356	-102	
1330	3.18	250	0.50	7.25	0.16	0.00	0.566	16.53	0.362	-108	
1335	3.18	250	1.00	7.21	0.31	0.00	0.572	16.17	0.366	-116	
1340	3.18	250	1.50	7.19	0.15	0.00	0.577	15.99	0.369	-120	
1345	3.18	250	2.00	7.19	0.00	0.00	0.579	15.79	0.371	-124	
1350	3.18	250	2.50	7.19	0.00	0.00	0.589	15.57	0.377	-128	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1355 Total Volume of Water purged: 2.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.19	Ferrous Iron (mg/L)	0.40
Spec. Cond.(mS/cm)	0.589	Manganese	
Turbidity (NTU)	0.00	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	168.00
Temp.(°C)	15.57	Hydrogen Sulfide	0.30
TDS (g/L)	0.377	Alkalinty	12 drops/ 240
ORP (mv)	-128		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-13B_061312 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(36.48 - 7.46) x 0.16 = 4.64

Method: Geopump/Low Flow Date/Time: 6/13/12 1350

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1350	7.46	200	0.0	7.71	0.00	Overrange	2.34	25.94	1.04	32	Very dirty
1355	7.65	200	0.25	7.31	0.00	Overrange	5.99	19.47	3.77	-96	Dirty
1400	7.73	200	0.50	7.42	0.00	Overrange	4.05	19.46	2.56	-130	Dirty
1405	7.31	200	0.75	7.31	0.00	403	3.45	19.75	2.20	-114	Dirty
1410	7.55	200	1.0	7.26	0.00	235	3.26	20.07	2.08	-104	Dirty
1415	7.60	200	1.25	7.24	0.00	189	3.09	19.62	1.97	-99	Clear, particles
1420	7.63	200	1.50	7.23	0.00	114	2.84	19.09	1.82	-93	Clear, particles
1425	7.60	200	1.75	7.20	0.00	92.7	2.94	19.42	1.88	-88	clear
1430	7.60	200	2.0	7.20	0.00	60.7	2.84	19.64	1.81	-86	clear
1435	7.60	200	2.25	7.20	0.00	37.7	2.70	19.69	1.73	-84	clear
1440	7.60	200	2.50	7.18	0.00	32.5	2.69	20.02	1.72	-82	clear
1445	7.60	200	2.75	7.18	0.00	35.70	2.68	19.91	1.72	-81	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1445 Total Volume of Water purged: 2.75 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.18	Ferrous Iron (mg/L)	0.8
Spec. Cond.(mS/cm)	2.68	Manganese	
Turbidity (NTU)	35.7	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	110
Temp.(°C)	19.91	Hydrogen Sulfide	0
TDS (g/L)	1.72	Alkalinty	19 drops/ 380
ORP (mv)	-81		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-14B_061312 Well Diameter: 2 Inches

Samplers: Rob Piurek Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
DTW = 5.40 TD = 31.45

Method: Geopump/Low Flow Date/Time: 6/13/12 1335

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	Gal		mg/L	NTU	mS/cm	°C	g/L	mv	
1335	5.40	300	0.0	7.95	2.32	299	2.78	27.60	1.980	-235	
1345	6.75	300	0.75	7.69	0.62	76.7	1.90	18.72	1.220	-298	
1355	6.30	225	1.25	7.57	0.71	30.3	1.62	18.37	1.050	-317	
1400	6.30	225	1.6	7.49	0.62	18.8	1.49	18.12	0.953	-326	
1405	6.30	225	1.9	7.44	0.58	13.7	1.44	17.56	0.926	-330	
1410	6.30	225	2.25	7.41	0.52	10.1	1.41	17.54	0.904	-333	
1415	6.30	225	2.6	7.38	0.46	10.2	1.39	17.47	0.890	-334	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1420 Total Volume of Water purged: 2.6 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.38	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.39	Manganese	
Turbidity (NTU)	10.20	Sulfate	
DO (mg/L)	0.46	Carbon Dioxide	278
Temp.(°C)	17.47	Hydrogen Sulfide	3.0
TDS (g/L)	0.890	Alkalinty	23 drops/ 460
ORP (mv)	-334		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	None	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Dissolved Iron	1-250mL plastic	None	6010B
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	None	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-15_061412 Well Diameter: 2 Inches

Samplers: Allison Menges, Dan Chamberland, Rob Piurek Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(26.8-4.38)*(0.16) = 3.59

Method: Geopump/Low Flow Date/Time: 6/14/12 0920

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
850	4.38	200	0.00	6.59	13.49	3.71	1.02	15.73	0.659	-170	clear
855	4.35	200	0.25	7.25	1.61	2.76	0.999	15.11	0.637	-330	clear
900	4.36	200	0.50	7.26	1.72	2.64	0.994	14.83	0.638	-333	clear
905	4.35	200	0.75	7.25	1.39	1.78	0.997	14.69	0.638	-333	clear
910	4.36	200	1.00	7.23	0.83	2.46	0.990	14.83	0.633	-331	clear
915	4.36	200	1.25	7.23	0.40	0.61	0.990	14.99	0.633	-334	clear
920	4.36	200	1.50	7.24	0.13	0.97	0.992	14.58	0.643	-331	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 0920 Total Volume of Water purged: 1.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.24	Ferrous Iron (mg/L)	0.00
Spec. Cond.(mS/cm)	0.992	Manganese	
Turbidity (NTU)	0.97	Sulfate	
DO (mg/L)	0.13	Carbon Dioxide	236
Temp.(°C)	14.58	Hydrogen Sulfide	5.0
TDS (g/L)	0.643	Alkalinty	17 drops/ 340
ORP (mv)	-331		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments: Traffic safety plan in place, contacted Niagara Falls police traffic division (286-4563)

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-16A_061412 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(19.26 - 6.94) x 0.16 = 1.97

Method: Geopump/Low Flow Date/Time: 6/14/2012 0:00

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	G		mg/L	NTU	mS/cm	°C	g/L	mv	
1320	7.40	100	0.00	7.46	22.03	6.21	2.92	27.26	1.86	-35	Poor flow
1325	8.05	100	0.125	7.37	5.05	7.82	2.95	25.99	1.89	-31	Poor flow
1330	8.45	100	0.25	7.33	5.33	3.83	2.97	25.06	1.90	-20	Poor flow
1335	8.73	60		7.33	4.60	3.31	2.87	27.06	1.83	-16	clear, slow flow
1340	8.73	60		7.57	4.86	4.24	1.98	28.61	1.26	2	clear, slow flow
3145	8.66	60	0.50	7.65	4.84		1.90	29.62	1.24	18	clear, slow flow
1350	8.73	60	Discovered break in tubing, replaced due to not pumping								clear
1400	9.24	60		7.57	3.36	10.90	2.89	26.20	1.83	7	clear, little flow
1405	10.15	60		7.31	0.00	4.93	2.71	22.08	1.74	10	clear
1410	11.29	60	0.75	7.04	0.00	8.03	2.88	17.96	1.84	4	clear
1415	11.70	60		7.01	0.00	2.80	2.87	17.73	1.84	4	clear
1420	10.13	60	0.80	6.98	0.00	2.76	2.84	17.63	1.85	10	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/14/12 1420 Total Volume of Water purged: ~1 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.98	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	2.84	Manganese	
Turbidity (NTU)	2.76	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	180
Temp.(°C)	17.63	Hydrogen Sulfide	0
TDS (g/L)	1.85	Alkalinty	24 drops/ 480
ORP (mv)	10.00	* NOTE * HACH test kits are only required for MNA analysis wells.	

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	300.1
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
Dissolved Inorganics	1-500mL plastic	None	SW6010B
BOD	1-500 mL plastic	None	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4

Comments: found cracked tubing while purging so it had to be replaced

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-16B_061312 Well Diameter: 2 Inches

Samplers: Rob Piurek Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
DTW = 4.01 TD = 38.95

Method: Geopump/Low Flow Date/Time: 6/13/12 1000

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1005	4.01	250	0.0	7.11	1.00	16.50	0.831	18.96	0.531	-307	Stop purging at 1005
1030	4.07	250	0.5	7.19	0.29	9.84	0.860	16.90	0.549	-324	resume purging at 1025
1040	4.10	250	1.1	7.31	0.24	9.53	0.861	15.55	0.551	-322	
1050	4.10	250	1.5	7.32	0.36	9.66	0.869	15.21	0.556	-320	Stop purging at 1055
1115	4.10	250	2.25	7.37	0.49	12.00	0.863	17.23	0.552	-319	Resume purging 1110
1120	4.10	250	2.75	7.32	0.34	8.14	0.861	15.96	0.551	-320	
1125	4.10	250	3.25	7.31	0.26	6.32	0.860	15.99	0.551	-320	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/13/12 1130 Total Volume of Water purged: 3.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.31	Ferrous Iron (mg/L)	0.10
Spec. Cond.(mS/cm)	0.86	Manganese	
Turbidity (NTU)	6.32	Sulfate	
DO (mg/L)	0.26	Carbon Dioxide	208
Temp.(°C)	15.99	Hydrogen Sulfide	5+
TDS (g/L)	0.551	Alkalinty	20 drops/ 400
ORP (mv)	-320		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	none	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments: Duplicate collected (DUP_061312) @ 1201

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-17A_061212 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(16.0 - 4.55) x 0.16 = 1.8 gal

Method: Geopump/Low Flow Date/Time: 6/12/12 1455

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1415	4.55	250	0.0	7.43	2.60	549	2.28	22.25	1.46	-115	
1420	4.89	250	0.5	7.41	1.18	122	2.26	21.30	1.45	-115	
1425	4.92	250	1.0	7.36	0.00	55.1	2.27	20.24	1.45	-112	
1430	4.95	250	1.5	7.34	0.00	37.4	2.30	19.84	1.47	-110	
1435	4.96	250	2.0	7.34	0.00	33.8	2.32	19.60	1.48	-107	
1440	4.97	250	2.5	7.34	0.00	27.1	2.32	19.13	1.48	-105	
1445	4.99	250	3.0	7.33	0.00	21.7	2.34	19.07	1.50	-103	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1455 Total Volume of Water purged: 3 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.33	Ferrous Iron (mg/L)	1.8
Spec. Cond.(mS/cm)	2.34	Manganese	
Turbidity (NTU)	21.70	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	412
Temp.(°C)	19.07	Hydrogen Sulfide	0
TDS (g/L)	1.50	Alkalinty	23 drops/ 460
ORP (mv)	-103		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500mL plastic	None	5120B
COD	1-120mL amber glass	H2SO4	410.4
Dissolved Iron	1-500mL plastic	None	SW6010B
Nitrate	1-40mL glass	H2SO4	352.2
Nitrite	1-40mL glass	None	354.1
Suldife	1-500mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-17B_061212 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(35.0 - 5.04) x 0.16 = 4.7 gal

Method: Geopump/Low Flow Date/Time: 6/12/12 1640

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1545	5.04	250	0.0	7.10	13.50	7.7	1.78	20.86	1.14	-284	
1550	5.08	250	0.5	7.07	0.43	7.8	1.73	19.71	1.11	-301	
1555	5.08	250	1.0	7.00	0.00	19.1	1.70	18.32	1.09	-326	
1600	5.09	250	1.5	6.95	0.00	40.1	1.80	17.95	1.15	-337	
1605	5.09	250	2.0	6.90	0.00	38.2	1.97	17.83	1.25	-334	
1610	5.09	250	2.5	6.86	0.00	25.1	2.30	17.50	1.46	-329	
1615	5.09	250	3.0	6.86	0.00	25.2	2.56	17.29	1.63	-325	
1620	5.09	250	3.5	6.88	0.00	22.0	2.62	17.13	1.68	-325	
1625	5.10	250	4.0	6.88	0.00	17.9	2.67	16.73	1.71	-325	
1630	5.10	250	4.5	6.91	0.00	11.4	2.76	16.65	1.77	-325	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1640 Total Volume of Water purged: 4.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.91	Ferrous Iron (mg/L)	0.6
Spec. Cond.(mS/cm)	2.76	Manganese	
Turbidity (NTU)	11.4	Sulfate	
DO (mg/L)	0.0	Carbon Dioxide	342
Temp.(°C)	16.65	Hydrogen Sulfide	5
TDS (g/L)	1.77	Alkalinty	480
ORP (mv)	-325		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500 mL plastic	none	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40mL glass	H2SO4	352.2
Nitrite	1-40mL glass	None	354.1
Suldife	1-500mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-18A_061212 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(17.5 - 5.35) x 0.16 = 1.9 gal

Method: Geopump/Low Flow Date/Time: 6/12/12 1210

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1125	5.35	250	0.25	7.49	1.02	9.7	0.689	18.61	0.441	-87	water clear
1130	6.05	250	0.75	7.49	0.16	9.20	0.692	18.20	0.443	-91	
1135	6.20	250	1.00	7.49	0.00	8.80	0.700	17.73	0.447	-94	
1140	6.35	250	1.25	7.48	0.00	8.60	0.706	17.47	0.452	-98	
1145	6.40	250	1.50	7.47	0.00	11.50	0.710	17.24	0.454	-103	
1150	6.48	250	1.75	7.47	0.00	12.00	0.711	17.22	0.455	-107	
1155	6.50	250	2.00	7.46	0.00	9.80	0.713	17.24	0.456	-109	
1200	6.50	250	2.50	7.46	0.00	8.20	0.717	17.40	0.459	-110	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1210 Total Volume of Water purged: 2.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.46	Ferrous Iron (mg/L)	1.4
Spec. Cond.(mS/cm)	0.717	Manganese	
Turbidity (NTU)	8.20	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	120
Temp.(°C)	17.40	Hydrogen Sulfide	0.0
TDS (g/L)	0.459	Alkalinty	15 drops/ 300
ORP (mv)	-110		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Choride/Sulfate	2-40mL glass	None	Lab SOP
TOC	2 Vials	H3PO4	5310C
Dissolved Iron	1-500mL plastic	None	6010B
BOD	1-500mL plastic	None	SM5210B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40 mL glass	H2SO4	EPA 353.2
Nitrite	1-40 mL glass	None	EPA 354.1
Sulfide	1-500 mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-18B_061212 Well Diameter: 2 Inches

Samplers: Allison Menges Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(38-5.52) x 0.16 = 5.1 gal

Method: Geopump/Low Flow Date/Time: 6/12/2012 1010

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	L		mg/L	NTU	mS/cm	°C	g/L	mv	
945	5.56	250	1	7.09	1.40	1.4	1.12	18.07	0.716	-72	
950	5.57	250	2	7.09	1.40	1.4	1.12	18.07	0.716	-72	
955	5.57	250	3	7.14	0.00	2.7	1.11	17.68	0.708	-76	
1000	5.58	250	4	7.15	0.00	2.6	1.11	17.30	0.713	-78	
1005	5.58	250	5	7.16	0.00	1.9	1.11	17.19	0.713	-79	
1010	5.58	250	6	7.17	0.00	1.2	1.12	17.06	0.715	-79	
1015	5.59	250	7	7.17	0.00	1.2	1.11	16.93	0.713	-79	

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1020 Total Volume of Water purged: 2 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.17	Ferrous Iron (mg/L)	1.2
Spec. Cond.(mS/cm)	1.11	Manganese	
Turbidity (NTU)	1.20	Sulfate	
DO (mg/L)	0.00	Carbon Dioxide	138
Temp.(°C)	16.93	Hydrogen Sulfide	0.0
TDS (g/L)	0.713	Alkalinty	18 drops/ 360
ORP (mv)	-79		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260
MEE & Propane	2-40mL glass	HCl	RSK-175
Bromide	2-40mL glass	None	EPA 300.1
Choride/Sulfate	2-40mL glass	None	EPA 300.1
TOC	2 Vials	H3PO4	5310C
BOD	1-500mL plastic	None	SM5210B
Dissolved Inorganics	1-500mL plastic	None	SW6010B
COD	1-120 mL amber	H2SO4	EPA 410.4
Nitrate	1-40mL glass	H2SO4	352.2
Nitrite	1-40mL glass	None	354.1
Suldife	1-500mL glass	NaOH/ZnAc	SM204500

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Hyde Park Facility* Well ID: MW-19B_061212 Well Diameter: 2 Inches

Samplers: Dan Chamberland Monitored Natural Attenuation Sample Set (Y/N)? Yes

Purging Data

WATER VOLUME CALCULATION
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot
(37.41 - 6.0) x 0.16 = 5.0 gal

Method: Geopump/Low Flow Date/Time: 6/12/12 1500

Time	DTW	Pump Rate	Vol.	pH	DO	Turbidity	Spec. Cond.	Temp.	TDS	ORP	Comments
24 hr.	ft.	ml/min.	gal.		mg/L	NTU	mS/cm	°C	g/L	mv	
1405	6.00	200	0.00	6.42	3.28	79.80	2.23	20.42	1.430	-60	light vegetable oil
1410	6.00	200	0.25	7.04	0.65	34.50	1.20	20.87	0.764	-91	light vegetable oil
1415	6.00	200	0.50	7.00	0.79	25.40	1.19	20.67	0.762	-100	light vegetable oil
1420	6.01	200	0.75	7.06	0.82	18.30	1.19	20.14	0.761	-112	clear, vegetable oil
1425	6.01	200	1.00	7.08	0.88	27.70	1.20	19.66	0.765	-121	clear, vegetable oil
1430	6.01	200	1.25	7.09	0.85	36.00	1.19	19.76	0.769	-123	clear, vegetable oil
1435	6.01	200	1.50	7.08	0.67	16.00	1.19	19.96	0.769	-128	clear, vegetable oil
1440	6.01	200	1.75	7.08	0.61	13.70	1.19	19.87	0.766	-133	clear, trace vegetable oil
1445	6.02	200	2.00	7.09	0.43	28.30	1.20	20.38	0.767	-138	clear, trace vegetable oil
1450	6.02	200	2.25	7.10	0.34	18.90	1.19	20.55	0.762	-142	clear, trace vegetable oil
1455	6.02	200	2.50	7.09	0.30	15.00	1.20	20.77	0.766	-145	clear, trace vegetable oil
1500	6.02	200	2.75	7.10	0.23	3.16	1.19	20.26	0.761	-147	clear

Sampling Data

Method: Geopump/Low Flow Date/Time: 6/12/12 1500 Total Volume of Water purged: ~3 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	7.10	Ferrous Iron (mg/L)	0.0
Spec. Cond.(mS/cm)	1.19	Manganese	
Turbidity (NTU)	3.16	Sulfate	
DO (mg/L)	0.23	Carbon Dioxide	128
Temp.(°C)	20.26	Hydrogen Sulfide	1.0
TDS (g/L)	0.761	Alkalinty	20 drops/ 400
ORP (mv)	-147		

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
Select VOCs	3-40mL glass	HCl	EPA 8260

Comments:

VOCs - PCE, TCE, cis and trans 1,2-DCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, VC, and Chloroethane

PARSONS

APPENDIX C
SPRING 2012 LABORATORY ANALYTICAL DATA

			Overburden Wells					
Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	MW- 4A MW-4A_061212 6685703/6687265/6700837 LLI BPW07/BPW08/BPW18 WATER 6/12/2012 11:15 7/27/2012	MW- 5A MW-5A_061212 6685707 LLI BPW07 WATER 6/12/2012 15:40 7/27/2012	MW-7A MW-7A_061412 6688892 LLI BPW09 WATER 6/14/2012 15:55 7/27/2012	MW-10A MW-10A_061312 6687271 LLI BPW08 WATER 6/13/2012 11:40 7/27/2012	MW-12A MW-12A_061312 6687276 LLI BPW08 WATER 6/13/2012 15:00 7/27/2012	MW-16A MW-16A_061412 6688891 LLI BPW09 WATER 6/14/2012 14:20 7/27/2012
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	5.4	1 U	9.1	7	1.8 J	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.81 J	0.8 U	0.8 U	1 J	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	7.8	1 J	22	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	140	88	3.8 J	620	19	8.4
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	2.9 J	1 J	0.8 U	13	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	7.5	1 U	1.2 J	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	20	82	1 U	170	13	110
74-85-1	ETHENE	ug/l	3.9 J	34	3.3 J	43		11
74-84-0	ETHANE	ug/l	1 U	2.8 J	5.8	1.5 J		1 U
74-82-8	METHANE	ug/l	3700	130	6300	120		8.7 J
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l	0.0801 U		0.0801 U			0.0801 U
7440-38-2	ARSENIC	mg/l	0.0051 U		0.0051 U			0.0051 U
7440-70-2	CALCIUM	mg/l	287		268			333
7439-89-6	IRON	mg/l	3.22	0.0141 U	3.6	0.0141 U		0.0141 U
7439-95-4	MAGNESIUM	mg/l	92.8		95.4			144
7439-96-5	MANGANESE	mg/l	0.736		1.33			0.134
7440-23-5	SODIUM	mg/l	230		142 J			173 J
	OTHER							
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l	796	3.2 U		3.2 U		5.4
24959-67-9	BROMIDE	mg/l	36.7		20.3			2 U
16887-00-6	CHLORIDE (AS CL)	mg/l	89.8	120	24.3	621		237
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l	1350	12.8 U		31 J		26.5 J
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.04 U	0.57		0.04 U		
14797-65-0	NITROGEN, NITRITE	mg/l	0.015 U	0.015 U		0.015 U		
74-98-6	PROPANE	ug/l	1 U	1 U	1 U	1 U		1 U
14808-79-8	SULFATE (AS SO4)	mg/l	1.5 U	116	1.5 U	264		1100
18496-25-8	SULFIDE	mg/l	0.34	0.054 U		0.054 U		
TOC	TOTAL ORGANIC CARBON	mg/l	434	0.98 J	573	0.98 J		9.5

			Overburden Wells		Bedrock Wells			
Analytical Summary Table for Chemicals of Concern		Location ID:	MW-17A	MW-18A	MW- 2B	MW- 5B	MW- 6	MW- 7B
Validated 2012 -2nd Qtr Groundwater Samples		Sample ID:	MW-17A_061212	MW-18A_061212	MW-2B_061312	MW-5B_061312	MW-6_061312	MW-7B_061412
Former Carborundum Company, Hyde Park Facility		Lab Sample Id:	6685705	6685704	6687268	6687270	6687267	6688887
Detected Compound Summary		Source:	LLI	LLI	LLI	LLI	LLI	LLI
		SDG:	BPW07	BPW07	BPW08	BPW08	BPW08	BPW09
		Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
		Sampled:	6/12/2012 14:55	6/12/2012 12:10	6/13/2012 9:40	6/13/2012 11:35	6/13/2012 9:25	6/14/2012 12:20
		Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	21	4.2 J	1 U	1 U	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	8.1	1.1 J	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	140	56	2.7 J	33	30	1.6 J
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	1.2 J	0.94 J	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	5.3	21	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	25	2.4 J	8.6	34	47	9.2
74-85-1	ETHENE	ug/l	3.1 J	1 U		1 U		7.9
74-84-0	ETHANE	ug/l	12	1 U		1 U		1 U
74-82-8	METHANE	ug/l	8500	11 J		50		2400
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l						0.0801 U
7440-38-2	ARSENIC	mg/l						0.0051 U
7440-70-2	CALCIUM	mg/l						125
7439-89-6	IRON	mg/l	0.0141 U	0.0141 U		0.0141 U		0.0141 U
7439-95-4	MAGNESIUM	mg/l						47.8
7439-96-5	MANGANESE	mg/l						0.0833
7440-23-5	SODIUM	mg/l						91.7
	OTHER							
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l	5.9	3.1 U		3.7 U		
24959-67-9	BROMIDE	mg/l						2 U
16887-00-6	CHLORIDE (AS CL)	mg/l	484	108		187		150
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l	28.8 J	12.8 U		33.3 J		
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.04 U	0.04 U		0.04 U		
14797-65-0	NITROGEN, NITRITE	mg/l	0.015 U	0.015 U		0.015 U		
74-98-6	PROPANE	ug/l	1 U	1 U		1 U		1 U
14808-79-8	SULFATE (AS SO4)	mg/l	172	129		255		143
18496-25-8	SULFIDE	mg/l	0.054 U	0.054 U		0.054 U		
TOC	TOTAL ORGANIC CARBON	mg/l	4.4	1		3.4		19.3

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary			Bedrock Wells					
						Dup of MW-11B_061412		
		Location ID:	MW- 8	MW-10B	MW-11B	MW-11B	MW-12B	MW-13B
		Sample ID:	MW-8_061212	MW-10B_061412	MW-11B_061412	DUP_061412FD	MW-12B_061312	MW-13B_061312
		Lab Sample Id:	6685709	6688885	6688884	6688886	6687273	6687275
		Source:	LLI	LLI	LLI	LLI	LLI	LLI
		SDG:	BPW07	BPW09	BPW09	BPW09	BPW08	BPW08
		Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
		Sampled:	6/12/2012 16:55	6/14/2012 11:20	6/14/2012 11:10	6/14/2012 12:01	6/13/2012 13:55	6/13/2012 14:45
		Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND	UNITS:						
	VOLATILES							
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1 U	1.4 J	1.3 J	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	1.6 J	280	1.8 J	2.1 J	5.6	27
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	1.7 J	0.8 U	0.8 U	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	1.1 J	110	6.1	6.1	10	57
74-85-1	ETHENE	ug/l		5.7	110	100		
74-84-0	ETHANE	ug/l		1 U	2.6 J	2.4 J		
74-82-8	METHANE	ug/l		120	7400	7500		
	DISSOLVED METALS							
7429-90-5	ALUMINUM	mg/l		0.0801 U	0.0801 U	0.0801 U		
7440-38-2	ARSENIC	mg/l		0.0051 U	0.0051 U	0.0051 U		
7440-70-2	CALCIUM	mg/l		162	148	145		
7439-89-6	IRON	mg/l		0.0141 U	0.0141 U	0.0141 U		
7439-95-4	MAGNESIUM	mg/l		59.7	52.1	51.7		
7439-96-5	MANGANESE	mg/l		0.0585	0.0472	0.0564		
7440-23-5	SODIUM	mg/l		71.4	85.3	81		
	OTHER							
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l		3.3 U	32	25.7		
24959-67-9	BROMIDE	mg/l		2 U	2.3 J	2.4 J		
16887-00-6	CHLORIDE (AS CL)	mg/l		141	121	126		
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l		12.9 J	76.5	81		
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l		0.04 U	0.04 U	0.04 U		
14797-65-0	NITROGEN, NITRITE	mg/l		0.015 U	0.015 U	0.015 U		
74-98-6	PROPANE	ug/l		1.1 J	1 U	1 U		
14808-79-8	SULFATE (AS SO4)	mg/l		261	135	130		
18496-25-8	SULFIDE	mg/l		0.054 U	44.4	39.4		
TOC	TOTAL ORGANIC CARBON	mg/l		3.8	4.3	4.2		

Analytical Summary Table for Chemicals of Concern Validated 2012 -2nd Qtr Groundwater Samples Former Carborundum Company, Hyde Park Facility Detected Compound Summary			Bedrock Wells						
						Dup of MW-16B_061312			
		Location ID:	MW-14B	MW-15	MW-16B	MW-16B	MW-17B	MW-18B	MW-19B
		Sample ID:	MW-14B_061312	MW-15_061412	MW-16B_061312	DUP061312	MW-17B_061212	MW-18B_061212	MW-19B_061212
		Lab Sample Id:	6687274	6688883	6687269	6687272	6685708	6685702	6685706
		Source:	LLI	LLI	LLI	LLI	LLI	LLI	LLI
		SDG:	BPW08	BPW09	BPW08	BPW08	BPW07	BPW07	BPW07
		Matrix:	WATER	WATER	WATER	WATER	WATER	WATER	WATER
		Sampled:	6/13/2012 14:20	6/14/2012 9:20	6/13/2012 11:30	6/13/2012 12:01	6/12/2012 16:40	6/12/2012 10:20	6/12/2012 15:00
		Validated:	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012	7/27/2012
CAS NO.	COMPOUND	UNITS:							
	VOLATILES								
71-55-6	1,1,1-TRICHLOROETHANE	ug/l	0.8 U	0.8 U	1.6 U	1.6 U	0.8 U	0.8 U	0.8 U
75-34-3	1,1-DICHLOROETHANE	ug/l	1 U	1.2 J	4 J	4.1 J	43	1 U	1 U
75-35-4	1,1-DICHLOROETHENE	ug/l	0.8 U	0.8 U	15	15	0.8 U	0.8 U	0.8 U
75-00-3	CHLOROETHANE	ug/l	1 U	1 U	2.6 J	2.2 J	1.5 J	1 U	1 U
156-59-2	CIS-1,2-DICHLOROETHYLENE	ug/l	1.5 J	0.8 U	4700	4800	20	110	2.3 J
127-18-4	TETRACHLOROETHYLENE(PCE)	ug/l	0.8 U	0.8 U	1.6 U	1.6 U	0.8 U	0.8 U	0.8 U
156-60-5	TRANS-1,2-DICHLOROETHENE	ug/l	0.8 U	0.8 U	19	19	0.82 J	0.8 U	0.8 U
79-01-6	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1 U	74	75	1 U	1 U	1 U
75-01-4	VINYL CHLORIDE	ug/l	5.4	1.8 J	600	590	18	140	1.6 J
74-85-1	ETHENE	ug/l	91		74	70	72	3.6 J	
74-84-0	ETHANE	ug/l	2.2 J		2.5 J	2.3 J	45	1 U	
74-82-8	METHANE	ug/l	9100		2600	2300	23000	110	
	DISSOLVED METALS								
7429-90-5	ALUMINUM	mg/l			0.0801 U	0.0801 U	0.0801 U	0.0801 U	
7440-38-2	ARSENIC	mg/l			0.0051 U	0.0051 U	0.0051 U	0.0051 U	
7440-70-2	CALCIUM	mg/l			152	150	194	158	
7439-89-6	IRON	mg/l	0.027 J		0.0141 U	0.0141 U	0.19 J	0.0141 U	
7439-95-4	MAGNESIUM	mg/l			60.7 J	59.6 J	57.1	58.8	
7439-96-5	MANGANESE	mg/l			0.0669	0.0653	0.0833	0.0889	
7440-23-5	SODIUM	mg/l			58.9	58.5	351	68.2	
	OTHER								
BOD	BIOCHEMICAL OXYGEN DEMAND (BOD)	mg/l	33		24.6	21.7	9.6	3.5 U	
24959-67-9	BROMIDE	mg/l			2 U	2 U	2.6	2 U	
16887-00-6	CHLORIDE (AS CL)	mg/l	241		81.5	81.5	739	102	
COD	COD - CHEMICAL OXYGEN DEMAND	mg/l	117		65.1	69.7	49.2 J	12.8 U	
14797-55-8	NITROGEN, NITRATE (AS N)	mg/l	0.04 U		0.04 U	0.04 U	0.04 U	0.04 U	
14797-65-0	NITROGEN, NITRITE	mg/l	0.015 U		0.015 U	0.015 U	0.015 U	0.015 U	
74-98-6	PROPANE	ug/l	1 U		1 U	1 U	1 U	1 U	
14808-79-8	SULFATE (AS SO4)	mg/l	126		165	177	116	268	
18496-25-8	SULFIDE	mg/l	48.2		33.1	29.7	11.6	0.054 U	
TOC	TOTAL ORGANIC CARBON	mg/l	10.2		4.1	4.3	3.8	4	