2009 Long-Term Groundwater Sampling and Data Summary Report Mr. C's Dry Cleaners Site East Aurora, New York

Site Number: 9-15-157

August 2009

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road
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List of Abbreviations and Acronyms

AMSL	above mean sea level
BGS	below ground surface
cm/s	centimeters per second
COC	chain of custody
cVOC	chlorinated volatile organic compound
DCE	dichloroethene
DNAPL	denser-than-water nonaqueous-phase liquid
DUSR	Data Usability Summary Report
EEEPC	Ecology and Environment Engineering, P.C.
EPA	United States Environmental Protection Agency
FS	feasibility study
IDW	investigation-derived waste
Mr. C's	Mr. C's Dry Cleaners
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl tert-butyl ether
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
NTU	nephelometric turbidity unit
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
PCE	tetrachloroethene (perchloroethylene)

List of Abbreviations and Acronyms (Cont.)

PID	photoionization detector
ppm	parts per million
QA/QC	quality assurance/quality control
RI	Remedial Investigation
ROD	Record of Decision
SMP	Site Management Plan
TCA	trichloroethane
TCE	trichloroethene
TCL	Target Compound List
TOGS	Technical Operational Guidance Series
VOC	volatile organic compound

Executive Summary

Under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment No. 13.0), Ecology and Environment Engineering, P.C. (EEEPC) was tasked to perform long-term groundwater sampling and analysis and perform minor well maintenance at and around the Mr. C's Dry Cleaners (Mr. C's) site (NYSDEC Site No. 9-15-157), located in the town of East Aurora, Erie County, New York.

The purpose of this investigation was to obtain current groundwater analytical data for use in evaluating the performance of the groundwater treatment system. The groundwater pump-and-treatment system was installed and became operational on September 21, 2002. Operation and maintenance of the system is currently performed by EEEPC. An average of 1.3 million gallons per month is pumped by the system, and a total of 104.5 million gallons has been pumped since September 2002.

Fieldwork was performed by EEEPC personnel on May 11 and 12, 2009. EEEPC subcontracted Mitkem Corporation, located in Warwick, Rhode Island, to perform laboratory analyses.

Groundwater beneath and around the Mr. C's site contains elevated levels of several chlorinated solvents, their breakdown by-products, and other hydrocarbons. The highest concentrations of tetrachloroethene (PCE) and its breakdown by-products occur in an area extending more than 200 feet from the Agway property located near the corner of Main Street and Whaley Avenue to the northwest, toward Fillmore Avenue.

Data collected in 2002, 2003, 2004, and 2007 from several wells were compared to the data from samples collected in 2009. The following is a summary of the findings:

- Tetrachloroethylene (PCE) is the primary chlorinated volatile organic compound (cVOC) detected in the groundwater samples. However, cis-1,2-DCE levels in MW-4 were consistently higher (approximately two times) than the PCE level in this well in the past. This well could not be sampled in 2009 due

to the extensive reconstruction of Main Street in the village of East Aurora by the New York State Department of Transportation.

- From 2007 to 2009, the concentrations of PCE and trichloroethylene (TCE) in MPI-4I (near the corner of Main Street and Whaley Avenue) declined by over 50%, whereas the concentration of cis-1,2-DCE increased nearly 5-fold, indicating that natural reductive dechlorination of PCE is occurring in this area.

- The concentrations of PCE in the eight pumping wells (RW-1 and PW2- through PW-8) generally increased from 2002 until 2004/2005. Since that time, contaminant concentrations at each pumping well location have decreased but are still significantly higher than in 2002. Activation of the recovery system in 2002 caused an initial increase in concentrations as the contaminant plume was drawn toward the pumping wells. Reduction in plume size and natural degradation of the contaminants has since caused a decrease in contaminant concentrations in most pumping wells.

- PCE levels in MPI-6S have increased from non-detect in 2002 to 8,100 µg/L in 2009. This is likely due to the proximity of this well to the pumping wells, which draw the contaminant plume to that area for capture and treatment.

- At MW-8, which is along Whaley Avenue north of the Agway property, cVOC concentrations decreased significantly from 2007 to 2009. An approximately 40-fold reduction was observed in TCE and cis-1,2-DCE concentrations. The PCE concentration also decreased by over 4-fold, and vinyl chloride declined from 35 µg/L to non-detect. The May 2009 concentrations of cVOCs in MW-8 were generally the lowest recorded in this well to date.

- The concentrations of PCE and other cVOCs in ESI-6, which is adjacent to the First Presbyterian Church, generally decreased from 2002 to 2007 but showed a small increase or remained similar since 2007. With no recovery wells in the vicinity of this monitoring well, plume characteristics are expected to remain relatively stable, with natural degradation predominating plume cleanup.

- In general, methyl tert-butyl ether (MTBE) levels throughout the area have continued to decline since 2002.

Based on the observed changes in the on-site distribution (i.e., centered around pumping wells) of VOC contaminations and the general groundwater level decrease, the groundwater treatment system appears to be effective in drawing PCE contamination toward the pumping wells.

1 Introduction

Ecology and Environment Engineering, P.C. (EEEPC), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment No. 27.4), was tasked to perform groundwater sampling and analysis and perform minor well maintenance at and around the Mr. C's Dry Cleaners (Mr. C's) site (NYSDEC Site No. 9-15-157), located in the town of East Aurora, Erie County, New York (see Figure 1-1).

Field investigations were performed by EEEPC personnel on Monday, May 11, and Tuesday, May 12, 2009. Laboratory analyses were performed by Mitkem Corporation, which is located in Warwick, Rhode Island. Independent data validations of the analytical results were performed by EEEPC.

This report provides a summary of the groundwater monitoring and sampling activities that took place at the Mr. C's site, as described in the EEEPC work plan (EEEPC 2007a) and the Site Management Plan (SMP) (EEEPC 2008). Descriptions of previous investigations are presented in Section 1.3, and work currently being performed is described in Section 2. The physical characteristics of the study area are discussed in Section 3. A discussion of the new analytical data obtained and a comparison to existing data is presented in Section 4.

1.1 Site Location and Description

The Mr. C's site is located at 586 Main Street in the village of East Aurora in Erie County, New York (see Figure 1-1). The site is located on an approximately 0.5-acre parcel in a mixed-use area of residential, municipal, and light commercial properties. Mr. C's is located in a one-story building on a concrete slab foundation with an adjacent paved parking lot. Mr. C's occupies the front portion of the building along Main Street; the remainder of the building is occupied by other commercial businesses.

The Mr. C's site is partially surrounded by the former Agway site to the west, residential homes along Whaley Avenue to the west, and Fillmore Avenue to the north. Other commercial businesses are adjacent to the site on the east side and across Main Street to the south. Groundwater pumping wells and groundwater monitoring wells ring the entire Mr. C's Site.

The Agway site, a former gasoline storage spill site, was previously excavated and is an active remedial site. An air sparge/soil vapor extraction system in the upper aquifer zone (0 to 12 feet BGS) is operated and maintained at this site by EEEPC.

Subslab depressurization systems are in operation at two locations around the Mr. C's site—the First Presbyterian Church, located southwest of the site at the corner of Main Street and Paine Avenue, and at 27 Whaley Avenue, located northwest of the site. Both systems are actively monitored and maintained by EEEPC under other tasks of the work assignment.

1.2 Site History

Mr. C's has been in operation as a dry cleaning facility since 1970. Prior to that, the property had been used for several other commercial purposes, including as a laundry service, an auto repair/paint shop, and as a hotel. In December 1991, NYSDEC investigated complaints of odors in a neighboring property southwest of the site. Subsequently, NYSDEC collected air samples from basements as well as soil vapor, groundwater, and sanitary sewer samples on several occasions and detected the presence of tetrachloroethene (PCE). The site was then designated a Class 2 Hazardous Waste Site (Site Number 9-15-157) by NYSDEC, indicating that the site is believed to pose a significant risk to public health and the environment.

1.3 Investigations Prior to 2009

During a remedial investigation (RI) conducted in 1994 by Malcolm Pirnie, Inc. (Malcolm Pirnie, Inc. 1995), the highest concentration of PCE was found beneath the Mr. C's building. The RI also determined the horizontal and vertical extents of the contamination and found that other contaminants at the site consisted of petroleum hydrocarbons and volatile organic compounds (VOCs), including compounds resulting from PCE degradation. A feasibility study (FS) completed by Malcolm Pirnie, Inc., in November 1996 recommended remediation of the source plume using in situ air stripping wells. A remedial action consisting of the installation of eight in situ air-stripping wells was selected, and a Record of Decision (ROD) was signed in March 1997 (NYSDEC 1997). Additional predesign investigations were conducted by Malcolm Pirnie, Inc., in December 1998 and April 1999 to confirm the limits of the groundwater contamination plume (Malcolm Pirnie, Inc. 1998, 1999). As a result of the additional investigations, an Explanation of Significant Differences was issued in April 2000 as justification for the modification of the selected remedy to a conventional groundwater pump-and-treat system. Remedial design, including the preparation of Contract Documents and Drawings, was completed by Malcolm Pirnie, Inc., in October 2000. Remedial construction started in October 2001 under EEEPC's oversight.

Remedial construction included installation of eight pumping wells and 30 observation piezometers, 1,100 linear feet of double-walled groundwater collection piping improvements within the designated groundwater treatment system area inside the Mr. C's building (i.e., demolition and removal of existing utilities and fixtures), a groundwater treatment system, and approximately 1,400 linear feet of 4-inch-inner diameter force main for discharge of treated groundwater to Tannery Brook. The groundwater treatment system consisted of a sequestering agent feed system, bag filters, a 3,000-gallon holding tank, a low-profile air stripper, and vapor-phase granular activated carbon (GAC). The groundwater treatment system started operation on September 21, 2002. Operation, maintenance, and monitoring have been performed by EEEPC since September 2003. An average of 1.3 million gallons per month is pumped by the system, and a total of 104.5 million gallons has been pumped since September 2002.

In 2004, three overburden monitoring wells (EE-1, EE-2, and ESI-1 [replacement]) were installed at the site by B & S, Inc., of Buffalo, New York. Split-spoon samples were collected at monitoring well location EE-2 to screening levels of contamination and identify the geologic strata. Each new well was developed, surveyed by Lu Engineers, purged, and sampled. Also, three borings were drilled (BH-1 through BH-3) and continuous split-spoon samples were collected at each boring to screen levels of contamination and to identify the subsurface geologic data for future monitoring well installation. In addition, four monitoring wells (MPI-1I, MPI-4D, MPI-5I, and OW-C) were abandoned by B & S, Inc.

In August 2007, EEEPC collected depth-to-water measurements and purged and sampled 29 existing pumping and monitoring wells as part of the long-term monitoring of the site. The results from the 2007 sampling event are discussed in the 2007 Long-Term Groundwater Sampling and Data Summary Report (EEEPC 2007a) and are incorporated into the summary of analytical results in this report.

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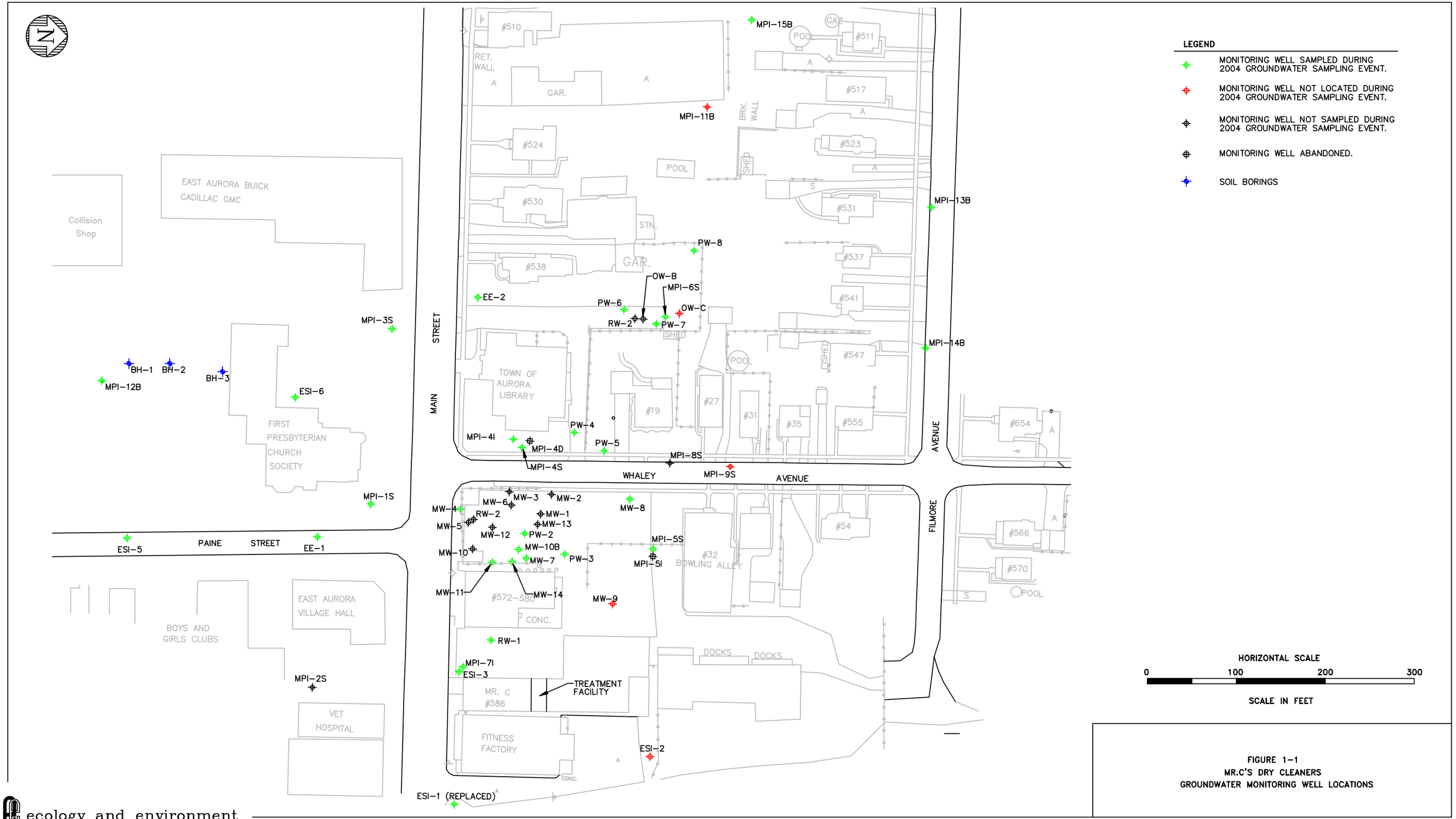


LEGEND

- MONITORING WELL SAMPLED DURING 2004 GROUNDWATER SAMPLING EVENT.
- MONITORING WELL NOT LOCATED DURING 2004 GROUNDWATER SAMPLING EVENT.
- MONITORING WELL NOT SAMPLED DURING 2004 GROUNDWATER SAMPLING EVENT.
- MONITORING WELL ABANDONED.
- SOIL BORINGS

HORIZONTAL SCALE

0 100 200 300

SCALE IN FEET

FIGURE 1-1
MR.C'S DRY CLEANERS
GROUNDWATER MONITORING WELL LOCATIONS

ecology and environment

2 Mr. C's Dry Cleaners 2009 Field Activities

This section discusses the field activities performed at the Mr. C's site in May 2009. All field activities were conducted according to the April 2007 NYSDEC-approved work plan (EEEPC 2007a). Sample locations are indicated on Figure 1-1. Well construction information is provided in Table 2-1.

2.1 2009 Investigations

2.1.1 Monitoring Well Sampling

Groundwater samples were collected from 23 wells at the Mr. C's site (see Table 2-2). All monitoring wells sampled were purged prior to sampling. Eight pumping wells (RW-1, PW-2, PW-3, PW-4, PW-5, PW-6, PW-7, and PW-8) did not require purging because they are consistently pumped as part of the groundwater treatment system. If the pump was not turned on prior to sampling, as was the case with PW-6, it was manually activated, and the well was evacuated and allowed to recharge prior to sample collection.

Monitoring well purging was accomplished using a submersible pump with new polyethylene tubing or using disposable polyethylene bailers on new polypropylene line. All the wells with the exception of the pumping wells were sampled using disposable polyethylene bailers on new polypropylene line. The pumping wells were sampled using a check valve and new polyethylene tubing because the pumping hardware obstructed access with a bailer. Prior to purging, static water levels were measured to within ±0.01 foot in each well using a Solinst water level meter. All wells were purged of approximately three to five times the volume (or greater) of water standing in the well. Purged water from the monitoring well was handled in accordance with the 2007 work plan (see Section 2.2). Temperature, pH, specific conductance, and turbidity were measured and recorded, at a minimum, initially, after each well volume and just prior to sampling using a LaMotte 2020 Turbidity meter and a Myron 6P Ultrameter II (water parameter kit). Purging was performed until pH, specific conductance, and temperature had stabilized and turbidity was 50 NTUs or less. The water quality parameters measured at the time of sampling are presented in Table 2-2. All groundwater samples were analyzed for VOCs by United States Environmental Protection Agency (EPA) Method 8260. Field data collection forms containing the data obtained during purging and sampling of the wells are provided in Appendix A.

Table 2-1 Long-Term Monitoring Well Construction Summary, Mr. C's Dry Cleaners, East Aurora, New York

Well ID	Well Casing/ Screen Inner Diameter	Total Well Depth (ft TOIC)	TOIC Casing Elevation (ft AMSL)	Ground Elevation (ft AMSL)	Screen Interval (ft BGS)	Sand Pack Interval (ft BGS)	Top of Seal (ft BGS)	Unit Screened	Northing[a]	Easting[a]
EE-1	2	26.37	913.46	913.63	23 - 28	21 - 28.5	15	OA	1008334.03	491787.2
EE-2	2	31.34	916.3	916.51	22 - 32	20 - 32	15	OA	1008521.26	491514.8
ESI-1 Replacement	2	19.74	916.99	917.35	10.5 - 20.5	8 - 21	4	OA	1008488.4	492086.2
ESI-3	2	15.42	915.85	916.41	7 - 17	6 - 18	4.1	OA	1008493.49	491938.8
ESI-5	2	12.32	912.64	912.9	5 - 15	4 - 16	2	OA	1008120	491788.5
ESI-6	2	15.93	914.48	914.92	7 - 17	6 - 18	3.8	OA	1008309.02	491630.2
MPI-1S	2	18.64	915.08	915.38	9 - 19	7.2 - 19.5	5.3	OA	1008394.23	491750.1
MPI-3S	2	17.41	914.4	914.79	8 - 18	5.7 - 18.5	3.7	OA	1008418.03	491553.2
MPI-4S	2	20.24	914.82	915.12	11 - 21	8.8 - 21.5	6.8	OA	1008564.07	491686.7
MPI-4I	2	41.5	915.66	916.12	32 - 42	29.8 - 42.5	4	LA	1008554.34	491677.3
MPI-5S	2	17.34	916.45	916.78	8 - 18	5.9 - 18.4	3.9	OA	1008711.63	491800.8
MPI-6S	2	21.65	915.03	915.35	12.3 - 22.3	10 - 23	7.9	OA	1008725.14	491535.1
MPI-7I	2	13.37	916.14	916.42	29.5 - 39.5	27.1 - 40	5.3	LA	1008497.89	491933.5
MPI-8S	2	6.54	NA	NA	8 - 18	6 - 18.5	4	OA	NA	NA
MPI-10B	2	31.11	915.68	916.07	16.5 - 31.5	13 - 32	11	OA	1008560.4	491801.5
MPI-12B	2	34.62	911.19	911.44	20 - 35	15 - 35	11.5	OA	1008091.58	491611.5
MPI-15B	2	28.15	NA	NA	NA	NA	NA	OA	1008822.54	491205.5
MW-4	4	16.67	914.02	914.47	7.3 - 17.3	6.6 - 18	4.7	OA	1008495.05	491755.9
MW-7	2	13.97	915.96	916.34	5 - 14.5	NA - 15	3	OA	1008569.02	491811.2
MW-8	2	13.57	915.62	915.97	5 - 14.5	NA - 15	3	OA	1008685.39	491744.6
RW-1	6	24.48	NA	NA	17.9 - 27.9	10 - 30	7	OA	1008529.43	491903.3
PW-2	4	29.02	NA	NA	NA - 32	NA	NA	OA	1008567.08	491783.3
PW-3	4	28.67	NA	NA	NA - 32	NA	NA	OA	1008612.06	491806.6
PW-4	4	29.04	NA	NA	NA - 32	NA	NA	OA	1008623.23	491669.6
PW-5	4	28.47	NA	NA	NA - 32	NA	NA	OA	1008656.69	491690.3
PW-6	4	28.3	NA	NA	NA - 32	NA	NA	OA	1008679.07	491531.6
PW-7	4	26.49	NA	NA	NA - 32	NA	NA	OA	1008715.29	491547.6
PW-8	4	26.82	NA	NA	NA - 32	NA	NA	OA	1008757.77	491465.1
Abandoned or Missing Wells										
ESI-2	*2*	*NA*	*NA*	*NA*	*9 - 19*	*8 - 20*	*6*	*OA*	*NA*	*NA*
ESI-4	*2*	*26.37*	*NA*	*NA*	*5 - 15*	*4 - 16*	*2*	*OA*	*NA*	*NA*
MW-1	*2*	*NA*	*NA*	*NA*	*12 - 22*	*10.6 - 22*	*9*	*OA*	*NA*	*NA*
MW-2	*2*	*NA*	*NA*	*NA*	*10 - 15*	*NA*	*NA*	*OA*	*NA*	*NA*

Table 2-1 Long-Term Monitoring Well Construction Summary, Mr. C's Dry Cleaners, East Aurora, New York

Well ID	Well Casing/ Screen Inner Diameter	Total Well Depth (ft TOIC)	TOIC Casing Elevation (ft AMSL)	Ground Elevation (ft AMSL)	Screen Interval (ft BGS)	Sand Pack Interval (ft BGS)	Top of Seal (ft BGS)	Unit Screened	Northing[a]	Easting[a]
MW-3	*4*	*NA*	*NA*	*NA*	*7 - 17*	*6.1 - 18*	*3.7*	*OA*	*NA*	*NA*
MW-5	*2*	*NA*	*NA*	*NA*	*10 - 15*	*NA*	*NA*	*OA*	*NA*	*NA*
MW-6	*2*	*NA*	*NA*	*NA*	*5 - 14.5*	*NA - 15*	*3*	*OA*	*NA*	*NA*
MW-9	*2*	*NA*	*NA*	*NA*	*5 - 14.5*	*NA - 15*	*3*	*OA*	*NA*	*NA*
MW-10	*2*	*NA*	*NA*	*NA*	*4 - 13.5*	*NA - 14*	*2*	*OA*	*NA*	*NA*
MW-11	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	--	*NA*	*NA*
MW-14	*2*	*NA*	*NA*	*NA*	*NA - 18.2 (TOIC)*	*NA*	*NA*	*OA*	*1008530.72*	*491815.9*
MPI-1D	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	--	*NA*	*NA*
MPI-2S	*2*	*9.52*	*NA*	*NA*	*8 - 18*	*6 - 18.5*	*3.8*	*OA*	*NA*	*NA*
MPI-5D	*Borehole only – no well construction log*									
MPI-5I	*NA*	*NA*	*NA*	*NA*	*32 - 42*	*30 – 42.5*	*8*	*OA*	*NA*	*NA*
MPI-7D	*Borehole only – no well construction log*									
MPI-9S	*2*	*NA*	*NA*	*NA*	*8 - 18*	*6.5 - 18.5*	*4.5*	*OA*	*NA*	*NA*
MPI-11B	*2*	*NA*	*NA*	*NA*	*15 - 30*	*13 - 30.5*	*8.5*	*OA*	*NA*	*NA*
MPI-13B	*2*	*31.43*	*913.25*	*913.49*	*17 - 32*	*15 - 32*	*10*	*OA*	*1009024.45*	*491416.5*
MPI-14B	*2*	*27.54*	*913.18*	*913.68*	*15 - 30*	*11 - 30*	*8.5*	*OA*	*1009018.11*	*491574.9*
OW-B	*2*	*26.41*	*NA*	*NA*	*22.5 - 27.5*	*10.5 - 27.5*	*8*	*OA*	*NA*	*NA*
RW-2	*4*	*NA*	*NA*	*NA*	*18 - 28*	*10 - 28*	*8*	*OA*	*NA*	*NA*

Note:
Wells in *italic text* were previously abandoned or destroyed, or were otherwise not locatable in 2009.
[a] Coordinates system is New York State Plane West Zone (feet).

Key:
AMSL = Above mean sea level.
BGS = Below ground surface.
ft = Feet.
LA = Lacustrine aquifer.
NA = Not available.
OA = Outwash aquifer.
TOIC = Top of inner casing.

Table 2-2 2009 Summary of Groundwater Quality Field Measurements, Mr. C's Dry Cleaners, East Aurora, New York

Well Identification	Sample Date	pH (s.u.)	Temperature (°C)	Conductivity (µS/cm)	Unfiltered Turbidity (NTUs)
EE-1	5/12/09	7.08	13.8	5453	26
EE-2	5/12/09	7.46	15.4	2790	12.8
ESI-1 (Replacement)	Not sampled	NA	NA	NA	NA
ESI-3	Not sampled	NA	NA	NA	NA
ESI-5	5/12/09	7.18	11.8	769.6	38.6
ESI-6	5/12/09	6.97	13.1	3701	16.9
MPI-1S	5/12/09	6.61	11.4	932.6	2
MPI-3S	5/12/09	7.13	10.8	3698	23.6
MPI-4I	5/12/09	7.15	14.0	2331	1.57
MPI-4S	Not sampled	NA	NA	NA	NA
MPI-5S	5/12/09	7.13	12.8	3284	10
MPI-6S	5/12/09	7.28	9.6	1120	2.62
MPI-7I	5/12/09	8.10	11.9	563.5	10.2
MPI-8S	Not sampled	NA	NA	NA	NA
MPI-10B	5/12/09	7.14	13.1	3072	6
MPI-12B	5/12/09	7.28	12.1	3203	17
MPI-13B	Not sampled	NA	NA	NA	NA
MPI-14B	Not sampled	NA	NA	NA	NA
MPI-15B	5/12/09	7.04	12.3	1373	2.67
MW-04	Not sampled	NA	NA	NA	NA
MW-07	5/12/09	7.39	10.2	1500	8
MW-08	5/12/09	7.11	10.8	1667	17.6
PW-02	5/11/09	7.24	12.5	2204	89
PW-03	5/11/09	6.51	14.0	2998	17
PW-04	5/11/09	7.91	12.4	3230	16
PW-05	5/11/09	7.35	13.2	3610	13
PW-06	5/11/09	8.60	11.3	3286	421
PW-07	5/11/09	8.06	14.5	1015	38
PW-08	5/11/09	8.14	11.4	1440	301
RW-01	5/11/09	8.13	11.4	2856	26

Key:
°C = Degrees Celsius.
µS/cm = MicroSiemens per centimeter.
NTU = Nephelometric turbidity unit.
NA = Not applicable, well was not sampled.
NP = Pumping well was not purged; therefore, no water quality monitoring was performed during sampling.
s.u. = Standard units.

In addition to the environmental samples, quality assurance/quality control (QA/QC) samples were collected. To check consistency in both sample collection and sample analysis, duplicate samples were collected. Duplicate samples were collected at a rate of approximately one per 20 field samples. The two duplicate samples (MRC-PW02/D and MRC-MPI-1S/D) consisted of aliquots of sample

media placed in separate sample containers and labeled as separate samples. Additionally, matrix spike/matrix spike duplicates (MS/MSD) samples were collected to simulate the background effect and interferences found in the actual samples. The calculated percent recovery of the spike is used as a measure of the accuracy of the total analytical method. MS/MSD samples were collected at a rate of one per 20 field samples. A total of two MS/MSD samples were collected (MRC-PW04 and MRC-MPI-5S).

Per the procedures outlined in the 2007 work plan, volatile organic analysis vials were filled leaving no headspace. Upon collection, all samples were labeled and immediately placed in a cooler with ice. The samples were then packaged and the cooler was shipped to the laboratory with chain of custody (COC) documents prepared in accordance with the 2007 work plan (EEEPC 2007b).

2.1.2 Monitoring Well Inspections

During groundwater sampling, EEEPC conducted a brief inspection of all existing groundwater monitoring, pumping, and recovery wells proposed for sampling. The purpose of these inspections was to determine and document the physical condition of the wells and to identify maintenance actions required to keep the wells operational. The results of the inspections are documented on Table 2-3.

Table 2-3 2009 Well Inspection Summary Results, Mr. C's Dry Cleaners, East Aurora, New York

Well/Borehole No.	Date Inspected	PVC Well Casing ID	Inspection Observations/Maintenance Required
EE-1	5/11/09	2	Replace concrete pad, possibly with asphalt
EE-2	5/11/09	2	Bolts stripped
ESI-1 Replacement	5/11/09	2	Covered by construction debris
ESI-3	5/11/09	2	Difficult to close; J-plug does not fit properly under cap
ESI-5	5/11/09	2	Inner casing cracked, outer cover damaged, inner well cap doesn't fit properly; lower 3 feet of approximately 15-foot-deep well now filled with debris.
ESI-6	5/11/09	2	Rusty lock
MPI-1S	5/11/09	2	None
MPI-3S	5/11/09	2	None
MPI-4S	5/11/09	2	Covered by construction debris
MPI-4I	5/11/09	2	None
MPI-5S	5/11/09	2	None
MPI-6S	5/11/09	2	None
MPI-7I	5/11/09	2	Bolts stripped, no inner cap or room for cap; lower approximately 25 feet of approximately 40-foot-deep well now filled with debris.
MPI-8S	5/11/09	2	Could not located; in 2007, lower approximately 11.5 feet of approximately 18-foot-deep well now filled with debris.

Table 2-3 2009 Well Inspection Summary Results, Mr. C's Dry Cleaners, East Aurora, New York

Well/Borehole No.	Date Inspected	PVC Well Casing ID	Inspection Observations/Maintenance Required
MPI-10B	5/11/09	2	None
MPI-12B	5/11/09	2	None
MPI-13B	5/11/09	2	Paved over
MPI-14B	5/11/09	2	Paved over
MPI-15B	5/11/09	2	Replace pad
MW-04	5/11/09	4	Covered by construction debris
MW-07	5/11/09	2	None
MW-08	5/11/09	2	One bolt missing, needs new J-plug
PW-02	5/11/09	4	One bolt missing
PW-03	5/11/09	4	Pump leaking (immediately corrected by O & M contractor)
PW-04	5/11/09	4	One bolt missing
PW-05	5/11/09	4	One bolt missing
PW-06	5/11/09	4	Two bolts missing
PW-07	5/11/09	4	None
PW-08	5/11/09	4	None
RW-01	5/11/09	6	Bolts stripped

Key:
ID = Inner diameter.
MW = Monitoring well.
PVC = Polyvinyl chloride.
PW = Pumping well.
TOIC = Top of inner casing.

Based on the inspections, required well maintenance includes replacing missing or stripped bolts; installing new asphalt/concrete pads, a new well cover, and a new water-tight inner well plug ("J-Plug"); and repairing a portion of cracked casing.

2.2 Investigation-Derived Waste Management

All investigation-derived waste (IDW) generated during the groundwater sampling activities was handled according to procedures outlined in the work plan. Decontamination water and purged groundwater were the only IDWs generated during the fieldwork. Decontamination water and purged groundwater were pumped into the equalization holding tank at the on-site groundwater treatment system for treatment and disposal along with extracted groundwater.

3 Physical Characteristics of the Study Area

3.1 Physiography

The site is located in the village of East Aurora, New York. The village of East Aurora is located at the boundary of the New York State (NYS) Allegheny Plateau and Lake Erie/Ontario lowland physiographic provinces. North-south valleys dissect the Allegheny Plateau in this area, with the village of East Aurora located at the north end of the east branch of the pre-glacial Cazenovia Creek (Blackmon 1956).

3.2 Topography

The site lies at the edge of the Allegheny Plateau. Topography is truncated to the south and east of the village where Cazenovia Creek exits the Allegheny Plateau and enters the Lake Erie/Ontario lowland. The Erie/Ontario lowland slopes gently north and west toward Lake Erie (Malcolm Pirnie, Inc. 1995). The topography of the area surrounding the site is relatively flat with some low areas at the rear of properties along Main Street. A railroad viaduct is presently approximately 15 feet above ground. East Aurora lies within the Erie Niagara basin bordering Lake Erie and Niagara River. Tannery Brook and Cazenovia Creek run approximately 0.25 mile north and one mile south of the site, respectively. The two surface water bodies flow into Buffalo River and into Lake Erie (approximately 12.5 miles west of the site).

3.3 Geology

The site is located in a residential/commercial area with both paved and unpaved (lawns and soil fill) sections. The site is situated on top fill overlaying glacial deposits deposited during the last glacial ice.

3.3.1 Bedrock

The site is situated on top of the buried bedrock valley of Cazenovia Creek. The Rhinestreet Shale member of the West Falls Formation is the uppermost bedrock unit beneath the site and surrounding area. The Rhinestreet Shale consists of slightly petroliferous, fissile-to-massive, black shale interbedded with medium and dark gray shales in the upper third of the Rhinestreet member. Bedrock underneath the site is estimated at 150 to 200 feet below ground surface (BGS)

(Malcolm Pirnie, inc. 1995). East and west of the buried valley, bedrock is found at 20 to 30 feet BGS.

3.3.2 Overburden

Unconsolidated sediments at the site consist primarily of fill, glacial outwash, lacustrine deposits, and glacial till. During the 1994 RI (Malcolm Pirnie, Inc. 1995), fill was found to approximately 11 feet BGS. Fill underneath the Mr. C's site was described as clayey silt with gravel overlaying gravel with clayey silt and trace of brick fragments. The fill is underlain by 4 to 7 feet glacial till composed of brown clayey silt with varying amounts of shale fragments. The RI identified three stratigraphic units below the fill and till. These stratigraphic units are described below.

Gravel and Sand Outwash

Glacial outwash, encountered in each RI borehole, grades from sandy gravel near the top of the unit to very fine sand at the base. The outwash is approximately 27 feet thick, consisting of 2 to 26 feet of gravel followed by 1.5 to 12 feet of medium-to-coarse sand with varying amounts of fine sand. Fine and very fine sands were encountered at the base of the outwash unit in most of the RI borings (Malcolm Pirnie, Inc. 1995).

Lacustrine Deposits

The glacial outwash is underlain by lacustrine sandy silt. The lacustrine deposits were encountered at an approximate elevation of 888 feet above mean sea level (AMSL) and ranged in thickness between 11.5 and 14.5 feet. These deposits may liquify when disturbed, are uniform, and are characterized by mostly silt and fine to very fine sand (Malcolm Pirnie, Inc. 1995).

Stratified Till and Sand

A sequence of stratified interbedded fine-grained till and sand underlies the lacustrine deposits. It was encountered at 90 feet BGS in the deepest exploratory RI boring. This layer was found to be approximately 49.5 feet thick.

This sequence contains lenses of stratified medium and fine sand interbedded with clayey silt and silty clay till layers. The two lithologies are separated by a sharp contact with the sand layers varying in thickness from thin laminae to 3 feet and the till ranging in thickness from thin laminae to layers 5 to 11 feet thick (Malcolm Pirnie, Inc. 1995).

3.4 Hydrostratigraphic Units

The 1994 RI identified three major hydrostratigraphic units at the site including an unconfined aquifer of saturated outwash deposits (outwash aquifer); the underlying lacustrine aquifer; and a confining layer consisting of the stratified till deposits (Malcolm Pirnie, Inc. 1995). The outwash and lacustrine aquifers are hydrauli-

cally connected, with nearly the same hydraulic heads. However, they are characterized by different hydraulic conductivities and porosities.

Outwash Aquifer

The outwash aquifer is an unconfined aquifer with a saturated thickness of approximately 18 feet. Wells screened across the entire outwash aquifer exhibited a geometric mean hydraulic conductivity of 0.004 centimeter per second (cm/s). Precipitation and infiltration are the main recharge sources for this aquifer with possible exfiltration from sewers located above the water table.

Lacustrine Aquifer

The lacustrine aquifer is a rather uniform aquifer with a saturated thickness of approximately 13 feet. Wells screened across the lacustrine aquifer exhibited hydraulic conductivities that ranged from 1.5×10^{-4} to 4.9×10^{-4} cm/s. During the RI, groundwater flow appeared very similar to the outwash aquifer groundwater flow.

Stratified Till Unit

The confining stratified till unit consists of interbedded layers of clayey till and sand with average permeabilities measured for the clayey unit of 4.8 cm/s. Clay content in the unit ranged between 23.3 and 39.9%. The average hydraulic conductivity for the unit was estimated at 8.8×10^{-6} cm/s (Malcolm Pirnie, Inc. 1995). An upward vertical hydraulic gradient for this unit was calculated on January 1995 indicating that the water table aquifer beneath the site is not the source of recharge to the stratified till unit (Malcolm Pirnie, Inc. 1995).

3.5 Hydrogeology

In August 2007, the groundwater flow direction was radial, with a groundwater mound generally centered near the intersection of Main and Paine streets. This resulted in a groundwater flow divide where groundwater east of Whaley and Paine streets flowed to the east, northeast, and southeast with some flow to the south; and groundwater to the west of Whaley and Paine streets flowed to the west, northwest, and southwest, with some flow to the north. The groundwater gradient on the western half of the site was measured at 0.003 feet per foot (ft/ft), or generally flat; on the eastern half of the site, the gradient was measured at 0.001 ft/ft, also generally flat (EEEPC 2007a). Hydraulic gradients identified during the RI ranged from 0.004 to 0.002 ft/ft (with essentially no vertical flow) for the outwash aquifer and ranged between 0.002 to 0.003 ft/ft for the lacustrine aquifer (Malcolm Pirnie, Inc. 1995).

Groundwater elevation isopleths for the May 2009 data are depicted on Figure 3-1. In May 2009, a groundwater mound was again located at the southwest corner of Main Street and Paine Street, with radial flow to the north, south, east, and west. From Main Street northward, groundwater flow was primarily to the north

and northwest, towards areas of low elevation, especially pumping wells PW-3, PW-5, PW-6, and PW-8. This created a flow divide, with groundwater north of this line of pumping wells flowing to the south. The magnitude of the horizontal flow gradient varies throughout the area, depending on proximity to the pumping wells. The gradient is steep (high relative magnitude) north of Main Street in the vicinity of the pumping wells, but it is relatively shallow south of Main Street in the area of the First Presbyterian Church. The depth of groundwater beneath the site in May 2009 ranged from approximately 7 to 12 feet in the monitoring wells but was as deep as 23 feet in some active pumping wells (see Table 3-1).

Table 3-1 2009 Groundwater Elevations, Mr. C's Dry Cleaners Site, East Aurora, New York

Well ID	Water Level Measurement Date	Measured Well Depth (feet TOIC)	TOIC Casing Elevation (feet AMSL)	Water Level (feet TOIC)	Water Elevation (feet AMSL)	Unit Screened
EE-1	5/11/09	27.51	913.46	8.13	905.33	OA
EE-2	5/11/09	31.94	916.3	12.02	904.28	OA
ESI-1 Replacement	NA	NA	916.99	NA	NA	OA
ESI-3	5/11/09	NA	915.85	DRY	DRY	OA
ESI-5	5/11/09	21.16	912.64	11.15	901.49	OA
ESI-6	5/11/09	16.68	914.48	10.25	904.23	OA
MW-4	NA	NA	914.02	NA	NA	OA
MW-7	5/11/09	14.25	915.96	10.90	905.06	OA
MW-8	5/11/09	13.92	915.62	11.00	904.62	OA
MW-14	5/11/09	NA	NA	NA	NA	OA
MPI-1S	5/11/09	19.21	915.08	10.20	904.88	OA
MPI-3S	5/11/09	18.00	914.4	10.21	904.19	OA
MPI-4S	NA	NA	914.82	NA	NA	OA
MPI-4I	5/11/09	42.17	915.66	10.99	904.67	LA
MPI-5S	5/11/09	17.91	916.45	11.55	904.90	OA
MPI-6S	5/11/09	22.27	915.03	10.93	904.10	OA
MPI-7I	5/11/09	15.09	916.14	10.88	905.26	LA
MPI-10B	5/11/09	31.73	915.68	10.80	904.88	OA
MPI-12B	5/11/09	35.13	911.19	6.92	904.27	OA
MPI-13B	NA	NA	913.25	NA	NA	OA
MPI-14B	NA	NA	913.18	NA	NA	OA
MPI-15B	5/11/09	28.78	NA	9.00	NA	OA
PW-2	5/11/09	NA	915.58	19.10	896.48	OA
PW-3	5/11/09	NA	916.20	23.00	893.20	OA
PW-4	5/11/09	NA	915.21	22.90	892.31	OA
PW-5	5/11/09	NA	914.77	14.00	900.77	OA
PW-6	5/11/09	NA	915.42	21.46	893.96	OA
PW-7	5/11/09	NA	914.90	10.89	904.01	OA

Table 3-1 2009 Groundwater Elevations, Mr. C's Dry Cleaners Site, East Aurora, New York

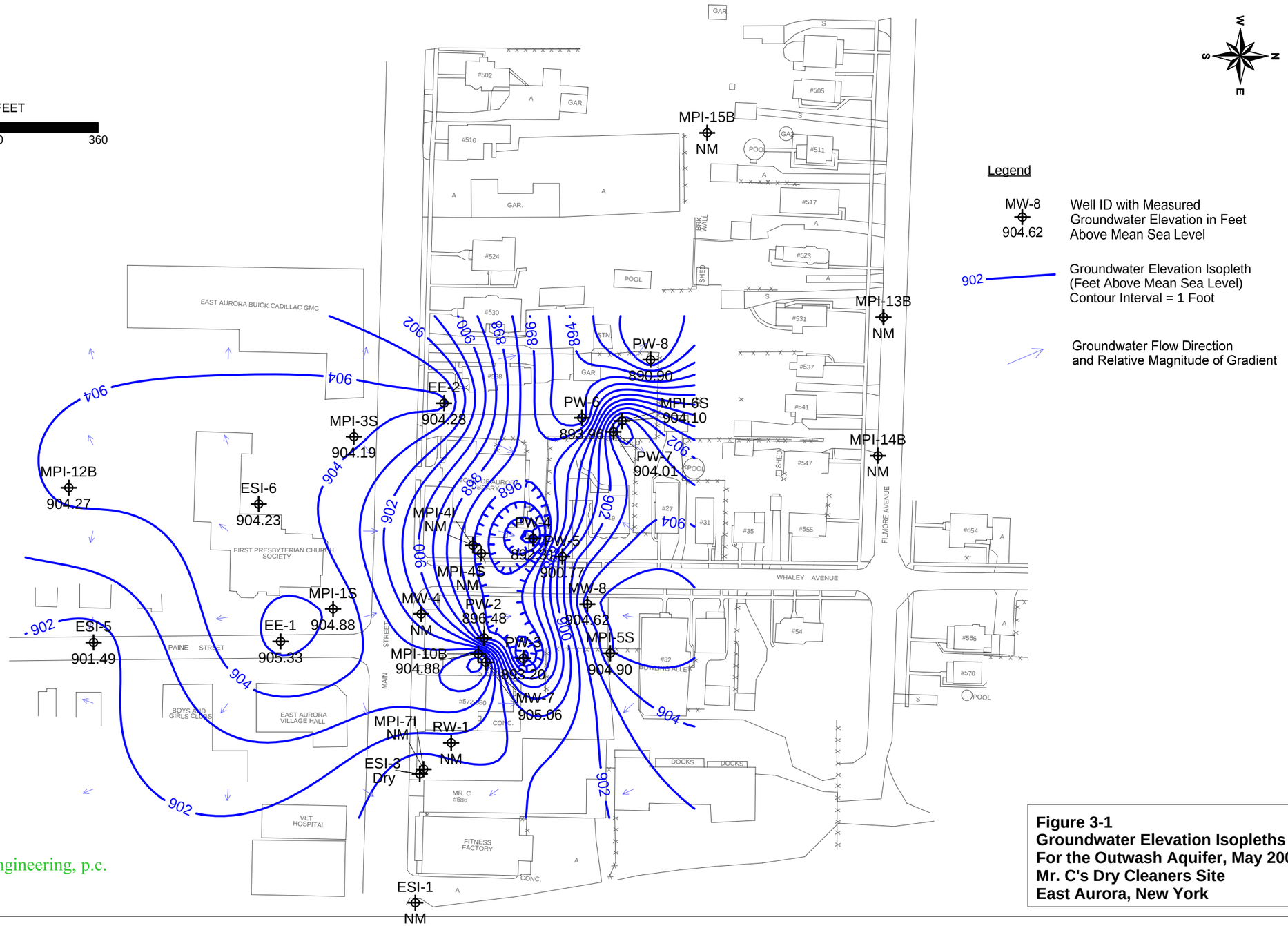
Well ID	Water Level Measurement Date	Measured Well Depth (feet TOIC)	TOIC Casing Elevation (feet AMSL)	Water Level (feet TOIC)	Water Elevation (feet AMSL)	Unit Screened
PW-8	5/11/09	NA	911.35	20.45	890.90	OA
RW-1	5/11/09	24.48	NA	NA	NA	OA

Key:
AMSL = Above mean sea level.
OA = Outwash aquier.
LA = Lacustrine aquifer.
PW = Pumping well.
MW = Monitoring well.
TOIC = Top of inner casing.
NA = Not available.

002700.DC13.02.01.02
MrC_GW_Elevation_2009.srf - 07/28/2009

HORIZONTAL SCALE IN FEET

0 120 240 360



Legend

MW-8
904.62
Well ID with Measured Groundwater Elevation in Feet Above Mean Sea Level

902
Groundwater Elevation Isopleth (Feet Above Mean Sea Level) Contour Interval = 1 Foot

Groundwater Flow Direction and Relative Magnitude of Gradient

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Figure 3-1
Groundwater Elevation Isopleths
For the Outwash Aquifer, May 2009
Mr. C's Dry Cleaners Site
East Aurora, New York

4 Nature and Extent of Contamination

This section discusses the analytical results for the 2009 samples for the Mr. C's Dry Cleaners site and compares the results with prior sampling conducted by EEEPC. A short summary of the results of previous investigations (including the 1994 RI) is also provided in Section 4.1.

The analytical results for groundwater samples collected since 2002 are presented on Figure 4-1 (see back pocket). The 2009 analytical results are also summarized in Table 4-1. The complete laboratory data packs for the 2009 samples will be provided under separate cover.

Independent data validation of the analytical results was performed by EEEPC. The data usability summary report (DUSR) is provided as Appendix B.

During the 2009 field activities, groundwater samples were collected from 23 wells. The groundwater sample analytical results were screened against the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1, Class GA Drinking Water Standards and Guidance Values (NYSDEC 1998).

4.1 Summary of Results from Previous Investigations

Investigations conducted prior to the 1995 RI (Malcolm Pirnie, Inc. 1995) detected PCE and other chlorinated solvents in the groundwater, soil gas, and sewers in the vicinity of the Mr. C's site. The highest concentrations of PCE in soil gas and groundwater were found near the Mr. C's sanitary sewer lateral. These investigations indicated the Mr. C's site as the possible source of PCE in the groundwater and soil gas.

It was determined that the PCE levels found in the sewers were consistent with a source located at the Mr. C's site (migration possibly occurring along sanitary sewers). It was also concluded that groundwater is an important migration pathway.

The 1995 Malcolm Pirnie, Inc., RI found the highest concentration of PCE beneath the Mr. C's building. The RI also determined the horizontal and vertical extents of the contamination and found that other contaminants at the site

Table 4-1 Summary of Positive Analytical Results for Groundwater Samples, May 2009, Mr. C's Cleaners, East Aurora, New York

Analyte	Screening Criteria [1]	Sample ID: MRC-EE-1 Date: 05/12/09	MRC-MW-EE2 05/12/09	MRC-ESI-5 05/12/09	MRC-ESI-6 05/12/09	MRC-MPI-1S 05/12/09	MRC-MPI-1S/D 05/12/09
Volatile Organic Compounds by SW8260 (µg/L)							
1,1,1-Trichloroethane	5	**12**	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	50	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	5	5 U	**7.5**	5 U	**37**	5 U	1.1 J
Methyl tert-butyl ether	10	1.6 J	**130**	5 U	7.4	5 U	5 U
Tetrachloroethene	5	4.5 J	5 U	5 U	**320 J**	**54**	**49**
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5	5 U	5 U	5 U	**17**	1.2 J	1.1 J
Vinyl chloride	2	5 U	**38**	5 U	5 U	5 U	5 U

*Duplicate sample of MRC-MPI-1S

Table 4-1 Summary of Positive Analytical Results for Groundwater Samples, May 2009, Mr. C's Cleaners, East Aurora, New York

Analyte	Screening Criteria [1]	Sample ID:	MRC-MPI-3S	MRC-MPI-4I	MRC-MPI-5S	MRC-MPI-6S	MRC-MPI-7I	MRC-MPI-10B
		Date:	05/12/09	05/12/09	05/12/09	05/12/09	05/12/09	05/12/09
Volatile Organic Compounds by SW8260 (µg/L)								
1,1,1-Trichloroethane	5		5 U	5 U	5 U	5 U	1.1 J	5 U
Bromodichloromethane	50		5 U	5 U	5 U	5 U	1.9 J	5 U
Chloroform	7		5 U	5 U	5 U	5 U	**11 J**	5 U
cis-1,2-Dichloroethene	5		5 U	**780 J**	**7.7**	**14**	**18**	3.3 J
Methyl tert-butyl ether	10		**190 J**	**13**	5 U	1.8 J	5 U	5 U
Tetrachloroethene	5		10 UJ	**640 J**	**15 J**	**8100 J**	**490 J**	**450 J**
trans-1,2-Dichloroethene	5		5 U	4.4 J	**10**	5 U	5 U	5 U
Trichloroethene	5		5 U	**180**	3.6 J	**94**	**6.5**	**5.1**
Vinyl chloride	2		5 U	5 U	**2.7 J**	5 U	5 U	5 U

Table 4-1 Summary of Positive Analytical Results for Groundwater Samples, May 2009, Mr. C's Cleaners, East Aurora, New York

Analyte	Screening Criteria [1]	Sample ID:	MRC-MPI-12B	MRC-MPI-15B	MRC-MW-07	MRC-MW-08	MRC-PW02	MRC-PW02/D
		Date:	05/12/09	05/12/09	05/12/09	05/12/09	05/11/09	05/11/09
Volatile Organic Compounds by SW8260 (µg/L)								
1,1,1-Trichloroethane	5		5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	50		5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	7		5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	5		**16**	5 U	5 U	**9.4**	2.8 J	2.3 J
Methyl tert-butyl ether	10		**90**	7.4	5 U	5 U	5 U	5 U
Tetrachloroethene	5		2.8 J	5 U	**700 J**	**210 J**	**1200 J**	**1100 J**
trans-1,2-Dichloroethene	5		5 U	5 U	1.7 J	**12**	3.4 J	4.1 J
Trichloroethene	5		5 U	5 U	1.4 J	**16**	**7.5**	**7.3**
Vinyl chloride	2		5 U	5 U	5 U	5 U	5 U	5 U

*Duplicate sample of MRC-PW02

Table 4-1 Summary of Positive Analytical Results for Groundwater Samples, May 2009, Mr. C's Cleaners, East Aurora, New York

Analyte	Screening Criteria (1)	Sample ID:	MRC-PW03	MRC-PW04	MRC-PW05	MRC-PW06	MRC-PW07	MRC-PW08	MRC-RW01
		Date:	05/11/09	05/11/09	05/11/09	05/12/09	05/11/09	05/11/09	05/12/09
Volatile Organic Compounds by SW8260 (µg/L)									
1,1,1-Trichloroethane	5		5 U	5 U	5 U	5 U	5 U	10 U	1.3 J
Bromodichloromethane	50		5 U	5 U	5 U	5 U	5 U	10 U	5 U
Chloroform	7		5 U	5 U	5 U	5 U	5 U	10 U	1 J
cis-1,2-Dichloroethene	5		4.3 J	**34**	**21**	**300 J**	**5.7**	**30**	2.4 J
Methyl tert-butyl ether	10		5 U	**64**	2.6 J	**37**	5 U	4.2 J	5 U
Tetrachloroethene	5		**300 J**	**2400 J**	**4000 J**	**340 J**	**1400 J**	**200 J**	**190 J**
trans-1,2-Dichloroethene	5		**6.2**	3.9 J	**12**	3.9 J	5 U	10 U	5 U
Trichloroethene	5		**6**	**100**	**140**	**120**	**29**	**28**	1.5 J
Vinyl chloride	2		5 U	5 U	5 U	5 U	5 U	10 U	5 U

Note:

Shaded cells exceed the screening value.

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, 1998 (with updates), Class GA Groundwater.

Key:

J = Estimated value.

U = Not detected at the reported value.

µg/L = Micrograms per liter.

consisted of petroleum hydrocarbons and VOCs, including compounds resulting from PCE degradation. The RI concluded that substantial VOC contamination is present in the outwash aquifer (upper unconfined aquifer in saturated glacial outwash sand and gravel). It was determined that PCE distribution in the lacustrine aquifer (saturated sand and silt lacustrine deposits) is more localized and at lower levels. The RI also concluded that the Agway property's existing well network adequately defined the limits of the petroleum hydrocarbon groundwater plume. The RI did not define the extent of the petroleum hydrocarbon plume west/southwest of the First Presbyterian Church. The RI identified the leading edges of the chlorinated organics groundwater plume. The RI identified leakage from the Mr. C's sanitary sewer lateral as the suspected original mechanism of PCE release to groundwater. The RI suggested that the presence of PCE and PCE degradation by-products south of Main Street are either the result of migration from the Mr. C's site or PCE originating from a different source. The RI found no evidence of migration of denser-than-water nonaqueous-phase liquid (DNAPL) PCE to the lacustrine sandy silt or substantial accumulation of DNAPL. RI analytical data indicated an increase of chlorinated VOCs with depth in the outwash aquifer, with the highest concentrations occurring near the base of the outwash aquifer in a narrow elongated plume extending downgradient (northwest) from the Mr. C's building.

4.2 Summary of Previous Subsurface Soil Results

A previous subsurface soil sample was collected immediately above the water table from each of the three boreholes located in the parking lot on the south side of the First Presbyterian Church, 9 Paine Street, which were installed in May 2004 (see Figure 1-1). A second sample was collected from borehole BH-2. These subsurface soil samples were analyzed for Target Compound List (TCL) VOCs. Soil cores were scanned for VOCs by the EEEPC team using a photoionization detector (PID). PID readings above background were obtained in borehole BH-1 (0.5 part per million [ppm]) in the 6-to-8-foot soil core (sample collected) and in borehole BH-2 in the 0.5-to-2-foot (100.2 ppm [sample collected]) and 2-to-4-foot (2.4 ppm) soil cores. Orange stains were observed in the 4-to-6-foot soil core from BH-2 and the 2-to-4-foot soil core from BH-3.

Four VOCs were detected in the soil samples, including acetone (a common laboratory contaminant), cis-1,2-dichloroethene (DCE), PCE, and trichloroethene (TCE). All VOCs were detected at concentrations below NYSDEC soil cleanup objectives (NYSDEC 1994). Acetone was detected only in the samples from borehole BH-2 at estimated concentrations ranging between 4.57 and 4.92 micrograms per kilogram (µg/kg). Acetone was the only VOC detected in the shallow soil sample collected from the 0.5-to-1.5-foot interval from borehole BH-2. The deeper sample from the same borehole collected from the 6-to-7-foot interval contained acetone, cis-1,2-DCE, and PCE.

PCE concentrations ranged between 29.7 micrograms per kilogram (µg/kg) (in the deeper sample from borehole BH-2) and 77.4 µ/kg (in the 6-to-8-foot depth interval sample from borehole BH-1). TCE was only detected in boreholes BH-1 and BH-3 at concentrations ranging between 2.3 µg/kg (in the 7-to-8-foot depth interval sample from BH-3) and 4.52 µg/kg (in the BH-1 sample). Concentrations of cis-1,2-DCE ranged between 0.894 µ/kg (in the deeper sample from BH-2) and 4.54 µ/kg (in the sample from BH-1).

4.3 2009 Groundwater Results

In May 2009, groundwater samples were collected from 23 monitoring and pumping wells and analyzed for VOCs. A summary of positive analytical results is presented in Table 4-1.

Nine VOCs were detected in the groundwater samples, eight of which were detected in at least one sample at concentrations that exceeded the NYSDEC Class GA groundwater standards and guidance values (NYSDEC 1998). The primary contaminant of concern remains PCE and its breakdown products, TCE and cis-1,2-DCE. The highest concentration of PCE detected in monitoring wells in May 2009 was 8,100 µg/L in MPI-6S, which is located in the rear of 538 Main Street (see Table 4-1 and Figure 4-1). Several other monitoring wells also contained PCE at concentrations between 200 and 1,000 µg/L, including ESI-6, MPI-10B, MPI-4I, MPI-7I, MW-7, and MW-8. All pumping wells contained PCE at concentrations ranging from 190 to 2,400 µg/L. The maximum TCE concentration detected in May 2009 was 180 µg/L in monitoring well MPI-4I. Most other TCE detections were less than 20 µg/L except at pumping wells. The highest cis-1,2-DCE concentration was also detected at MPI-4I. The concentration detected in this well (approximately 780 µg/L) was more than one order of magnitude higher than all other detections, with the exception of approximately 300 µg/L in pumping well PW-6.

Other compounds detected at concentrations exceeding NYSDEC Class GA groundwater standards and guidance values include:

- 1,1,1-Trichloroethane at 12 µg/L in EE-1;
- Chloroform at 11 µg/L in MPI-7I;
- Methyl tert-butyl ether (MTBE) at 190 µg/L in MPI-3S;
- Trans-1,2-DCE at 12 µg/L in MW-08; and
- Vinyl chloride at 38 µg/L in EE-2.

Concentration isopleths of PCE and total chlorinated VOCs (cVOCs) for the May 2009 data are presented on Figures 4-2 and 4-3, respectively.

Three minor impacts on data usability were identified during the analytical data review. A trip blank was shipped with the field samples but was not analyzed.

The analytical results for the field samples were typical of those detected in the past and are primarily chlorinated VOCs, which are not typically affected by sample storage and shipment. Therefore, no significant impact is anticipated and sample results were not qualified. However, analytical results in Table 4-1 were flagged in "U" (not detected) or "J" (estimated) as appropriate due to low-level method blank contamination and instrument calibration range exceedances. Details of the data review are provided in the DUSRs in Appendix B.

Summary of 2009 Analytical Results

Groundwater in proximity to the Mr. C's site contains elevated levels of several chlorinated solvents, their breakdown products, and other hydrocarbons. The highest concentrations of PCE (the primary contaminant of concern) and its breakdown products are present in a plume that extends from the Agway property at the northeast corner of Main Street and Whaley Avenue at least 200 feet to the northwest, nearly to Fillmore Avenue. The highest concentrations of PCE and other cVOCs are associated with the pumping wells at the Agway property, behind the town library, and behind 538 Main Street indicating good capture of groundwater contaminants by these wells. An area of elevated PCE concentrations , although significantly lower than in the area described above, also remains near the First Presbyterian Church (ESI-6). Degradation of PCE is evident by the presence of elevated levels of its daughter products (TCE and cis-1,2-DCE). The only non-chlorinated VOC detected in May 2009 was MTBE. This fuel additive was present primarily west of Whaley Avenue and Paine Street, with the highest concentrations detected west of the First Presbyterian Church nearest the automobile dealership. The presence of elevated MTBE levels is not believed to be related to the PCE contamination.

Comparison to Previous Data

The overall distributions of the total cVOC and PCE contaminant plumes are relatively the same as seen in previous years. Figure 4-1 presents a summary of previous groundwater analytical data since 2002. Figures depicting contaminant concentration isopleths for PCE and cVOC data collected in 2002 and 2004 are presented in EEEPC 2004b. Similar figures for 2007 are presented in EEEPC 2007b. The following is a summary of the findings:

- PCE is the primary cVOC detected in the groundwater samples and, in general, the distribution of PCE concentrations is similar to the total cVOC concentration distribution. However, previously, cis-1,2-DCE levels in MW-4 had been consistently higher (approximately two times) than the PCE level in this well. However, the concentration of cis-1,2-DCE and all other cVOCs dropped significantly from 2004 to 2007. This well was covered by construction materials and could not be sampled in 2009.

002700.DC13.02.01.02
MrC_PCE_in_GW_2009.srf - 07/21/2009

FEET
0 120 240 360

Tetrachloroethene in micrograms per liter
5,000
1,000
500
100
50
10
5

MPI-15B ND
MPI-13B NS
PW-8 200
EE-2 1.2
PW-6 340
MPI-6S 8100
PW-7 1400
MPI-14B NS
MPI-3S 4.2
MPI-12B 2.8
ESI-6 320
MPI-4I 640
PW-4 2400
PW-5 400
MPI-4S NS
MW-8 210
MPI-1S 54
MW-4 NS
PW-2 1200
ESI-5 4.1
EE-1 4.5
MPI-10B 420
PW-3 270
MPI-5S 15
MW-7 870
MPI-7I 490
RW-1 190
ESI-3 NS
ESI-1 NS

EAST AURORA BUICK CADILLAC GMC
PIERCE STREET
WHALEY AVENUE
FILMORE AVENUE
TOWN OF AURORA LIBRARY
BOYS AND GIRLS CLUBS
VET HOSPITAL
FITNESS FACTORY
POOL
DOCKS

Legend
ND = not detected
NS = not sampled
PCE = Tetrachloroethene (a.k.a. perchloroethylene)
PW-8 200 Well ID with PCE concentration in µg/L

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Figure 4-2
Tetrachloroethene in Groundwater
Mr. C's Dry Cleaners Site
East Aurora, New York
May 2009

002700.DC13.02.01.02
MrC_cVOC_in_GW.srf - 07/27/2009

FEET
0 120 240 360

Total chlorinated VOCs in micrograms per liter
5,000
1,000
500
100
50
10
5

MPI-15B ND
MPI-13B NS
PW-8 260
EE-2 47
PW-6 760
MPI-6S 8,200
PW-7 1,400
MPI-14B NS
MPI-3S 4.2
MPI-12B 19
ESI-6 360
MPI-4I 1,600
PW-4 2,500
PW-5 4,200
MPI-4S NS
MW-4 NS
PW-2 1,200
MW-8 250
MPI-1S 55
ESI-5 4.1
EE-1 16
PW-3 290
MPI-5S 39
MPI-10B 430
MW-7 870
RW-1 200
MPI-7I 530
ESI-3 NS
ESI-1 NS

Legend

ND = not detected

NS = not sampled

cVOC = Sum of chlorinated volatile organic compound concentrations

PW-8 260 Well ID with cVOC concentration in µg/L

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Figure 4-3
Total Chlorinated VOCs in Groundwater
Mr. C's Dry Cleaners Site
East Aurora, New York
May 2009

- From 2007 to 2009, the concentrations of PCE and TCE in MPI-4I (near the corner of Main Street and Whaley Avenue) declined by over 50%, whereas the concentration of cis-1,2-DCE increased nearly 5-fold, indicating that natural reductive dechlorination of PCE is occurring in this area.

- The concentrations of PCE in the eight pumping wells (RW-1 and PW2- through PW-8) generally increased from 2002 until 2004/2005. Since that time, many concentrations have decreased but are still significantly higher than in 2002. The groundwater treatment system appears to be drawing the contamination towards the pumping wells, causing an increase in PCE concentrations in these wells since inception of the groundwater treatment system. Concentrations may be declining since historical maxima due to reduction in plume size and natural degradation of the contaminants. The distribution of PCE is consistent with the hydraulic low observed north of the library created by the pumping wells.

- PCE levels in MPI-6S have continually increased from non-detect in 2002 to 8,100 µg/L in 2009, which represents a nearly 2-fold increase in concentration since 2007. This is likely due to the proximity of this well to the pumping wells that draw the contaminant plume to that area for capture and treatment.

- At MPI-5S north of the Agway property, a 3-fold increase in PCE concentration to 15 µg/L was observed from 2007 to 2009; however, the most recent concentration is more than 50% lower than those detected in 2003 and 2004 and is relatively low compared to other areas of the plume.

- At MW-8 along Whaley Avenue north of the Agway property, there was a significant decrease in cVOC concentrations from 2007 to 2009. An approximately 40-fold reduction in TCE and cis-1,2-DCE concentrations was observed. The PCE concentration also decreased by over 4-fold, and vinyl chloride declined from 35 µg/L to non-detect. The May 2009 concentrations of cVOCs in MW-8 were generally the lowest recorded in this well to date.

- The concentrations of PCE and other cVOCs in ESI-6 (adjacent to the First Presbyterian Church) generally decreased from 2002 to 2007 but showed a small increase or have remained similar since 2007. With no recovery wells in the vicinity of this monitoring well, plume characteristics are expected to remain relatively stable, with natural degradation predominating plume cleanup.

- In general, MTBE levels throughout the area have continued to decline since 2002.

4.4 Summary and Conclusions

Groundwater samples were collected from 23 monitoring and pumping wells in May 2009. All groundwater samples were analyzed for VOCs.

Groundwater beneath Mr. C's contains elevated levels of several chlorinated solvents, their breakdown products, and other hydrocarbons. Nine VOCs were detected in at least one groundwater sample, including six cVOCs (PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride, and 1,1,1-trichloroethane), MTBE, and trihalomethanes (chloroform and bromodichloromethane). Eight of these VOCs were detected at levels that exceeded the NYSDEC Class GA groundwater standards and guidance values used for comparison with the groundwater analytical results (NYSDEC 1998).

In comparison, 14 VOCs were detected in at least one of 29 groundwater samples collected in 2007. In addition to the compounds detected in 2009, BTEX, acetone, cyclohexane, isopropylbenzene, methylcyclohexane, and carbon disulfide were also present in 2007. The lack of detection of these compounds in 2009 indicates that they are transient compounds, possibly resulting from laboratory or field contamination, and are not considered contaminants of concern for this site.

The highest concentrations of PCE and its breakdown by-products occur in an area extending over 200 feet to the northwest from the Agway property towards Fillmore Avenue. The northern and northwestern boundaries of the contaminant plume could not be fully defined due to a lack of wells that could be sampled in this area. Elevated, although significantly lower, levels of cVOCs also occur northwest of the First Presbyterian Church (ESI-6) and immediately west of the Mr. C's site (ESI-3 and RW-1). The distributions of total cVOCs and PCE in the contaminant plume are similar (see Figures 4-2 and 4-3). Based on the interpretation of analytical results using the Surfer modeling program, the area containing the highest levels of contamination has moved slightly westward since 2007; it was formerly centered under the private residences located at 19 and 27 Whaley Avenue. Although concentrations remain high in this area, the maximum concentrations were detected in the rear of 538 Main Street, behind 19 and 27 Whaley Avenue. Aromatic hydrocarbons (BTEX) were not detected in 2009; however, the fuel additive MTBE continues to be present west of the site, with concentrations increasing to the west. The MTBE concentrations detected in 2009 were generally lower than those previously detected.

The concentrations of PCE in pumping wells (RW-1 and PW-2 through PW-8) have generally decreased since 2004 but remain significantly higher than in 2002. The sole exception was PW-5, where the PCE concentration has increased to a maximum in 2009. The groundwater treatment system has created a hydraulic low area drawing the contamination toward the pumping wells, causing an initial increase followed by a long-term decrease in the PCE concentrations in these wells as the plume is remediated.

5 References

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A Well Purge and Sample Records

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: EE-1
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 8.13 feet TOIC
Total Well Depth: ~~27.51~~ feet TOIC 26.91
Depth to Pump: ~~25.51~~ feet TOIC 25 (Pump 5/12/09)
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1006
End Time: 1130
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Well Diameter: 2 inches
1x Well Volume: 3.15 gallons 1.5=3vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1006	0	5.45	15.2	141	6743	—	~~6743~~	—
1012	1.5	5.70	13.8	117	6707	—	>1000	—
1018	3	6.02	13.4	92	6624	—	~~8877~~	—
1024	4.5	6.32	14.0	90	6563	—	726	—
1030	6	6.68	14.6	82	6281	—	825	—
1036	7.5	6.81	15.0	74	6031	—	850	—
1042	9	6.89	15.2	71	6002	—	723	—
1048	10.5	6.97	15.1	62	5720	—	412	—
1054	12.0	7.05	15.2	61	5605	—	197	—
1100	13.5	7.08	14.8	57	5584	—	161	—
1106	15.0	7.11	14.4	55	5532	—	130	—
1112	16.5	7.14	14.2	58	5530	—	86	—
1118	18.0	7.11	14.1	56	5475	—	73	—
1124	19.5	7.10	14.0	53	5472	—	32	—
1130	21.0	7.08	13.8	50	5453	—	26	—
Final Sample Data:		7.08	13.8	50	5453	—	26	—

Sample ID: MRC-EE-1
Sample Time: 1132
~~Duplicate?~~ ☐
~~MS/MSD?~~ ☐
Dupe Samp ID: _____

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): S. Craig, ~~J.Meys~~

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WELL PURGE & SAMPLE RECORD

EEI-2

Site Name/Location: Mr C's Dry Cleaners
Well ID: EE-2
EEEPC Project No.: 002700.DC02.01.02
Date:

Initial Depth to Water: 12.02 feet TOIC
Total Well Depth: ~~31.94~~ feet TOIC 31.34
Depth to Pump: ~~29.94~~ feet TOIC 29
Pump 5/12/09
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1340
End Time: 1509
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Well Diameter: 2 inches
1x Well Volume: 3.25 gallons 3x 9.75

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1340	0	6.97	15.1	-53	3127	—	>1000	12.02
1350	~~3~~ 1.00	7.06	15.7	-38	2960	—	>1000	
1400	~~2~~ 2.00	7.20	15.6	-33	2885	—	~~2~~967	
1410	~~3~~ 3.00	7.44	15.7	-39	2861	—	634	
1419	4.00	7.20	15.6	-42	2857	—	428	
1425	5.00	7.47	14.8	-61	2804	—	226	
1434	6.~~00~~	7.34	15.2	-80	2809	—	59	
1443	7.00	7.34	14.4	-91	2800	—	17.9	
1450	8.00	7.28	15.4	-81	2794	—	18.1	
1500	9.00	7.48	15.4	-83	2790	—	13.1	
1509	10.00	7.46	15.4	-82	2790	—	12.8	
Final Sample Data:		7.46	15.4	-82	2790	—	12.8	

Sample ID: MRC-EE-2
Sample Time: 1510
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID: _____

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____

Sampler(s): ~~S. Craig, J.Mays~~ B. Kroon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: ESI-5
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 11.15 feet TOIC
Total Well Depth: ~~24.16~~ 13 feet TOIC
Depth to Pump: ~~15.40~~ feet TOIC (Rev 5/13/09)
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 0953
End Time: 1035
BK ☒ Bailer ☒ Pump
Pump Type: Typhoon
Well Diameter: 2 inches
1x Well Volume: 0.2 gallons 0.6 = 3vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0953	0.0	5.02	12.6	157	1470		>1000	
0958	1.0	5.82	11.8	127	1465		273	
1003	1.8	6.34	11.8	95	1057		216	
1008	3.1	6.67	11.4	86	843.4		244	
1013	3.9	6.74	12.9	89	1112		307	
1018	4.6	6.87	12.8	86	1024		259	
1023	5.1	7.01	12.0	83	876.0		127	
1028	5.8	7.18	12.4	55	799.5		46.5	
1033	6.4	7.18	11.8	BK ~~81~~ 161	769.6		38.6	
Final Sample Data:		7.18	11.8	161	769.6		38.6	

Sample ID: MRC-ESI-5
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1035
MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): ~~S. Craig, J. Mays~~ B. Kroon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: ESI-6
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.25 feet TOIC
Total Well Depth: ~~16.68~~ feet TOIC 16.08
Pump 5/13/09 Depth to Pump: ~~14.68~~ feet TOIC ~14
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1115
End Time: 1150
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Well Diameter: 2 inches
1x Well Volume: 1.04 gallons 3x = 3.14

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	DRP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1115	0	6.84	12.4	150	3622	-	>1000	10.25
1120	1.0	6.74	12.1	134	3697	-	285	
1125	2.0	6.78	12.0	126	3714	-	36.1	
1130	3.0	6.86	12.0	117	3723	-	15.5	
1135	4.0	6.96	12.8	115	3713	-	28.5	
1140	5.0	6.90	13.5	118	3709	-	26.7	
1145	6.0	6.93	13.0	122	3707	-	26.3	
1150	7.0	6.97	13.1	119	3701	-	16.9	
Final Sample Data:		6.97	13.1	119	3701	—	16.9	—

Sample ID: MRC-ESI-6
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1152
MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): ~~S. Craig, J. Mays~~ J. Mays

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-1S
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.20 feet TOIC
Start Time: 1000
Total Well Depth: ~~19.21~~ feet TOIC 18.61
End Time: 1140
Depth to Pump: ~~17.21~~ feet TOIC ~17
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Pluses 5/12/09 Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.5 gallons 4.5 = 3 vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1000	0	5.31	12.5	207	678.9	-	154	10.20
1005	1.0	5.98	12.3	163	649.2	-	114	
1010	2.0	6.08	11.7	156	679.2	-	50	
1015	3.0	6.21	11.1	150	774.6	-	10	
1020	4.0	6.50	11.4	145	777.2	-	9	
1025	5.0	6.57	11.6	139	921.7	-	5	
1030	6.0	6.58	11.2	134	926.9	-	2	
1035	7.0	6.61	11.4	132	932.6	-	2	
Final Sample Data:		6.61	11.4	132	932.6	—	2	—

Sample ID: MRC-MPI-1S
Duplicate? ☑
Dupe Samp ID: MRC-MPI-1S|D
Sample Time: 1140
MS/MSD? ☐

Analyses:	Methods:	Comments:
☒ VOCs	☐ CLP	
☐ SVOCs	☐ SW846	
☐ PCBs	☐ Drink. Wtr.	
☐ Metals	☐ 8260	
☐ _____	☐ _____	Sampler(s): ~~S. Craig~~, J.Mays

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-3S
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.21 feet TOIC
Start Time: 1121
Total Well Depth: ~~18.00~~ feet TOIC 17.40
End Time: 1146
Depth to Pump: ~~16.00~~ feet TOIC ~16
Bailer ☒ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: 12 V Mini Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.27 gallons 3.81

Kleeu 5/13/09

Time	Purge Volume (gallons/~~liters~~)	pH (s.u.)	Temp. (°C/~~°F~~)	ORP (mV)	Conductivity (µS/cm ~~mS/cm~~)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1121	0.2	6.32	12.7	-32	3861		109	
1126	0.5	6.71	10.3	-45	3910		125	
1131	1.1	6.97	10.6	-46	3825		96	
1136	2.6	7.06	10.4	-60	3746		48.2	
1141	3.4	7.07	10.3	-62	3702		24.1	
1146	4.3	7.13	10.8	-63	3698		23.6	
Final Sample Data:		7.13	10.8	-63	3698	—	23.6	—

Sample ID: MRC-MPI-3S
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1147
MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____

Sampler(s): ~~S. Craig, J.Mays~~ B. Kroon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-4I
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.99 feet TOIC
Start Time: 1500
Total Well Depth: ~~47.17~~ feet TOIC 41.57
End Time: 1619
Depth to Pump: ~~40.17~~ feet TOIC ~40 (Pumped 5/10/09)
Bailer ☒ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: 12 V Mini Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 5.1 gallons 15.3

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	DRP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1500	0	7.03	14.6	-98	2063	—	>1000	10.99
1517	2.5	7.35	14.1	-69	2052	-	47.7	
1525 ~~1534~~	5.0	7.40	14.0	-88	2242	-	10.7	
1539 ~~1551~~	7.5	7.36	14.2	-90	2331	-	6.39	
1550 ~~1608~~	10.0	7.21	14.1	-92	2327	-	2.50	
1604 ~~1625~~	12.5	7.19	14.3	-95	2329	-	2.39	
1618 ~~1642~~	15.0	7.15	14.0	-99	2331	-	1.57	
Final Sample Data:		7.15	14.0	-99	2331	—	1.57	—

Sample ID: MRC-MPI-4I
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1619
MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): ~~S. Craig~~, J.Mays

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International Specialists in the Environment
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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners — Well ID: MPI-5S

EEEPC Project No.: 002700.DC02.01.02 — Date: 5/12/09

Initial Depth to Water: 11.55 feet TOIC — Start Time: 1535

Total Well Depth: ~~17.97~~ feet TOIC 17.31 — End Time: 1550

Depth to Pump: ~~15.97~~ feet TOIC ~15 — ☒ Bailer ☐ Pump

Pumps 5/10/09

Initial Pump Rate: _____ Lpm / gpm — Pump Type: _____

adjusted to: _____ at _____ minutes — Well Diameter: 2 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 1.01 gallons 3.05=3vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1535	0	7.20	15.8	108	3110	—	71000	—
1540	1	7.15	13.3	63	3218	—	871	—
1543	2	7.13	13.1	12	3293	—	263	—
1547	3	7.13	12.9	15	3297	—		—
1550	4	7.13	12.8	11	3284	—		—
Final Sample Data:		7.13	12.8	11	3284	—	10	—

Sample ID: MRC-MPI-5S — ~~Duplicate?~~ ☐ — Dupe Samp ID: —

Sample Time: 1553 — MS/MSD? ~~☒~~

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____

Sampler(s): S. Craig, ~~J.Mays~~

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-6S
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.93 feet TOIC
Start Time: 1505
Total Well Depth: ~~22.27~~ feet TOIC 21.67
End Time: 1542
Depth to Pump: ~~20.27~~ feet TOIC ~20
Bailer ☒ Pump
Revised 5/13/09
Initial Pump Rate: _____ Lpm / gpm
Pump Type: 12 V Mini Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.85 gallons 5.55

Time	Purge Volume (gallons/litters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1505	0.0	7.92	11.7	194	1175	-	34.6	10.93
1510	1.3	7.43	11.1	152	1173	-	19.3	
1515	2.3	7.29	11.0	133	1155	-	9.78	
1520	3.1	7.38	10.3	188	1142	-	8.61	
1525	4.0	7.28	10.3	117	1131	-	8.03	
1530	4.8	7.26	10.0	104	1127	-	6.29	
1535	5.5	7.37	10.6	107	1108	-	4.38	
1540	6.2	7.28	9.6	109	1120	-	2.62	
Final Sample Data:		7.28	9.6	109	1120	-	2.62	-

Sample ID: MRC-MPI-6S
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1542
MS/MSD? ☐

Analyses: / Methods:
☒ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ 8260
☐ _____ ☐ _____

Comments: _____

Sampler(s): ~~S. Craig, J.Mays~~ B. Kroon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-7I
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.88 feet TOIC
Start Time: 1621
Total Well Depth: ~~15.09~~ feet TOIC 14.49
End Time: 1640
RMW 5/13/09
Depth to Pump: ~~13.09~~ feet TOIC ~13
~~Bailer~~ ☒ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: 12V84 mini typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: .167 gallons 2.02=3vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1621	0	7.83	14.7	13	426.3	—	821	—
1625	1	7.99	12.5	29	536.1	—	67	—
1630	2	8.01	12.0	40	554.5	—	32.1	—
1635	3	8.10	12.2	47	557.5	—	15.8	—
1640	4	8.10	11.9	51	563.5	—	10.2	—
Final Sample Data:		8.10	11.9	51	563.5	—	10.2	—

Sample ID: MRC-MPI-7I
~~Duplicate?~~ ☐
Dupe Samp ID: —
Sample Time: 1643
~~MS/MSD?~~ ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): S. Craig, ~~J.Mays~~

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-10B
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.80 feet TOIC
Start Time: 1310
Total Well Depth: ~~31.73~~ feet TOIC 31.13
End Time: 1335
Depth to Pump: ~~29.73~~ feet TOIC ~29 (Pulled 5/13/09)
Bailer ☒ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: 12 V Mini Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 3.34 gallons 10 = 3 vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1310	0	7.21	16.5	47	2843	—	44	—
1315	2	7.21	13.5	53	2866	—	30	—
1320	4	7.17	13.4	55	2970	—	28	—
1325	6	7.17	13.1	57	3003	—	20	—
1330	8	7.16	13.0	51	3023	—	16	—
1335	10	7.14	13.1	58	3072	—	6	—
Final Sample Data:		7.14	13.1	58	3072	—	6	—

Sample ID: MRC-MPI-10B
~~Duplicate?~~ ☐
Dupe Samp ID: —
Sample Time: 1337
~~MS/MSD?~~ ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): S. Craig, ~~J.Mays~~

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-12B
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 6.92 feet TOIC
Total Well Depth: ~~35.13~~ feet TOIC 34.53
Depth to Pump: ~~33.13~~ feet TOIC ~33
BLW 5/13/09
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1210
End Time: 1243
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Well Diameter: 2 inches
1x Well Volume: 4.5 gallons 13.5 = 3 vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1210	0	7.74	14.5	111	3687	—	71000	—
1215	2	7.43	12.4	62	3316	—	307	—
1220	4	7.36	12.3	52	3143	—	154	—
1225	6	7.32	12.2	46	3191	—	96	—
1230	8	7.29	12.3	39	3172	—	44	—
1235	10	7.29	12.2	33	3170	—	29	—
1240	12	7.28	12.1	29	3203	—	17	—
Final Sample Data:		7.28	12.1	29	3203	—	17	—

Sample ID: MRC-MPI-12B
Sample Time: 1243
~~Duplicate?~~ ☐
~~MS/MSD?~~ ☐
Dupe Samp ID: _____

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): S. Craig, ~~J.Mays~~

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MPI-15B
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 9.00 feet TOIC
Total Well Depth: ~~28.78~~ 28.18 feet TOIC
Depth to Pump: ~~26.79~~ ~26 feet TOIC
RMW 5/12/09
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1230
End Time: 1312
Bailer ☒ Pump
Pump Type: 12 V Mini Typhoon
Well Diameter: 2 inches
1x Well Volume: 3.22 gallons 9.67

Time	Purge Volume (gallons/litres)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1230	0.0	7.65	11.4	171	1401	-	558	~~BK~~ 9.00
1235	1.2	7.17	11.0	76	1396	-	182	
1240	2.4	7.08	11.3	527	1387	-	80.6	
1245	3.6	7.05	11.7	-31	1394	-	29.0	
1250	4.8	7.08	12.6	-59	1378	-	10.1	
1255	6.0	7.03	11.9	-71	1374	-	6.18	
1300	7.2	7.00	12.7	-75	1374	-	4.06	
1305	8.4	7.03	12.1	-79	1373	-	3.49	
1310	9.6	7.04	12.3	-81	1373	-	2.67	
Final Sample Data:		7.04	12.3	-81	1373	-	2.67	

Sample ID: MRC-MPI-15B
Sample Time: 1312
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID: _____

Analyses: Methods:
☒ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ 8260
☐ _____ ☐ _____

Comments: 6 Paces From Fence South Near Edge of Parking Lot.

Sampler(s): ~~S. Craig~~, J.Mays B. Kroon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MW-7
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 10.90 feet TOIC
Start Time: 1405
Total Well Depth: ~~14.35~~ feet TOIC 13.65
End Time: 1420
Depth to Pump: ~~12.75~~ feet TOIC ~12
~~Bailer~~ ☑ Pump
Pump Type: 12 Volt mini typhoon
Initial Pump Rate: _____ Lpm / gpm
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: .53 gallons 1.6 = 3 vol

Pump 5/13/09

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1405	0	7.26	14.7	59	1870	—	62	—
1410	1.5	7.34	11.6	65	1504	—	37	—
1415	3	7.37	10.9	79	1528	—	17	—
1420	4.5	7.39	10.8	77	1500	—	8	—
Final Sample Data:		7.39	10.2	77	1500	—	8	—

Sample ID: MRC-MW-07
~~Duplicate?~~ ☐
Dupe Samp ID: _____
Sample Time: 1423
~~MS/MSD?~~ ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ 8260
☐ _____	☐ _____

Comments: _____
Sampler(s): S. Craig, ~~J. Mays~~

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Mr C's Dry Cleaners
Well ID: MW-8
EEEPC Project No.: 002700.DC02.01.02
Date: 5/12/09

Initial Depth to Water: 11.00 feet TOIC
Start Time: 1625
Total Well Depth: ~~13.92~~ feet TOIC 13.32
End Time: 1706
Depth to Pump: ~~11.92~~ feet TOIC ~11 (new 5/12/09)
☒ Bailer ☐ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: _____
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: .5 gallons 1.40=3vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1625	0.0	7.27	13.1	167	1824	—	186	—
1628	0.3	7.16	11.3	162	1779	—	178	—
1632	1.0	7.08	11.3	165	1764	—	143.0	—
Began Pump → 1[illegible]	1.6	7.21	11.7	199	1693	—	176	—
1650	2.3	7.13	10.6	190	1689	—	81.3	—
1655	3.6	7.11	10.5	182	1681	—	48.5	—
1700	4.7	7.10	10.9	181	1661	—	18.3	—
1705	5.5	7.11	10.8	180	1667	—	17.6	—
Final Sample Data:		7.11	10.8	180	1667	—	17.6	—

Sample ID: MRC-MW-08
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1706
MS/MSD? ☐

Analyses: / Methods:
☒ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ 8260
☐ _____ ☐ _____

Comments: _____

Sampler(s): ~~S. Craig, J.Mays~~ B. Kroon

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Groundwater Grab Sample Data Collection Form

Site Name: Mr C's East Aurora	Project No.: 002700DC13.02.01.02
Sample Location Information	
Project Location: East Aurora, NY	
Project Task: Groundwater Sampling	
Sampler Names (Print): S. Craig, J. Mays	
Organic Vapor Meter Used: ☐ PID ☐ FID Model:	
Water Quality Meter U: Myron 6p multimeter, Hach 2100p turbidity meter Calibration Date/Time: 5/11/09	

Sample ID:	MRC-PW03	MRC-PW02	MRC-PW04	MRC-PW05	MRC-PW06
Sample Date:	5/11/09	5/11/09	5/11/09	5/11/09	5/12/09
Sample Time:	1705	1715	1740	1730	0848
Depth (ft bgs): WL	23.00	19.10	22.90	14.00	21.46
Purge Vol. (L):	—	—	—	—	—
pH:	6.51	7.24	7.91	7.35	8.60
Temp. (°C):	14.0	12.5	12.4	13.2	11.3
Conductivity (µS/cm):	2998	2284	3230	3110	3286
Turbidity (NTU):	17	89	~~13~~ 16	13	421
OVM (ppm):	—	—	—	—	—
Quality Control:	—	Dupe	MS/MSD	—	—
Analysis Method:	8260				

Laboratory: Mitkem Labs Date Shipped to Lab: 5/12/09

Associated Trip Blank Sample ID: TB-A

Comments:

Signature:

Key: bgs = below ground surface; FID = flame-ionization detector; ft = feet; OVM = organic vapor meter; PID = photo-ionization detector

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Groundwater Grab Sample Data Collection Form

Site Name:	Mr C's East Aurora	Project No.: 002700DC13.02.01.02	
Sample Location Information			
Project Location:	East Aurora, NY		
Project Task:	Groundwater Sampling		
Sampler Names (Print):	S. Craig, J. Mays		
Organic Vapor Meter Used:	☐ PID ☐ FID	Model:	
Water Quality Meter Used:	Myron 6p multimeter, Hach 2100p turbidity meter	Calibration Date/Time:	5/11/09

Sample ID:	MRC-RW07	MRC-RW08	MRC-RW01		
Sample Date:	5/11/09	5/11/09	5/12/09		
Sample Time:	1800	1810	0833		
Depth (ft bgs): WL	10.89	20.45			
Purge Vol. (L): TD	—	—	—		
pH:	8.06	8.14	8.13		
Temp. (°C):	14.5	11.4	11.4		
Conductivity (µS/cm):	1015	1440	2856		
Turbidity (NTU):	38	301	26		
OVM (ppm):	—	—	—		
Quality Control:	—	—	—		
Analysis Method:	8260	→			

Laboratory:	Mitkem Laboratory	Date Shipped to Lab:	5/12/09
Associated Trip Blank Sample ID:	TB-A		
Comments:			

Signature:

Key: bgs = below ground surface; FID = flame-ionization detector; ft = feet; OVM = organic vapor meter; PID = photo-ionization detector

B Data Usability Summary Reports

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs (June 1999). Specific criteria for QC limits were obtained from the project QAPP. Compliance with the project QA program is indicated on the in the checklist and tables. Any major or minor concerns affected data usability are summarized listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

Table 1 Sample Summary Tables from Electronic Data Deliverable

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	MS/ MSD	ID Corrections
SH0831	Aqueous	MRC-PW03	H0831-01A				None
SH0831	Aqueous	MRC-PW02	H0831-02A				None
SH0831	Aqueous	MRC-PW02/D	H0831-03A				None
SH0831	Aqueous	MRC-PW04	H0831-04A			*	None
SH0831	Aqueous	MRC-PW04	H0831-04AM		MS/MSD	*	None
SH0831	Aqueous	MRC-PW05	H0831-05A				None
SH0831	Aqueous	MRC-PW07	H0831-06A				None
SH0831	Aqueous	MRC-PW08	H0831-07A				None
SH0831	Aqueous	MRC-PW06	H0831-08A				None
SH0831	Aqueous	MRC-RW01	H0831-09A				None
SH0831	Aqueous	MRC-ESI-5	H0831-10A				None
SH0831	Aqueous	MRC-MPI-1S	H0831-11A				None
SH0831	Aqueous	MRC-MPI-1S/D	H0831-12A				None
SH0831	Aqueous	MRC-EE-1	H0831-13A				None
SH0831	Aqueous	MRC-MPI-3S	H0831-14A				None
SH0831	Aqueous	MRC-ESI-6	H0831-15A				None
SH0831	Aqueous	MRC-MPI-12B	H0831-16A				None
SH0831	Aqueous	MRC-MPI-15B	H0831-17A				None
SH0831	Aqueous	MRC-MPI-10B	H0831-18A				None

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	MS/ MSD	ID Corrections
SH0831	Aqueous	MRC-MW-07	H0831-19A				None
SH0831	Aqueous	MRC-MW-EE2	H0831-20A				None

Work Orders, Tests and Number of Samples included in this DUSR

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
SH0831	Aqueous	SW8260_W	VOC by GC-MS	11	DL
SH0831	Aqueous	SW8260_W	VOC by GC-MS	20	SAMP

General Sample Information	
Do Samples and Analyses on COC check against Lab Sample Tracking Form?	Yes
Did coolers arrive at lab between 2 and 6°C and in good condition as indicated on COC and Cooler Receipt Form?	Yes
Frequency of Field QC Samples Correct? Field Duplicate - 1/20 samples Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set of samples per day?	Yes – Trip Blank not included with this SDG.
All ASP Forms complete?	Yes
Case narrative present and complete?	Yes
Any holding time violations (See table below)?	No - All samples were prepared and analyzed within holding times.

Insert Holding time table below.

The following tables are presented at the end of this DUSR and provided summaries of results outside QC criteria.

- Method Blanks Results (Table 2)
- Surrogates Outside Limits (Table 3)
- MS/MSD Outside Limits (Table 4)
- LCS Outside Limits (Table 5)
- Re-analysis Results (Table 6)
- Field Duplicate Results (Table 7)

Go to Tables List

Volatile Organics and Semi-volatile Organics by GCMS	
Description	**Notes and Qualifiers**

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Volatile Organics and Semi-volatile Organics by GCMS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip and field blanks (see Table 2)?	No
For samples, if results are <5 times the blank or < 10 times blank for common laboratory contaminants then "U" flag data. Qualification also applies to TICs.	Samples are flagged U as noted on Table 2a for method blanks and Table 2b for field blanks.
Surrogate for method blanks and LCS within limits?	Yes
Surrogate for samples and MS/MSD within limits? (See Table 3). All samples should be re-analyzed for VOCs? Samples should re-analyzed if >1 BN and/or > AP for BNAs is out. Matrix effects should be established.	Yes
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes
MS/MSD within QC criteria (see Table 4)? If out and LCS is compliant, then J flag positive data in original sample due to matrix?	Yes
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 6)?	Yes
Is initial calibration for target compounds <15 %RSD or curve fit?	Yes
Is continuing calibration for target compounds < 20.5%D.	Yes
Were any samples re-analyzed or diluted (see Table 6)? For any sample re-analysis and dilutions is only one reportable result by flagged?	No
For TICs are there any system related compounds that should not be reported?	No
Do field duplicate results show good precision for all compounds except TICs (see Table 7)?	Yes

Summary of Potential Impacts on Data Usability
Major Concerns
None
Minor Concerns
Samples qualified based on Method Blanks and Calibration range exceedance.

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Samp Type	Analyte	Result	Qual	Analyte Type	Units	MDL	PQL
SW8260_W	MB-43531	MBLK	Tetrachloroethene	2	J	A	µg/L	0.46	5
SW8260_W	MB-43601	MBLK	Chloroform	1	J	A	µg/L	0.4	5
SW8260_W	MB-43629	MBLK	Tetrachloroethene	1.1	J	A	µg/L	0.46	5

Table 2A - List of Samples Qualified for Method Blank Contamination

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qual	PQL	Affected Samples	Sample Flag
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	54		5	MRC-MPI-1S	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1100	E	5	MRC-PW02/D	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1300	E	5	MRC-PW07	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1900	E	5	MRC-PW04	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	2300	E	5	MRC-PW05	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	300	E	5	MRC-PW03	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	520	E	5	MRC-PW06	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	920	E	5	MRC-PW02	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	4.1	J	5	MRC-ESI-5	U Flag
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	190	B	5	MRC-RW01	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	200	B	10	MRC-PW08	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1.2	BJ	5	MRC-MW-EE2	U Flag
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1000	DB	50	MRC-PW02/D	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1200	DB	50	MRC-PW02	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1400	DB	50	MRC-PW07	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	2400	DB	100	MRC-PW04	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	270	DB	10	MRC-PW03	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	320	DB	25	MRC-ESI-6	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	340	DB	25	MRC-PW06	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	420	DB	25	MRC-MPI-10B	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	870	DB	50	MRC-MW-07	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	4.2	DBJ	10	MRC-MPI-3S	U Flag

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Date Completed: June 22, 2009	Completed by: Bryan Kroon

Table 2B - List of Samples Qualified for Field Blank Contamination
None

Table 3 - List of Samples with Surrogates outside Control Limits
None

Table 4 - List MS/MSD Recoveries and RPDs outside Control Limits

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
SW8260_W	MRC-PW04	MSD	Methyl tert-butyl ether	188	40	None
SW8260_W	MRC-PW04	MSD	Tetrachloroethene	1934	40	None

Table 5 - List LCS Recoveries outside Control Limits
None

Table 6 –Samples that were Reanalyzed

Sample ID	Lab ID	Method	Sample Type	Action
MRC-PW03	H0831-01A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW03	H0831-01AD	SW8260_W	DL	Report for E flag data only
MRC-PW02	H0831-02A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW02	H0831-02AD	SW8260_W	DL	Report for E flag data only
MRC-PW02/D	H0831-03A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW02/D	H0831-03AD	SW8260_W	DL	Report for E flag data only
MRC-PW04	H0831-04A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW04	H0831-04AD	SW8260_W	DL	Report for E flag data only
MRC-PW05	H0831-05A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW05	H0831-05AD	SW8260_W	DL	Report for E flag data only
MRC-PW07	H0831-06A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW07	H0831-06AD	SW8260_W	DL	Report for E flag data only
MRC-PW06	H0831-08A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW06	H0831-08AD	SW8260_W	DL	Report for E flag data only
MRC-MPI-3S	H0831-14A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MPI-3S	H0831-14AD	SW8260_W	DL	Report for E flag data only
MRC-ESI-6	H0831-15A	SW8260_W	SAMP	Report, add J and UJ flags

Data Usability Summary Report	Project: Mr C's Cleaners
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Sample ID	Lab ID	Method	Sample Type	Action
MRC-ESI-6	H0831-15AD	SW8260_W	DL	Report for E flag data only
MRC-MPI-10B	H0831-18A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MPI-10B	H0831-18AD	SW8260_W	DL	Report for E flag data only
MRC-MW-07	H0831-19A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MW-07	H0831-19AD	SW8260_W	DL	Report for E flag data only

Table 7 – Summary of Field Duplicate Results

Method	Analyte	Unit	PQL	MRC-MPI-1S	MRC-MPI-1S/D	RPD	RPD Rating	Samp Qual
8260	Tetrachloroethene	ug/L	5	54	49	9.71%	Good	None
8260	Trichloroethene	ug/L	5	1.2	1.1	8.69%	Good	None

Key:
A = Analyte
NC = Not Calculated
ND = Not Detected
PQL = Practical Quantitation Limit
RPD = Relative Percent Difference
T = Tentatively Identified Compound

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs (June 1999). Specific criteria for QC limits were obtained from the project QAPP. Compliance with the project QA program is indicated on the in the checklist and tables. Any major or minor concerns affected data usability are summarized listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

Table 1 Sample Summary Tables from Electronic Data Deliverable

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	MS/ MSD	ID Corrections
SH0831	Aqueous	MRC-PW03	H0831-01A				None
SH0831	Aqueous	MRC-PW02	H0831-02A				None
SH0831	Aqueous	MRC-PW02/D	H0831-03A				None
SH0831	Aqueous	MRC-PW04	H0831-04A			*	None
SH0831	Aqueous	MRC-PW04	H0831-04AM		MS/MSD	*	None
SH0831	Aqueous	MRC-PW05	H0831-05A				None
SH0831	Aqueous	MRC-PW07	H0831-06A				None
SH0831	Aqueous	MRC-PW08	H0831-07A				None
SH0831	Aqueous	MRC-PW06	H0831-08A				None
SH0831	Aqueous	MRC-RW01	H0831-09A				None
SH0831	Aqueous	MRC-ESI-5	H0831-10A				None
SH0831	Aqueous	MRC-MPI-1S	H0831-11A				None
SH0831	Aqueous	MRC-MPI-1S/D	H0831-12A				None
SH0831	Aqueous	MRC-EE-1	H0831-13A				None
SH0831	Aqueous	MRC-MPI-3S	H0831-14A				None
SH0831	Aqueous	MRC-ESI-6	H0831-15A				None
SH0831	Aqueous	MRC-MPI-12B	H0831-16A				None
SH0831	Aqueous	MRC-MPI-15B	H0831-17A				None
SH0831	Aqueous	MRC-MPI-10B	H0831-18A				None
SH0831	Aqueous	MRC-MW-07	H0831-19A				None
SH0831	Aqueous	MRC-MW-EE2	H0831-20A				None

Work Orders, Tests and Number of Samples included in this DUSR

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
SH0831	Aqueous	SW8260_W	VOC by GC-MS	11	DL
SH0831	Aqueous	SW8260_W	VOC by GC-MS	20	SAMP

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

General Sample Information	
Do Samples and Analyses on COC check against Lab Sample Tracking Form?	Yes
Did coolers arrive at lab between 2 and 6^{o}C and in good condition as indicated on COC and Cooler Receipt Form?	Yes
Frequency of Field QC Samples Correct? Field Duplicate - 1/20 samples Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set of samples per day?	Yes – Trip Blank not included in this SDG.
All ASP Forms complete?	Yes
Case narrative present and complete?	Yes
Any holding time violations (See table below)?	No - All samples were prepared and analyzed within holding times.

Insert Holding time table below.

The following tables are presented at the end of this DUSR and provided summaries of results outside QC criteria.

- Method Blanks Results (Table 2)
- Surrogates Outside Limits (Table 3)
- MS/MSD Outside Limits (Table 4)
- LCS Outside Limits (Table 5)
- Re-analysis Results (Table 6)
- Field Duplicate Results (Table 7)

Go to Tables List

Volatile Organics and Semi-volatile Organics by GCMS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip and field blanks (see Table 2)?	No
For samples, if results are <5 times the blank or < 10 times blank for common laboratory contaminants then "U" flag data. Qualification also applies to TICs.	Samples are flagged U as noted on Table 2a for method blanks and Table 2b for field blanks.
Surrogate for method blanks and LCS within limits?	Yes
Surrogate for samples and MS/MSD within limits? (See Table 3). All samples should be re-analyzed for VOCs? Samples should re-analyzed if >1 BN and/or > AP for BNAs is out. Matrix effects should be established.	Yes
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes
MS/MSD within QC criteria (see Table 4)? If out and LCS is compliant, then J flag positive data in original sample due to matrix?	Yes
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 6)?	Yes

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Volatile Organics and Semi-volatile Organics by GCMS	
Description	**Notes and Qualifiers**
Is initial calibration for target compounds <15 %RSD or curve fit?	Yes
Is continuing calibration for target compounds < 20.5%D.	Yes
Were any samples re-analyzed or diluted (see Table 6)? For any sample re-analysis and dilutions is only one reportable result by flagged?	No
For TICs are there any system related compounds that should not be reported?	No
Do field duplicate results show good precision for all compounds except TICs (see Table 7)?	Yes

Summary of Potential Impacts on Data Usability
Major Concerns
None
Minor Concerns
Results qualified based on Method Blank Contamination and Calibration range exceedances.

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Samp Type	Analyte	Result	Qual	Analyte Type	Units	MDL	PQL
SW8260_W	MB-43531	MBLK	Tetrachloroethene	2	J	A	µg/L	0.46	5
SW8260_W	MB-43601	MBLK	Chloroform	1	J	A	µg/L	0.4	5
SW8260_W	MB-43629	MBLK	Tetrachloroethene	1.1	J	A	µg/L	0.46	5

Table 2A - List of Samples Qualified for Method Blank Contamination

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qual	PQL	Affected Samples	Sample Flag
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	54		5	MRC-MPI-1S	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1100	E	5	MRC-PW02/D	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1300	E	5	MRC-PW07	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	1900	E	5	MRC-PW04	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	2300	E	5	MRC-PW05	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	300	E	5	MRC-PW03	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	520	E	5	MRC-PW06	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	920	E	5	MRC-PW02	Not Qualified
SW8260_W	MB-43531	Aqueous	Tetrachloroethene	2	4.1	J	5	MRC-ESI-5	U Flag
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	190	B	5	MRC-RW01	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	200	B	10	MRC-PW08	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1.2	BJ	5	MRC-MW-EE2	U Flag
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1000	DB	50	MRC-PW02/D	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1200	DB	50	MRC-PW02	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	1400	DB	50	MRC-PW07	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	2400	DB	100	MRC-PW04	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	270	DB	10	MRC-PW03	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	320	DB	25	MRC-ESI-6	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	340	DB	25	MRC-PW06	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	420	DB	25	MRC-MPI-10B	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	870	DB	50	MRC-MW-07	Not Qualified
SW8260_W	MB-43629	Aqueous	Tetrachloroethene	1.1	4.2	DBJ	10	MRC-MPI-3S	U Flag

Table 2B - List of Samples Qualified for Field Blank Contamination
None

Table 3 - List of Samples with Surrogates outside Control Limits
None

Table 4 - List MS/MSD Recoveries and RPDs outside Control Limits

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
SW8260_W	MRC-PW04	MSD	Methyl tert-butyl ether	188	40	None
SW8260_W	MRC-PW04	MSD	Tetrachloroethene	1934	40	None

Table 5 - List LCS Recoveries outside Control Limits
None

Table 6 –Samples that were Reanalyzed

Sample ID	Lab ID	Method	Sample Type	Action
MRC-PW03	H0831-01A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW03	H0831-01AD	SW8260_W	DL	Report for E flag data only
MRC-PW02	H0831-02A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW02	H0831-02AD	SW8260_W	DL	Report for E flag data only
MRC-PW02/D	H0831-03A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW02/D	H0831-03AD	SW8260_W	DL	Report for E flag data only
MRC-PW04	H0831-04A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW04	H0831-04AD	SW8260_W	DL	Report for E flag data only
MRC-PW05	H0831-05A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW05	H0831-05AD	SW8260_W	DL	Report for E flag data only
MRC-PW07	H0831-06A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW07	H0831-06AD	SW8260_W	DL	Report for E flag data only
MRC-PW06	H0831-08A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-PW06	H0831-08AD	SW8260_W	DL	Report for E flag data only
MRC-MPI-3S	H0831-14A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MPI-3S	H0831-14AD	SW8260_W	DL	Report for E flag data only

Data Usability Summary Report	Project: Mr C's Cleaners
Date Completed: June 22, 2009	Completed by: Bryan Kroon

Sample ID	Lab ID	Method	Sample Type	Action
MRC-ESI-6	H0831-15A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-ESI-6	H0831-15AD	SW8260_W	DL	Report for E flag data only
MRC-MPI-10B	H0831-18A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MPI-10B	H0831-18AD	SW8260_W	DL	Report for E flag data only
MRC-MW-07	H0831-19A	SW8260_W	SAMP	Report, add J and UJ flags
MRC-MW-07	H0831-19AD	SW8260_W	DL	Report for E flag data only

Table 7 – Summary of Field Duplicate Results

Method	Analyte	Unit	PQL	MRC-MPI-1S	MRC-MPI-1S/D	RPD	RPD Rating	Samp Qual
8260	Tetrachloroethene	ug/L	5	54	49	9.71%	Good	None
8260	Trichloroethene	ug/L	5	1.2	1.1	8.69%	Good	None

Key:
A = Analyte
NC = Not Calculated
ND = Not Detected
PQL = Practical Quantitation Limit
RPD = Relative Percent Difference
T = Tentatively Identified Compound

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MPI-4S	5/02	9/03	6/04	8/07
Tetrachloroethene	2 ug/L	2 ug/L	1.63 ug/L	5.0 ug/L
cis-1,2-Dichloroethene	14 ug/L	16 ug/L	97.8 ug/L	140 ug/L
Methyl tert-Butyl Ether	8 ug/L	11 ug/L	4.26 ug/L	ND
Vinyl Chloride	4 ug/L	ND	5.53 ug/L	20 ug/L
Acetone	9 ug/L	ND	ND	ND
1,1-Dichloroethene	1 ug/L	ND	ND	ND
Benzene	5 ug/L	ND	1.22 ug/L	ND
2-Butanone	3 ug/L	ND	ND	ND
Chloroform	ND	ND	0.722 ug/L	ND
Isopropylbenzene	ND	ND	0.108 ug/L	ND
trans-1,2-Dichloroethene	ND	ND	1.05 ug/L	ND
Trichloroethene	ND	ND	4.27 ug/L	2.4 ug/L
Trihalomethanes, Total	NA	NA	0.722 ug/L	ND

MPI-4D	5/02	9/03	6/04	8/07
All Compounds	ND	ND	NS	NS

MPI-3S	5/02	9/03	6/04	8/07	5/09
Benzene	ND	1 ug/L	ND	ND	ND
Methyl tert-Butyl Ether	1700 ug/L	560 ug/L	390 ug/L	240 ug/L	190 ug/L (J)
Tetrachloroethene	ND	ND	0.495 ug/L	ND	ND
1,2-Dichloroethane	ND	1.4 ug/L	0.538 ug/L	ND	ND

EE-2	6/04	8/07	5/09
Chloroform	0.346 ug/L	ND	ND
Methyl tert-butyl ether	1660 ug/L	670 ug/L	130 ug/L
Methylene chloride	0.208 ug/L	ND	ND
Tetrachloroethene	0.387 ug/L	ND	ND
Trihalomethanes, Total	0.346 ug/L	ND	ND
Vinyl chloride	–	–	38 ug/L

PW-6	5/02	10/03	6/04	8/07	5/09
Methyl tert-Butyl Ether	8 ug/L	ND	45.5 ug/L	18 ug/L	37 ug/L
Trichloroethene	3 J ug/L	ND	41.3 ug/L	100 ug/L	120 ug/L
Tetrachloroethene	37 ug/L	ND	463 ug/L	1100 ug/L	340 ug/L(J)
Ethylbenzene	5 J ug/L	ND	ND	ND	ND
Xylene	2 J ug/L	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	11.6 ug/L	50 ug/L	300 ug/L(J)
trans-1,2-Dichloroethene	ND	ND	0.400 ug/L	ND	3.9 ug/L(J)
1,1-Dichloroethane	ND	ND	0.150 ug/L	ND	ND
1,1-Dichloroethene	ND	ND	0.861 ug/L	ND	ND

PW-7	5/02	10/03	6/04	8/07	5/09
Acetone	280 ug/L	ND	ND	ND	ND
Methyl tert-Butyl Ether	85 J ug/L	ND	35.0 ug/L	5.2 ug/L(J)	ND
2-Butanone	680 ug/L	ND	ND	ND	ND
Ethylbenzene	63 J ug/L	ND	ND	ND	ND
Xylene	290 ug/L	ND	ND	ND	ND
Styrene	160 ug/L	ND	NA	ND	ND
Trichloroethene	92 J ug/L	10 ug/L	41.5 ug/L	94 ug/L	29 ug/L
Tetrachloroethene	4200 ug/L	800 ug/L	2760 ug/L	2400 ug/L	1400 ug/L(J)
1,1-Dichloroethene	ND	ND	1.06 ug/L	ND	ND
cis-1,2-Dichloroethene	ND	ND	7.92 ug/L	25 ug/L	5.7 ug/L
Toluene	ND	ND	0.186 ug/L	ND	ND
trans-1,2-Dichloroethene	ND	ND	0.776 ug/L	ND	ND
Vinyl chloride	ND	ND	0.171 ug/L	ND	ND

MPI-11B	5/02	9/03	6/04
	NS	NS	NS

MPI-15B	5/02	6/04	8/07	5/09
2-Butanone	NS	1.61 ug/L	ND	ND
Methyl tert-butyl ether	NS	6.39 ug/L	6.3 ug/L(J)	7.4 ug/L

PW-8	5/02	9/03	6/04	8/07	5/09
1,1-Dichloroethene	ND	2 ug/L	0.302 ug/L	ND	ND
2-Butanone	ND	46 ug/L	ND	ND	ND
Trichloroethene	4 ug/L	66 ug/L	25.2 ug/L	15 ug/L	28 ug/L
trans-1,2-Dichloroethene	ND	2 ug/L	0.722 ug/L	ND	ND
Tetrachloroethene	43 ug/L	110 ug/L	243 ug/L	150 ug/L	200 ug/L(J)
cis-1,2-Dichloroethene	1 ug/L	5 ug/L	8.45 ug/L	13 ug/L	30 ug/L
Methyl tert-Butyl Ether	16 ug/L	79 ug/L	10.1 ug/L	3.5 ug/L(J)	4.2 ug/L(J)
Acetone	26 ug/L	ND	ND	ND	ND
Xylene	10 ug/L	ND	ND	ND	ND
Ethylbenzene	3 ug/L	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND
Carbon Disulfide	–	–	–	7.2 ug/L(J)	ND

MPI-6S	5/02	9/03	6/04	8/07	5/09
Acetone	ND	20 ug/L	ND	ND	ND
Trichloroethene	ND	15 ug/L	125 ug/L	58 ug/L	94 ug/L
Tetrachloroethene	ND	1200 ug/L	3480 ug/L	4900 ug/L	8100 ug/L(J)
cis-1,2-Dichloroethene	ND	2 ug/L	3.26 ug/L	3.8 ug/L(J)	14 ug/L
Methyl tert-Butyl Ether	1000 ug/L	23 ug/L	2.59 ug/L	ND	1.8 ug/L(J)
trans-1,2-Dichloroethene	ND	ND	0.48 ug/L	ND	ND
2-Butanone	NA	NA	1.28 ug/L	ND	ND
1,1-Dichloroethene	ND	ND	0.167 ug/L	ND	ND

OW-C	5/02	9/03	6/04	8/07
Trichloroethene	NS	NS	NS	NS
trans-1,2-Dichloroethene	NS	NS	NS	NS
Tetrachloroethene	NS	NS	NS	NS
cis-1,2-Dichloroethene	NS	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS	NS
Methyl tert-butyl ether	NS	NS	NS	NS

MPI-13B	5/02	9/03	6/04	8/07
Trichloroethene	ND	0.57 ug/L	ND	ND
Benzene	ND	1.4 ug/L	ND	ND
Tetrachloroethene	ND	3.2 ug/L	0.403 ug/L	5.0 ug/L(J)
2-Butanone	NA	NA	0.979 ug/L	ND
Acetone	NA	NA	4.01 ug/L	ND
Carbon disulfide	NA	NA	0.440 ug/L	ND

MPI-4I	5/02	9/03	6/04	8/07	5/09
Trichloroethene	120 ug/L	280 ug/L	137 ug/L	580 ug/L	180 ug/L
Tetrachloroethene	160 ug/L	690 ug/L	556 ug/L	1300 ug/L	640 ug/L(J)
cis-1,2-Dichloroethene	16 ug/L	48 ug/L	49.4 ug/L	160 ug/L	780 ug/L(J)
Methyl tert-Butyl Ether	140 ug/L	40 ug/L	26.3 ug/L	23 ug/L	13 ug/L
trans-1,2-Dichloroethene	ND	ND	1.53 ug/L	21 ug/L	4.4 ug/L(J)
Vinyl chloride	ND	ND	0.196 ug/L	ND	ND

MW-6	5/02	9/03	6/04
Trichloroethene	ND	2 ug/L	NS
Tetrachloroethene	68 ug/L	74 ug/L	NS
cis-1,2-Dichloroethane	ND	2 ug/L	NS

ESI-6	5/02	9/03	6/04	8/07	5/09
1,1-Dichloroethane	ND	0.67 ug/L	0.616 ug/L	ND	ND
Trichloroethene	44 ug/L	16 ug/L	19.2 ug/L	14 ug/L	17 ug/L
Tetrachloroethene	1180 ug/L	230 ug/L	514 ug/L	240 ug/L	320 ug/L(J)
cis-1,2-Dichloroethene	130 ug/L	26 ug/L	23.6 ug/L	20 ug/L	37 ug/L
Methyl tert-Butyl Ether	48 ug/L	53 ug/L	29.2 ug/L	7.5 ug/L(J)	7.4 ug/L
trans-1,2-Dichloroethene	ND	ND	0.290 ug/L	ND	ND
Vinyl chloride	ND	ND	0.605 ug/L	ND	ND

MW-4	5/02	9/03	6/04	9/05	8/07
Vinyl Chloride	ND	47 ug/L	41.0 ug/L	590 ug/L	ND
Trichloroethene	23 ug/L	54 ug/L	27.9 ug/L	7.0 ug/L	ND
Benzene	24 ug/L	46 ug/L	4.80 ug/L	21.0 ug/L	5.4 ug/L(J)
trans-1,2-Dichloroethene	1 ug/L	7 ug/L	2.87 ug/L	3.4 ug/L	ND
Tetrachloroethene	130 ug/L	95 ug/L	278 ug/L	5.3 ug/L	ND
cis-1,2-Dichloroethene	200 ug/L	250 ug/L	515 ug/L	570 ug/L	2.5 ug/L(J)
Acetone	3 ug/L	ND	ND	ND	ND
Ethylbenzene	2 ug/L	ND	4.42 ug/L	7.7 ug/L	ND
Xylene-Total	170 ug/L	ND	0.704 ug/L	ND	1.3 ug/L
1,3,5 - Trimethylbenzene	120 ug/L	ND	NA	ND	ND
tert - Butylbenzene	2 ug/L	ND	0.447 ug/L	ND	ND
1,2,4 - Trimethylbenzene	10 ug/L	ND	0.243 ug/L	ND	ND
Isopropylbenzene	ND	ND	1.76 ug/L	3.4 ug/L	4.2 ug/L(J)
n-Propylbenzene	ND	ND	2.94 ug/L	ND	ND
m,p-Xylene	NA	ND	0.282 ug/L	0.55 ug/L	ND
o-Xylene	NA	ND	0.422 ug/L	0.8 ug/L	ND
sec-Butylbenzene	ND	ND	1.15 ug/L	ND	ND
Toluene	3 ug/L	ND	0.373 ug/L	2.3 ug/L	ND
1,1-Dichloroethene	ND	ND	0.320 ug/L	1.2 ug/L	ND
Cyclohexane	ND	ND	ND	75.0 ug/L	110 ug/L
Methylcyclohexane	ND	ND	ND	22.0 ug/L	22.0 ug/L
Methyl tert-butyl ether	ND	ND	ND	ND	ND

MPI-12B	5/02	9/03	6/04	8/07	5/09
cis-1,2-Dichloroethene	NS	NS	3.46 ug/L	9.4 ug/L(J)	16 ug/L
Methyl tert-butyl ether	NS	NS	341 ug/L	170 ug/L	90 ug/L
Tetrachloroethene	NS	NS	0.422 ug/L	ND	2.8 ug/L(J)
Trichloroethene	NS	NS	0.294 ug/L	ND	ND

MPI-1S	5/02	9/03	6/04	8/07	5/09
Trichloroethene	ND	1.5 ug/L	9.87 ug/L	6.5 ug/L(J)	1.2 ug/L(J)
Tetrachloroethene	10 ug/L	41 ug/L	123 ug/L	97 ug/L	54 ug/L
cis-1,2-Dichloroethene	ND	0.86 ug/L	3.90 ug/L	ND	1.1 ug/L(J)
Vinyl chloride	ND	ND	0.346 ug/L	ND	ND
1,1-Dichloroethane	ND	ND	0.337 ug/L	ND	ND

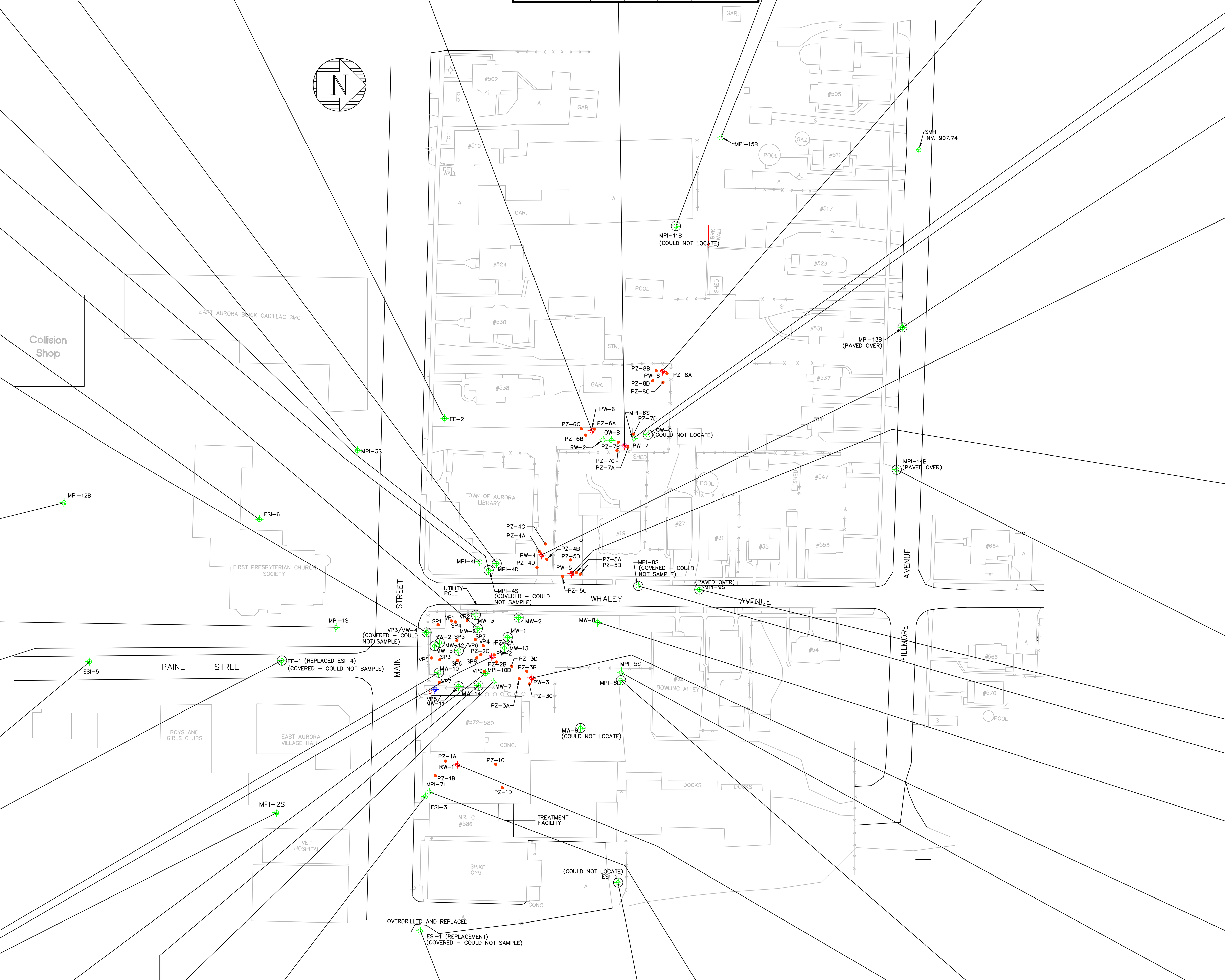
MW-5	5/02	9/03	6/04	8/07
Xylene	5700 ug/L	ND	NS	NS
Vinyl Chloride	ND	7 ug/L	NS	NS
Trichloroethene	21 ug/L	ND	NS	NS
Benzene	220 ug/L	15 ug/L	NS	NS
trans-1,2-Dichloroethene	ND	ND	NS	NS
Tetrachloroethene	83 ug/L	2 ug/L	NS	NS
cis-1,2-Dichloroethene	48 ug/L	16 ug/L	NS	NS
Methyl tert-Butyl Ether	ND	3 ug/L	NS	NS
Toluene	160 ug/L	3 ug/L	NS	NS
Ethylbenzene	25 ug/L	ND	NS	NS
1,3,5 - Trimethylbenzene	470 ug/L	ND	NS	NS
1,2,4 - Trimethylbenzene	920 ug/L	ND	NS	NS

ESI-5	5/02	9/03	6/04	8/07	5/09
Tetrachloroethene	ND	0.52 ug/L	0.196 ug/L	4.6 ug/L(J)	ND

ESI-4/EE-1	5/02	9/03	6/04	8/07	5/09
Chloroform	ND	0.54 ug/L	0.521 ug/L	ND	ND
1,1,1-Trichloroethane	0.7 ug/L	2.4 ug/L	14.7 ug/L	9.6 ug/L(J)	12 ug/L
Trichloroethene	0.5 ug/L	3.6 ug/L	ND	ND	ND
Tetrachloroethene	14 ug/L	63 ug/L	5.91 ug/L	3.1 ug/L(J)	4.5 ug/L(J)
cis-1,2-Dichloroethene	ND	1.2 ug/L	ND	ND	ND
Methyl tert-butyl ether	ND	ND	8.51 ug/L	4.2 ug/L(J)	1.6 ug/L(J)
Trihalomethanes, Total	NA	NA	0.521 ug/L	ND	ND
1,1-Dichloroethane	ND	ND	1.16 ug/L	ND	ND
1,1-Dichloroethene	ND	ND	0.284 ug/L	ND	ND
2-Butanone	NA	NA	0.965 ug/L	ND	ND
Benzene	ND	ND	0.325 ug/L	ND	ND
Acetone	NA	ND	1.85 ug/L	ND	ND

MW-10	5/02	9/03	6/04	8/07
Acetone	ND	14 ug/L	NS	NS
cis-1,2-Dichloroethene	ND	3 ug/L	NS	NS
Tetrachloroethene	12 ug/L	ND	NS	NS

PW-2	5/02	9/03	6/04	9/05	8/07	5/09
Trichloroethene	ND	11 ug/L	5.57 ug/L	4.4 ug/L	9.3 ug/L(J)	7.5 ug/L
Tetrachloroethene	430 ug/L	1400 ug/L	1090 ug/L	2000 ug/L	1300 ug/L	1200 ug/L(J)
cis-1,2-Dichloroethene	ND	5 ug/L	3.82 ug/L	2.0 ug/L	ND	2.8 ug/L(J)
Methyl tert-Butyl Ether	ND	3 ug/L	0.617 ug/L	ND	ND	ND
Acetone	14 ug/L	ND	ND	ND	ND	ND
Ethylbenzene	24 ug/L	ND	ND	ND	ND	ND
Xylene	65 ug/L	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	0.290 ug/L	ND	ND	4.1 ug/L(J)
1,1,1-Trichloroethane	ND	ND	0.344 ug/L	ND	ND	ND



MPI-10B	5/02	9/03	6/04	8/07	5/09
Trichloroethene	ND	1 ug/L	5.03 ug/L	ND	5.1 ug/L
Benzene	ND	3 ug/L	ND	ND	ND
Tetrachloroethene	82 ug/L	320 ug/L	1070 ug/L	790 ug/L	450 ug/L(J)
cis-1,2-Dichloroethene	ND	2 ug/L	5.09 ug/L	ND	3.3 ug/L(J)
Methyl tert-Butyl Ether	ND	2 ug/L	1.89 ug/L	ND	ND
Trihalomethanes, Total	NA	NA	0.149 ug/L	ND	ND
trans-1,2-Dichloroethene	ND	ND	0.588 ug/L	ND	ND
Chloroform	ND	ND	0.149 ug/L	ND	ND
1,1-Dichloroethane	ND	ND	0.24 ug/L	ND	ND
1,1,1-Trichloroethane	ND	ND	0.926 ug/L	ND	ND

MW-14	5/02	9/03	6/04
Tetrachloroethene	NS	NS	180 ug/L

MPI-2S	4/94	1/95	6/04
1,1,1 Trichloroethane	14 ug/L	12 u/L	NS
Benzene	ND	2 ug/L	NS

ESI-3	5/02	9/03	6/04	8/07
1,1,1Trichloroethane	ND	1 ug/L	0.882 ug/L	2.0 ug/L(J)
Trichloroethene	ND	2 ug/L	7.03 ug/L	ND
Tetrachloroethene	220 ug/L	440 ug/L	655 ug/L	250 ug/L
cis-1,2-Dichloroethene	ND	4 ug/L	12.4 ug/L	2.8 ug/L
Methyl tert-Butyl Ether	9 ug/L	1 ug/L	1.02 ug/L	ND
1,1-Dichloroethane	ND	ND	0.469 ug/L	ND
Chloroform	ND	ND	1.14 ug/L	2.4 ug/L
Trihalomethanes, Total	NA	NA	1.14 ug/L	ND

MW-7	5/02	9/03	6/04	9/05	8/07	5/09
Trichloroethene	ND	8 ug/L	4.34 ug/L	3.2 ug/L	ND	1.4 ug/L(J)
Tetrachloroethene	240 ug/L	3300 ug/L	1170 ug/L	2000 ug/L	830 ug/L	700 ug/L(J)
cis-1,2-Dichloroethene	ND	ND	3.73 ug/L	0.76 ug/L	ND	ND
1,1,1-Trichloroethane	ND	ND	0.379 ug/L	ND	ND	ND
Methyl tert-butyl ether	ND	ND	0.315 ug/L	ND	ND	ND
trans-1,2-Dichloroethene			ND	ND	ND	1.7 ug/L(J)

ESI-1/ESI-1 (REPLACEMENT)	5/92	1/93	4/94	6/04	8/07
1,2 Dichloroethene	2 ug/L	ND	ND	NA	ND
Trichloroethene	2 ug/L	ND	3 ug/L	1.28 ug/L	ND
Tetrachloroethene	2 ug/L	0.9 ug/L	ND	1.47 ug/L	9.3 ug/L(J)
Carbon disulfide	NA	NA	ND	0.557 ug/L	ND
Chloroform	NA	NA	ND	0.485 ug/L	ND
cis-1,2-Dichloroethene	NA	NA	NA	0.103 ug/L	ND

MPI-7I	5/02	9/03	6/04	8/07	5/09
Trichloroethene	NA	2 ug/L	1.54 ug/L	ND	6.5 ug/L
Tetrachloroethene	NA	4 ug/L	5.13 ug/L	2.9 ug/L(J)	490 ug/L(J)
cis-1,2-Dichloroethene	NA	8 ug/L	8.53 ug/L	12 ug/L	18 ug/L
2-Butanone	NA	ND	1.17 ug/L	ND	ND
Methyl tert-butyl ether	NA	ND	0.178 ug/L	ND	ND
Vinyl chloride	NA	ND	0.223 ug/L	ND	ND
Chloroform	–	–	–	–	11 ug/L(J)
1,1,1-Trichloroethane	–	–	–	–	1.1 ug/L(J)
Bromodichloromethane	–	–	–	–	1.9 ug/L(J)

ESI-2	5/92	4/94
Tetrachloroethene	1 ug/L	NS

MPI-5I	5/02	9/03	6/04	8/07
Methyl tert-Butyl Ether	NA	4 ug/L	NS	NS

RW-1	5/02	9/03	6/04	8/07	5/09
Chloroform	ND	ND	0.839 ug/L	ND	1 ug/L(J)
cis-1,2-Dichloroethene	ND	ND	2.31 ug/L	ND	2.4 ug/L(J)
1,1-Dichloroethane	ND	ND	0.275 ug/L	ND	ND
1,1,1-Trichloroethane	ND	ND	0.531 ug/L	ND	1.3 ug/L(J)
Trihalomethanes, Total	NA	NA	0.839 ug/L	ND	1 ug/L(J)
Trichloroethene	ND	1 ug/L	2.09 ug/L	ND	1.5 ug/L(J)
Tetrachloroethene	4 ug/L	74 ug/L	410 ug/L	140 ug/L	190 ug/L(J)
Methyl tert-Butyl Ether	ND	3 ug/L	1.03 ug/L	ND	ND

MPI-5S	5/02	9/03	6/04	8/07	5/09
Vinyl Chloride	NA	5 ug/L	1.98 ug/L	15 ug/L	2.7 ug/L(J)
Trichloroethene	NA	6 ug/L	3.66 ug/L	2.7 ug/L(J)	3.6 ug/L(J)
trans-1,2-Dichloroethene	NA	2 ug/L	3.87 ug/L	6.0 ug/L(J)	10 ug/L
Tetrachloroethene	NA	36 ug/L	38.3 ug/L	4.9 ug/L(J)	15 ug/L(J)
cis-1,2-Dichloroethene	NA	5 ug/L	3.81 ug/L	8.4 ug/L(J)	7.7 ug/L
Methyl tert-butyl ether	NA	ND	0.114 ug/L	ND	ND
2-Butanone	NA	ND	0.994 ug/L	ND	ND
Benzene	NA	ND	0.304 ug/L	ND	ND

PW-4	5/02	10/03	6/04	8/07	5/09
Trichloroethene	ND	35 ug/L	57.9 ug/L	74 ug/L(J)	100 ug/L
Tetrachloroethene	50 ug/L	200 ug/L	2850 ug/L	1600 ug/L	2400 ug/L(J)
cis-1,2-Dichloroethene	ND	490 ug/L	8.68 ug/L	19 ug/L	34 ug/L
Acetone	100 ug/L	ND	ND	ND	ND
2-Butanone	1400 ug/L	ND	ND	ND	ND
Ethylbenzene	210 ug/L	ND	ND	ND	ND
Xylene	1200 ug/L	ND	ND	ND	ND
Styrene	360 ug/L	ND	NA	ND	ND
Methyl tert-butyl ether	ND	ND	22.0 ug/L	23 ug/L	64 ug/L
Toluene	ND	ND	0.193 ug/L	ND	ND
Vinyl chloride	ND	ND	0.981 ug/L	3.3 ug/L(J)	ND
1,1,1-Trichloroethane	ND	ND	0.680 ug/L	ND	ND
1,1-Dichloroethane	ND	ND	0.485 ug/L	ND	ND
1,1-Dichloroethene	ND	ND	0.211 ug/L	ND	ND
Benzene	ND	ND	0.121 ug/L	ND	ND
trans-1,2-Dichloroethene	ND	ND	1.2 ug/L	ND	3.9 ug/L(J)

PW-5	5/02	10/03	6/04	8/07	5/09
Acetone	200 ug/L	ND	ND	ND	ND
2-Butanone	3300 ug/L	ND	ND	ND	ND
Tetrachloroethene	170 ug/L	2000 ug/L	3220 ug/L	2000 ug/L	4000 ug/L(J)
Ethylbenzene	310 ug/L	ND	0.209 ug/L	ND	ND
Styrene	510 ug/L	ND	NA	ND	ND
Trichloroethene	ND	99 ug/L	78.6 ug/L	95 ug/L	140 ug/L
cis-1,2-Dichloroethene	ND	8 ug/L	8.17 ug/L	21 ug/L	21 ug/L
Xylene	1100 ug/L	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	0.801 ug/L	ND	ND
1,1-Dichloroethane	ND	ND	0.346 ug/L	ND	ND
1,1-Dichloroethene	ND	ND	0.194 ug/L	ND	ND
Benzene	ND	ND	0.114 ug/L	ND	ND
Methyl tert-butyl ether	ND	ND	10.1 ug/L	3.7 ug/L(J)	2.6 ug/L(J)
trans-1,2-Dichloroethene	ND	ND	2.61 ug/L	6.5 ug/L(J)	12 ug/L
Vinyl chloride	ND	ND	0.415 ug/L	ND	ND

MPI-14B	5/02	9/03	6/04	8/07
Vinyl chloride	ND	ND	1.06 ug/L	ND
cis-1,2-Dichloroethene	ND	ND	2.93 ug/L	2.8 ug/L(J)
Methyl tert-butyl ether	ND	ND	2.99 ug/L	ND
Tetrachloroethene	1 ug/L	ND	0.175 ug/L	ND
Trichloroethene	ND	ND	0.191 ug/L	ND
trans-1,2-Dichloroethene	ND	ND	1.60 ug/L	ND
Acetone	ND	ND	4.06 ug/L	9.6 ug/L(J)
1,2-Dichloroethane	ND	ND	0.340 ug/L	ND

MPI-9S	5/02	9/03	6/04	8/07
	NS	NS	NS	NS

MPI-8S	5/02	9/03	6/04	8/07
	NS	NS	NS	NS

MW-8	5/02	9/03	6/04	9/05	8/07	5/09
Trichloroethene	720 ug/L	16 ug/L	10.4 ug/L	100.0 ug/L	590 ug/L	16 ug/L
trans-1,2-Dichloroethene	50 ug/L	1 ug/L	0.481 ug/L	3.8 ug/L	24 ug/L	12 ug/L
Tetrachloroethene	3900 ug/L	310 ug/L	299 ug/L	570.0 ug/L	960 ug/L	210 ug/L(J)
cis-1,2-Dichloroethene	40 ug/L	5 ug/L	2.36 ug/L	15.0 ug/L	390 ug/L	9.4 ug/L
2-Butanone	ND	ND	1.88 ug/L	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	0.157 ug/L	ND	ND	ND
Methyl tert-butyl ether	ND	ND	0.135 ug/L	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	35 ug/L	ND
Methylcyclohexane	–	–	–	–	2.5 ug/L	ND

PW-3	5/02	9/03	6/04	9/05	8/07	5/09
Trichloroethene	ND	6 ug/L	7.32 ug/L	8.9 ug/L	7.2 ug/L(J)	6 ug/L
Tetrachloroethene	820 ug/L	850 ug/L	595 ug/L	560 ug/L	290 ug/L	300 ug/L(J)
cis-1,2-Dichloroethene	ND	6 ug/L	6.43 ug/L	4.0 ug/L	2.8 ug/L(J)	4.3 ug/L(J)
Methyl tert-Butyl Ether	ND	4 ug/L	0.401 ug/L	ND	ND	ND
Acetone	51 ug/L	ND	ND	ND	ND	ND
2-Butanone	350 ug/L	ND	ND	ND	ND	ND
Ethylbenzene	20 ug/L	ND	ND	ND	ND	ND
Xylene	120 ug/L	ND	ND	ND	ND	ND
Styrene	11 ug/L	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	0.407 ug/L	ND	ND	ND
Benzene	ND	ND	0.148 ug/L	ND	ND	ND
Chloroform	ND	ND	0.133 ug/L	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	2.94 ug/L	3.4 ug/L	5.0 ug/L(J)	6.2 ug/L
Trihalomethanes, Total	NA	NA	0.133 ug/L	ND	ND	NS
Vinyl chloride	ND	ND	ND	1.7 ug/L	ND	ND

LEGEND

- SANITARY SEWER MANHOLE
- MONITORING WELL
- PUMPING WELL
- PIEZOMETER
- EXISTING STRUCTURES AND FEATURES
- FENCE
- PAINE STREET — MAJOR AREA STREETS
- WELLS CIRCLED = NOT FOUND (EITHER ABANDONED OR MISSING)

WELL ABBREVIATIONS

ESI	EMPIRE SOILS WELL (ENVIRONMENTAL SCIENCE)	OW	OBSERVATION WELL
MPI	OBSERVATION WELL (MALCOLM-PIRNIE)	PW	PUMPING WELL (TYREE)
MW	MONITORING WELL (MATRIX)	PZ	PIEZOMETER (TYREE)
NA	DATA NOT AVAILABLE	RW	RECOVERY WELL (BY OTHERS)
EEI	(ECOLOGY & ENVIRONMENT)		

ANALYTICAL ABBREVIATIONS

ug/L	MICROGRAMS PER LITER
ND	NOT DETECTED
NS	NOT SAMPLED
NA	NOT ANALYZED
–	NOT ANALYZED OR NOT DETECTED
(J)	ESTIMATED VALUE
(U)	ANALYZED FOR BUT NOT DETECTED AT THE DETECTION LIMIT INDICATED

NOTES:

1. ONLY DETECTED COMPOUNDS ARE PRESENTED.
2. HORIZONTAL CONTROL IS BASED UPON THE NEW YORK STATE PLANE COORDINATE SYSTEM, WEST ZONE, 1983 ADJUSTMENT (NAD 83) AND WAS OBTAINED FROM A MAP PREPARED BY WENDEL DUCHSCHERER ARCHITECTS AND ENGINEERS PC (NYS SITE No. 9-15-157) NYSDEC CONTRACT No. D004180.
3. ELEVATIONS ARE BASED UPON NORTH GEODETIC VERTICAL DATUM, 1929 (NGVD 1929).
4. BENCHMARK IS LOCATED NEAR THE NORTHEAST CORNER OF MAIN STREET AND PAINE STREET, BEING A BRASS DISC SET IN THE TOP OF CONCRETE BASE – ELEVATION 916.64'
5. ALL ANALYTICAL WORK PERFORMED IN JUNE 2004 WAS ANALYZED USING METHOD 524.1 FOR VOLATILE ORGANIC COMPOUNDS.
6. AUGUST 2007 ANALYTICAL WORK PERFORMED USING CLP METHOD OLM04.2.

SCALE IN FEET: 0 60 120 180

REFERENCE DRAWINGS

DWG NO.	DATE	DESCRIPTION
DEC 31 ISO.dwg	7/18/94	ISOPOTENTIAL MAP AND CROSS SECTIONS 4/13/94 GROUNDWATER LEVELS MALCOLM PIRNIE INC.
0266G003.dwg	10/17/00	REMEDIAL DESIGN PIPING AND WELL LAYOUT PLAN MALCOLM PIRNIE INC.

REVISIONS

NO.	DATE	DWN	APP'D	DESCRIPTION
B	6/30/09	KMK	MGS	UPDATED PER MAY 2009 SAMPLE EVENT
A	12/6/07	KMK	MGS	UPDATED PER AUGUST 2007 SAMPLE EVENT

FIGURE 4-1
SUMMARY OF GROUNDWATER ANALYTICAL DATA
MR.C'S DRY CLEANERS SITE LOCATION MAP
EAST AURORA, NEW YORK

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