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April 2, 2009

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Mr. Glenn May
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

**Re: Additional Investigation Groundwater Results
Eighteenmile Creek Corridor Site, Site No. 932121
Work Assignment No. D004435-19.1**

Dear Mr. May:

Ecology and Environment Engineering, P.C. (EEEEPC) is pleased to provide the New York State Department of Environmental Conservation (NYSDEC) with this the Sampling and Analysis Report for the groundwater samples collected during the additional investigation conducted to complement the Supplemental Remedial Investigation for the Eighteenmile Creek Corridor Site (Site No. 932121) located in the city of Lockport, Niagara County, New York. This report is an addendum to the Eighteenmile Creek Corridor Site Supplemental Remedial Investigation Report, prepared for NYSDEC by EEEEEPC (June 2008).

If you have any questions or comments on this submittal, please contact me at 716-684-8060.

Sincerely,

Vassilia Cervi
Project Manager

cc: G. Sutton, NYSDEC Region 9
G. Florentino, EEEEEPC
D. Albers, EEEEEPC
K. Powell, EEEEEPC

**Additional Groundwater Sampling
Addendum to the Supplemental Remedial Investigation Report
Eighteenmile Creek Corridor Site, Site No. 932121**

1 Introduction

This additional groundwater sampling effort was performed by Ecology and Environment Engineering, P.C. (EEEEPC) on behalf of the New York State Department of Environmental Conservation (NYSDEC) as part of the Supplemental Remedial Investigation/Feasibility Study (SRI/FS) for the Eighteenmile Creek Corridor Site (Site No. 932121) (herein referred to as the Site), located between the New York State (NYS) Barge Canal (Barge Canal) and Harwood Street in the city of Lockport, Niagara County, New York (see Figure 1-1). Although groundwater is not part of the FS operable units, the SRI investigation found volatile organic compound (VOC) presence in the groundwater at two of the properties. The second round of groundwater sampling was performed to confirm the original results and perhaps better understand the presence of VOCs in groundwater from the Upson Park and Former United Paperboard Properties.

The methodologies and specific goals of each of the aforementioned activities are described in Section 2 of this report. Analytical results and findings are discussed in Section 3. The laboratory analytical data reports and the data usability summary reports (DUSRs) are presented in Appendix A.

2 Additional Groundwater Sampling

To verify the VOC results in the July 2007 groundwater samples collected from wells installed in the western part of the Site in Upson Park and the Former United Paperboard Property, a second round of groundwater sampling was performed during the additional investigation. This second round of sampling was performed on February 11, 2009 and included the two wells that exhibited VOC concentrations exceeding NYSDEC Technical and Operational Guidance No. 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (18MC-MW05 and 18MC-MW14) (see Figure 2-1). Additionally, the two downgradient wells installed in the western part of the Site that did not contain VOCs in excess of the groundwater standards (18MC-MW15 and 18MC-MW16) were also be sampled in order to confirm that the VOC contamination does not extend to the southern portion of the site.

The additional groundwater sampling work was performed in accordance with the approved procedures in EEEEEPC's March 2007 *Supplemental Remedial Investigation/Feasibility Study Project Management Work Plan for the Eighteenmile Creek Corridor Site* and the November 2008 *Sampling and Analysis Plan for the Additional Investigation*. Well locations are shown on Figure 2-1. Table 2-1 provides a summary of the laboratory analyses proposed for these samples as well as associated field and laboratory quality assurance/quality control (QA/QC) samples.

All field activities were conducted by personnel wearing Level D personal protective equipment (PPE) and in accordance with the approved January 18, 2007, Site-specific Health and Safety Plan (HASP) and the October 2008 addendum.

Additional Investigation
Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

**Table 2-1 Summary of Additional Groundwater Sampling,
Eighteenmile Creek Corridor Site Supplemental Remedial Investigation**

| Analysis | Sample ID | Method | Locations | Field Samples | Field Duplicates ¹ | Trip Blanks ² | Total Number of Samples | MS/MS ³ |
|--|-----------|--------|-----------|---------------|-------------------------------|--------------------------|-------------------------|--------------------|
| Groundwater Monitoring Well Samples | | | | | | | | |
| VOCs | 18MC-MW05 | SW8260 | 4 | 4 | 1 | 1 | 6 | 1 |
| | 18MC-MW14 | | | | | | | |
| | 18MC-MW15 | | | | | | | |
| | 18MC-MW16 | | | | | | | |

Notes:

¹ Duplicate samples were submitted at a minimum frequency of 1 per 20 collected samples. /D suffix identified the duplicates.

² A trip blank accompanied the groundwater samples.

³ Additional volume was collected for the MS/MSD samples at a minimum frequency of 1 per 20 original samples.

Key:

18MC-MW = Eighteenmile Creek Corridor monitoring well.

ID = Sample Identification.

MS/MSD = Matrix spike/matrix spike duplicate.

VOC = Volatile organic compound.

Prior to sampling the monitoring wells, static water levels were measured in each well and the volume of water in each well was calculated. At least three volumes of water standing in the well casing were removed prior to sample collection. New dedicated bailers and new dedicated nylon cord were used for purging and sampling all the wells. Temperature, pH, conductivity, and turbidity measurements were recorded throughout the well purging process, and immediately prior to sampling. Purging was continued until either groundwater turbidity was below 50 NTUs or five well volumes were purged. Table 2-2 presents sample numbers, dates, and final groundwater quality measurements at the time of sampling. Appendix A contains the well purge records.

**Table 2-2 Monitoring Well Groundwater Quality Measurements,
Eighteenmile Creek Corridor Site Supplemental Remedial Investigation**

| Well and Sample ID | Sample Date | Purged Volume (gal) | pH (s.u.) | Temperature (°C) | Conductivity (µS/cm) | Turbidity (NTUs) |
|--------------------|-------------|---------------------|-----------|------------------|----------------------|------------------|
| 18MC-MW05 | 02/11/09 | 7 | 7.11 | 11.3 | 2,088 | 2.66 |
| 18MC-MW14 | 02/11/09 | 6 | 7.25 | 11.4 | 2,062 | 3.30 |
| 18MC-MW15 | 02/11/09 | 3 | 7.20 | 11.2 | 2,730 | 29.78 |
| 18MC-MW16 | 02/11/09 | 6 | 7.28 | 10.7 | 4,058 | 10.95 |

Key:

18MC-MW = Eighteenmile Creek Corridor monitoring well.

°C = Degrees Celsius.

Gal = Gallon.

µS/cm = Microsiemens per centimeter.

NTU = Nephelometric turbidity units.

s.u. = Standard units.

Laboratory analysis of environmental samples was performed by Test America Laboratories who also provided analytical services during the SRI. Samples were hand-delivered by the field crew to the laboratory upon sampling completion. The laboratory followed NYSDEC Analytical Services Protocol (ASP) 2005 for all analytical methods, QA/QC, holding times, and reporting re-



Figure 1-1
Site Location Map
Eighteenmile Creek Corridor Site
City of Lockport, New York

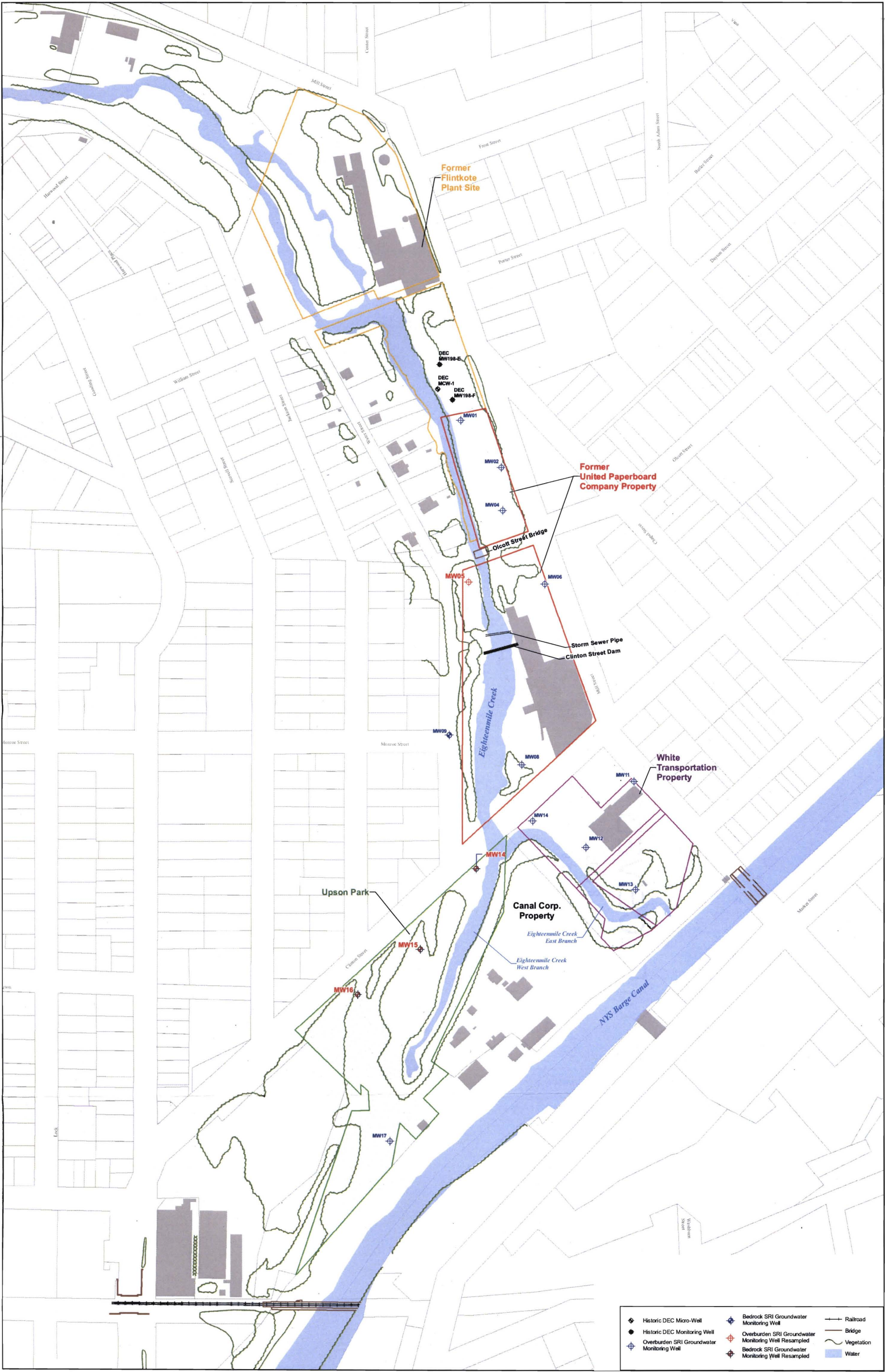
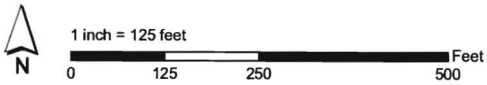


Fig 2-1: Monitoring Well Location Map
Eighteenmile Creek Corridor Site,
Supplemental Remedial Investigation



Additional Investigation

Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

quirements. Laboratory data were reported with Category B data package deliverables and standard laboratory electronic data deliverable (EDD) consistent with the EEEPC corporate format or United States Environmental Protection Agency (EPA) Region 2 Multimedia Electronic Data Deliverable (MEDD) format. More detailed information on the laboratory analysis is provided in Section 3.

Sampling was performed using disposable bailers and no decontamination was required.

3 Results

3.1 Groundwater Elevations

Prior to groundwater sampling, the groundwater level was measured at the four wells. Table 3-1 shows the both the previously measured groundwater elevations at these wells as well as the ones measured during the February 11, 2009 sampling event. Groundwater elevations ranged between less than 469 feet above mean sea level (AMSL) in the Former United Paperboard Property well (18MC-MW05), and nearly 506 feet AMSL in 18MC-MW16, in Upson Park, near Clinton Street.

Groundwater elevation changes between the November 2007 (before the canal was drained) and February 2009 (after the canal was drained) ranged between 2 and 5 feet. The largest swing in groundwater elevations was approximately 5 feet in well 18MC-MW14.

Groundwater contours were not drawn for the four wells sampled in February 2009. However, groundwater contour patterns noted previously (see SRI report) indicate flow generally toward the creek (multiple directions). Regional flow is to the north and into Lake Ontario. The horizontal hydraulic gradient at the Site ranges between 0.08 foot per foot and 0.32 foot per foot as measured previously for the SRI.

3.2 Quality Assurance/Quality Control Procedures

This section describes the QA/QC procedures utilized for each environmental medium collected and analyzed for this additional investigation. The Quality Assurance Project Plan (QAPP) presented in the work plan was followed for all activities. The procedures described in the QAPP are consistent with the current updates of the EPA analysis procedures as described in SW-846. The laboratory data were found to meet quality objectives.

3.2.1 Field QC Samples

Field QC samples provide a means to check ways that sample quality can be compromised in the field or through shipping, and also document overall sampling precision. The following sections describe field QC samples collected during the additional investigation.

Duplicate Samples

Consistency in both sample collection and sample analysis is checked through analysis of duplicate samples. Duplicate samples consist of aliquots of sample media placed in separate sample containers and labeled as separate samples. Duplicate samples were collected at a rate of

**Table 3-1 Summary of Groundwater Elevation Measurements
for Upson Park and Former United Paperboard Monitoring Wells,
Eighteenmile Creek Corridor Site, Supplemental Remedial Investigation and Additional Investigation**

| | | First Round | | Second Round | | Third Partial Round | | Fourth Round | |
|-----------|------------------------|---------------------------|---------------------------------------|---------------------------|---------------------------------------|---------------------------|---------------------------------------|---------------------------|---------------------------------------|
| | | 7/9/2007 | | 11/21/2007 | | 1/24/2008 | | 2/11/2009 | |
| Well ID | Inner Casing | Water Level (ft BTOIC) | Water Level Elevation (ft AMSL) | Water Level (ft BTOIC) | Water Level Elevation (ft AMSL) | Water Level (ft BTOIC) | Water Level Elevation (ft AMSL) | Water Level (ft BTOIC) | Water Level Elevation (ft AMSL) |
| | Elevation (ft AMSL) | | | | | | | | |
| 18MC-MW05 | 481.14 | 14.74 | 466.40 | 13.80 | 467.34 | NM | NM | 11.16 | 469.98 |
| 18MC-MW14 | 496.15 | 18.10 | 478.05 | 17.30 | 478.85 | 17.30 | 478.85 | 13.50 | 482.65 |
| 18MC-MW15 | 506.85 | 20.00 | 486.85 | 19.97 | 486.88 | 19.97 | 486.88 | 17.97 | 488.88 |
| 18MC-MW16 | 520.75 | 18.03 | 502.72 | 18.80 | 501.95 | 18.80 | 501.95 | 14.80 | 505.95 |

KEY

AMSL = Above Mean Sea Level.
BTOIC = Below top of inner Casing
ft = Feet
NM = Not measured

Additional Investigation

Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

approximately one per 20 field samples. One field duplicate was collected in association with the four groundwater samples for a 25% frequency. Sample 18MC-MW15/D was the duplicate for original sample 18MC-MW15. Duplicate sample analytical data are presented in the DUSR in Appendix B. Duplicate precision is evaluated based on the relative percent difference (RPD) in the duplicate pair. Water samples with RPD values less than 40% are considered to have good precision.

Field duplicate results indicated good precision for aqueous samples.

Field Blank Samples

A trip blank accompanied the groundwater samples. No VOCs were detected in the trip blank.

3.2.2 Laboratory QC Samples

Laboratory QC samples provide mechanisms to evaluate data quality based on sample integrity, holding times, method and calibration blank results, spike recoveries, surrogate recoveries, and duplicate precision. A complete listing of samples analyzed is provided in the associated DUSRs (see Appendix B). The DUSR includes attached outlier reports from data validation. The outlier report lists specific analytes outside control limits and associated samples. QC procedures used during the SRI sample analyses and any potential concerns with sample analysis procedures are detailed below.

Holding Times

Holding times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. Exceeding the holding time for a sample generally results in a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation.

All samples were analyzed within method-specific holding times.

Method and Calibration Blanks

Quality checks on the laboratory equipment, instrumentation, and methods reagents are conducted by analysis of method blanks. Method blanks consist of organic-free deionized water subjected to every step of the analytical process to determine possible points of laboratory contaminant introduction. Instrument calibration blanks are pure reagent matrix analyzed compared to set instrument response baselines.

A method blank was performed at the required frequency. No target compounds were detected in the blank.

Surrogate Spikes

Laboratory performance for individual samples analyzed for organic compounds is established by the use of surrogate spikes. Samples are spiked with surrogate compounds prior to preparation

Additional Investigation

Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

and analysis. Unusually low or high surrogate recoveries may indicate some deficiency in the analytical system or that some matrix effect exists.

Surrogates were added to all field and quality control samples with acceptable recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Spike samples simulate the background effect and interferences found in the actual samples, and the calculated percent recovery of the spike is used as a measure of the accuracy of the total analytical method. Spike samples were prepared by adding to an environmental sample (before extraction or digestion) a known amount of pure analyte to be assayed. The percent recovery of the spike analyte measures the accuracy of the method. Spikes were added at a concentration approximately midpoint on the calibration curve. Spikes (e.g., laboratory control samples) added to a matrix blank were analyzed with each sample batch to assess analytical performance not affected by sample matrix. If matrix spike (MS) samples indicated a potential matrix effect, the matrix spike blanks were evaluated to verify the problems were not due to an analytical concern. If the concentration of the compound in the sample is greater than four times the spike amount, the results are not qualified. Recoveries outside QC limits (if any) are presented on DUSR Table 4 (see Appendix B). In addition to analytical error introduced by machinery and sample handling, error can also occasionally result from analytical process interference by a sample matrix. This can result in the reporting of analytes at concentrations higher or lower than the true concentrations. Matrix spike duplicates are aliquots of the same sample that are split prior to analysis and are treated exactly the same throughout the analytical method. The RPD between the values of the MS and matrix spike duplicate (MSD) or between the original and the matrix duplicate was taken as a measure of the precision of the analytical method. RPDs outside QC limits (if any) are presented in Table 5 in the DUSR (see Appendix B).

MS/MSD analysis was performed at the required frequency and all recoveries were all within acceptable limits.

Laboratory Control Samples (LCS)

Laboratory control sample (LCS) analysis is performed to monitor efficiency of the sample preparation procedure and analytical instrument operation.

All LCS analyses were performed at the proper frequency with all recoveries within control limits.

Overall data quality is acceptable. No QC outliers impacting overall completeness, representativeness, and usability of the data set were encountered. Reported values for several volatile compounds are qualified as estimated since the determined concentrations are below reporting limits.

Additional Investigation
Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

3.2.3 Data Review

The samples were grouped into sample delivery group (SDG) RSB0346. A DUSR was generated for this SDG and is included in Appendix B. The data review (both hard copy and electronic) followed the NYSDEC Guidance for the Development of DUSRs, June 1999.

Table 3-2 provides a summary of analytical methods and samples collected. The analytical data report generated by the laboratory was checked to verify that data reported are consistent with the work plan and QAPP. The data review included an evaluation of the field and laboratory QC samples noted in Section 3.2.2 using the following procedure:

- **Completeness.** EEEPC performed a completeness check on the EDD and compared the data to the hard copy deliverable to verify the data were reported consistently.
- **Compliance.** EEEPC processed the EDD using internal software to verify that the data reported are compliant with QAPP requirements. EEEPC performed electronic data validation of the EDD and generated reports of qualified data. EEEPC reviewed the electronic report, checked the hard copy report and case narrative, assigned qualifiers to any outliers, reviewed calibration information, and developed a DUSR for the SDG.
- **Reporting.** EEEPC assigned data qualifiers and flagged all reportable data. EEEPC generated the summary table of final qualified data included in Section 3.3.
- **Data Management.** EEEPC developed a project-specific database with all validated data stored in Microsoft Access format. A copy of the complete electronic data is provided in Appendix B.

Table 3-2 Additional Groundwater Sampling Analytical Methods and Number of Samples, Eighteenmile Creek Corridor Site Supplemental Remedial Investigation

| Matrix | Lab Method ID | Lab Method Description | Number of Samples |
|--------|---------------|------------------------|-------------------|
| GW | SM8260B | VOCs | 4 |

Key:

GW = Groundwater sample.

VOC = Volatile organic compound.

Any deviations from acceptable QC specifications are discussed in the DUSR (see Appendix B). The EEEPC data validator added appropriate qualifiers to the data to indicate potential concerns with data usability. These qualifiers were transferred to the data presented on the summary tables in Section 3.3. The following qualifiers were added:

- J – The qualifier indicates an estimated value because the value reported is less than the reporting limit but greater than the method detection limit.

Additional Investigation

Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

U – The result is considered non-detect. The laboratory assigned this flag to analytes not present at detectable concentrations (above the instrument detection limit or method detection limit).

Overall, the data quality was acceptable and the laboratory analysis and reporting procedures were representative of appropriate methodology for the samples collected. Table 3-3 summarizes the qualified data records for the sample reports. No sample results were rejected for an overall completeness of 100%. Laboratory QC concerns did not have a significant impact on the overall completeness and representativeness of the dataset. A copy of the laboratory report is provided electronically as part of Appendix B.

**Table 3-3 Additional Groundwater Sampling Sample Completeness,
Eighteenmile Creek Corridor Site Supplemental Remedial Investigation**

| Matrix | Lab Method ID | Unqualified | J | U | UJ | Total | % Complete |
|--------|---------------|-------------|---|-----|----|-------|------------|
| GW | SM8260 | 3 | 5 | 200 | -- | 208 | 100 |

Key:

- J = Estimated value.
- GW = Groundwater sample.
- U = Parameter not detected (practical quantitation limit listed).
- UJ = Parameter not detected (estimated practical quantitation limit listed).
- VOC = Volatile organic compound.

3.3 Analytical Results

The Additional Investigation results confirm the presence of VOCs in exceedance of the NYS-groundwater standards in one Former United Paperboard well two Upson Park wells. The analytical results of the additional groundwater sampling are presented in detail below.

Screening

The additional Investigation analytical results (see Table 3-4) were screened against existing NYS regulatory criteria to identify samples containing analyte levels that may represent a possible threat to human health and/or the environment as described in the June 2008 SRI report. Groundwater analytical data were compared to standards and guidance values contained in NYSDEC, *Technical and Operational Guidance Series (TOGS 1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 1998, with updates).

Upson Park

Three groundwater samples were collected from three bedrock wells in Upson Park during the Additional Investigation. All samples were submitted to the laboratory for Target Compound List (TCL) VOC. These well were also sampled in July 2007 and the samples were submitted to Mitkem for analysis. A summary of the February 2009 analytical data is provided in Table 3-4. The July 2007 VOC results are also presented on Table 3-4.

Table 3-4 Summary of Positive Analytical Results for Original and Additional Investigation Groundwater Samples from the Upson Park and Former United Paperboard Properties, Eighteenmile Creek Corridor Site, Supplemental Remedial Investigation and Additional Investigation

| Analyte | Screening Criteria ¹ | Sample ID: Date: | Former United Paperboard Property | | Upson Park Property | | | | | |
|-------------------------------|------------------------------------|---------------------|--------------------------------------|----------|---------------------|----------|-----------|------------|-----------|----------|
| | | | 18MC-MW05 | | 18MC-MW14 | | 18MC-MW15 | | 18MC-MW16 | |
| | | | 07/10/07 | 02/11/09 | 07/11/07 | 02/11/09 | 07/11/07 | 02/11/09 * | 07/11/07 | 02/11/09 |
| VOCs by Method SW8260B (µg/L) | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5 p | | 0.5 U | 1.0 U | 0.5 U | 1.0 U | 0.26 J | 0.29 J | 0.5 U | 1.0 U |
| 1,1-Dichloroethane | 5 p | | 0.5 U | 1.0 U | 0.4 J | 1.0 U | 0.5 U | 1.0 U | 0.5 U | 1.0 U |
| Chloroform | 7 | | 0.5 U | 1.0 U | 0.49 J | 1.0 U | 0.5 U | 1.0 U | 0.5 U | 1.0 U |
| cis-1,2-Dichloroethene | 5 p | | 7.1 | 9.4 | 33 | 29 | 0.83 J | 0.94 J | 0.5 U | 1.0 U |
| Tetrachloroethene | 5 p | | 0.5 U | 1.0 U | 1.4 | 1.0 U | 0.5 UJ | 1.0 U | 0.5 UJ | 1.0 U |
| trans-1,2-Dichloroethene | 5 p | | 0.5 U | 1.0 U | 0.31 | 0.26 J | 0.5 U | 1.0 U | 0.5 U | 1.0 U |
| Trichloroethene | 5 p | | 0.5 U | 1.0 U | 20 | 19 | 1.2 | 0.81 J | 0.5 U | 1.0 U |
| Vinyl chloride | 2 | | 0.52 | 0.51 J | 0.4 J | 1.0 U | 0.5 U | 1.0 U | 0.5 U | 1.0 U |

Notes for Groundwater Standards and Guidance Values:

¹ New York State Department of Environmental Conservation, Technical and Operational Guidance #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (and subsequent addenda)

Other Notes

* A duplicate sample was analyzed at this location on 02/11/09. The highest of the two results are listed here for each parameter.

Key:

- J = Estimated value.
- µg/L = Microgram per liter.
- NA = Not available.
- p = Principal Organic Contaminant Standard applies.
- U = Parameter not detected (practical quantitation limit listed).
- UJ = Parameter not detected (practical quantitation limit listed)/Estimated.
- VOC = Volatile organic compound.

| | |
|--------------|--|
| 0.4 J | Bolded cells represent positive detections. |
| 9.4 | Shaded and bolded cells represent analytical results exceeding the screening value |

Additional Investigation

**Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121**

Groundwater samples from the southern Upson Park bedrock well (18MC-MW16) did not contain any VOCs during either sampling round. The groundwater sample collected from the 18MC-MW14 bedrock well installed at the northern portion of the Site, near the property line at the shoulder of Clinton Street contained trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) at concentrations above the NYS groundwater quality standards during both sampling rounds. Five other VOCs (chloroform and four chlorinated hydrocarbons) were detected in the July 2007 sample collected from the 18MC-MW14 at concentrations below the NYS standard. Only one of these chlorinated hydrocarbons (trans-1,2-DCE) was found in the February 2009 sample, also below the NYS standard. Three chlorinated hydrocarbons were found in the two samples from 18MC-MW15 well located between 18MC-MW14 and 18MC-MW16 at concentrations below the NYS groundwater quality standards.

Since the Upson Park wells were installed in the bedrock, VOC contaminant transport is likely along fractures in the bedrock.

The Former United Paperboard Company Property

One groundwater sample was collected during the Additional Investigation from overburden well 18MC-MW05 installed at the western portion of the Former United Paperboard property. This sample was submitted to Test America for TCL VOC. The well was also sampled in July 2007 and the sample was submitted to Mitkem for analysis. Table 3-4 presents a summary of the VOC results from both sampling rounds.

Two VOCs (cis-1,2-DCE and vinyl chloride) were detected in the well. Only cis-1,2-DCE was detected at a concentration above the NYS groundwater standard (5 micrograms per liter [$\mu\text{g/L}$]) at $9.4 \mu\text{g/L}$. No other VOCs have been found in the Former United Paperboard SRI wells at concentrations above the NYS standards.

4 References

Ecology and Environment Engineering, P.C. (EEEPC), 2008, *Draft Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor Site (Site No. 932121) City of Lockport, New York*, Prepared for the New York State Department of Environmental Conservation by EEEPC, Lancaster, New York.

_____, 2008, *Sampling and Analysis Plan for the Additional Field Investigation for the Supplemental Remedial Investigation/Feasibility Study at the Eighteenmile Creek Corridor Site (Site No. 932121), City of Lockport, New York*, Prepared for the New York State Department of Environmental Conservation by EEEPC, Lancaster, New York.

_____, 2007, *Project Management Work Plan for the Supplemental Remedial Investigation and Feasibility Study at the Eighteenmile Creek Corridor Site (Site No. 932121), City of Lockport, New York*, Prepared for the New York State Department of Environmental Conservation by EEEPC, Lancaster, New York.

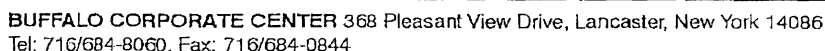


Additional Investigation
Supplemental Remedial Investigation/Feasibility Study Report Addendum
Eighteenmile Creek Corridor Site, Site No. 932121

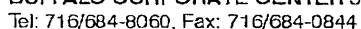
New York State Department of Environmental Conservation (NYSDEC), 1998, Division of Water Technical and Operational Guidance Series (1.1.1): *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, Division of Water, Albany, New York.

APPENDIX A

Well Purge and Sample Record



Well Purge Form - 18MC.xls



WELL PURGE & SAMPLE RECORD

Site Name/Location: **Eighteenmile Creek Corridor**

Well: 18MC-MW 15

Project: **Additional Investigation for SRI/FS**

EEPC Project No.: 002699.ID19.95 (labor) - 002699.ID19.05 (lab analyses)

Initial Depth to Water: 17.97 feet TOIC

2 inches

Total Well Depth: 23.96 feet TOIC

1 gallons

Well Purging ☐ Pump

☒ Bailer
$$3 \text{ gal} = 3x \text{ vol}$$

| Time | Purge Volume (gallons/liters) | pH (S.U.) | Temp. (°C/°F) | Conductivity (µS/cm mS/cm) | Turbidity (NTU) | Water Level (feet) |
|---------------------------|----------------------------------|--------------|------------------|-------------------------------|--------------------|-----------------------|
| 0905 | 0 | 7.32 | 10.7 | 2761 | 112 | |
| 0910 | ~ 1.0 | 7.22 | 11.0 | 2731 | 1906 | |
| 0915 | ~ 2.0 | 7.20 | 11.1 | 2726 | 2498 | |
| 0920 | ~ 3.0 | 7.20 | 11.2 | 2730 | 2978 | |
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| | | | | | | |
| Final Sample Data: | | | | | | |

Well Sampling ☐ **Pump**

☒ Dedicated Bailer

Sample ID: 18MC-MW-15

Duplicate? ☒

Dupe 18MC-MW15/D

Sample Time: 0927

MS/MSD? ☐

Analyses:

Methods:

Comments:

☒☐ VOCs (8260)

11

☐ SVOCs

1

☐ PCBs/Pesticides

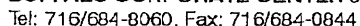
7

☐ Total Metals

7

☐ Dissolved Metals

Sampler(s): SC/MF



APPENDIX B
Data Usability Summary Report

And

Laboratory Analytical Data Report and
Electronic Data Deliverable (CD)

| | |
|--------------------------------------|---|
| Data Usability Summary Report | Project: Eighteenmile Creek Corridor SRI |
| Date Completed: March 6, 2009 | Completed by: B. Krajewski |

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:

| ProjectID | Lab Work Order |
|------------------|-----------------------|
| EEPC | RSB0346 |

Table 1 Sample Summary Tables from Electronic Data Deliverable

| Work Order | Matrix | Sample ID | Lab ID | Sample Date | Lab QC | MS/MSD | ID Corrections |
|-------------------|---------------|------------------|---------------|--------------------|---------------|---------------|-----------------------|
| RSB0346 | Water | 18MC-MW16 | RSB0346-01 | 2009-02-11 | | | None |
| RSB0346 | Water | 18MC-MW15 | RSB0346-02 | 2009-02-11 | | | None |
| RSB0346 | Water | 18MC-MW15/D | RSB0346-03 | 2009-02-11 | | | None |
| RSB0346 | Water | 18MC-MW05 | RSB0346-04 | 2009-02-11 | | ** | None |
| RSB0346 | Water | 18MC-MW14 | RSB0346-05 | 2009-02-11 | | | None |
| RSB0346 | Water | TRIP BLANK | RSB0346-06 | 2009-02-11 | | | None |

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

| Work Orders | Matrix | Test Method | Method Name | Number of Samples | Sample Type |
|--------------------|---------------|--------------------|---|--------------------------|--------------------|
| RSB0346 | Water | 8260B | 8260_ASP05 - Volatile Organic Compounds | 6 | SAMP |

General Sample Information

| | |
|---|---|
| Do Samples and Analyses on COC check against Lab Sample Tracking Form? | No – Trip blank not listed on COC. Analyzed for VOCs. |
| 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 – Field duplicate (18MC-MW15/D) and trip blank collected. |
| All ASP Forms complete? | No – Information available on laboratory forms |
| Case narrative present and complete? | Yes |
| Any holding time violations? | No – Samples preserved and analyzed within method hold times. |

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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)

| 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. | Not Applicable |
| 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. | No - %D criteria exceeded for carbon disulfide, chloromethane, and dichlorodifluoromethane. Compounds not detected in samples. No qualifiers applied. |
| 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? | Not Applicable |
| 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 |

| | |
|--------------------------------------|---|
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None

Table 2 - List of Positive Results for Blank Samples

None

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

None

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

None

Table 5 - List LCS Recoveries outside Control Limits

None

Table 6 –Samples that were Reanalyzed

None

Table 7 – Summary of Field Duplicate Results

| Method | Analyte | Unit | PQL | 18MC-MW15 | 18MC-MW15/D | RPD | RPD Rating | Samp Qual |
|---------------|------------------------|-------------|------------|------------------|--------------------|------------|-------------------|------------------|
| 8260B | 1,1,1-Trichloroethane | µg/L | 1.0 | 0.29 | 0.27 | 7.1% | Good | None |
| 8260B | cis-1,2-Dichloroethene | µg/L | 1.0 | 0.94 | 0.91 | 3.2% | Good | None |
| 8260B | Trichloroethene | µg/L | 1.0 | 0.79 | 0.81 | 2.5% | Good | None |

Key:

PQL = Practical Quantitation Limit

RPD = Relative Percent Difference