2015 Periodic Review Report

Groundwater Monitoring and Sampling Annual Report

815 River Road Site

Site Number B00178

City of North Tonawanda

February 2016

2015 PERIODIC REVIEW REPORT
GROUNDWATER MONITORING AND SAMPLING ANNUAL REPORT

815 RIVER ROAD SITE

NORTH TONAWANDA, NEW YORK

Prepared for

CITY OF NORTH TONAWANDA

Prepared by

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285 DELAWARE AVENUE
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February 2016

PROJECT NO. 11110868

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

SECTION 1 - SITE BACKGROUND

1.1 Site Location and History

This one-acre parcel of land is located directly across from the City of North Tonawanda (City) Wastewater Treatment Plant (WWTP). The City acquired the 815 River Road parcel in 2000 through tax foreclosure. Prior to the City's acquisition of the property, a company that maintained school buses occupied this property. As part of this business, this company maintained fueling systems that included underground storage tanks (USTs) for gasoline and motor oil. City records indicated that the USTs were in-place for over 40 years. A site location map is presented on Figure 1.

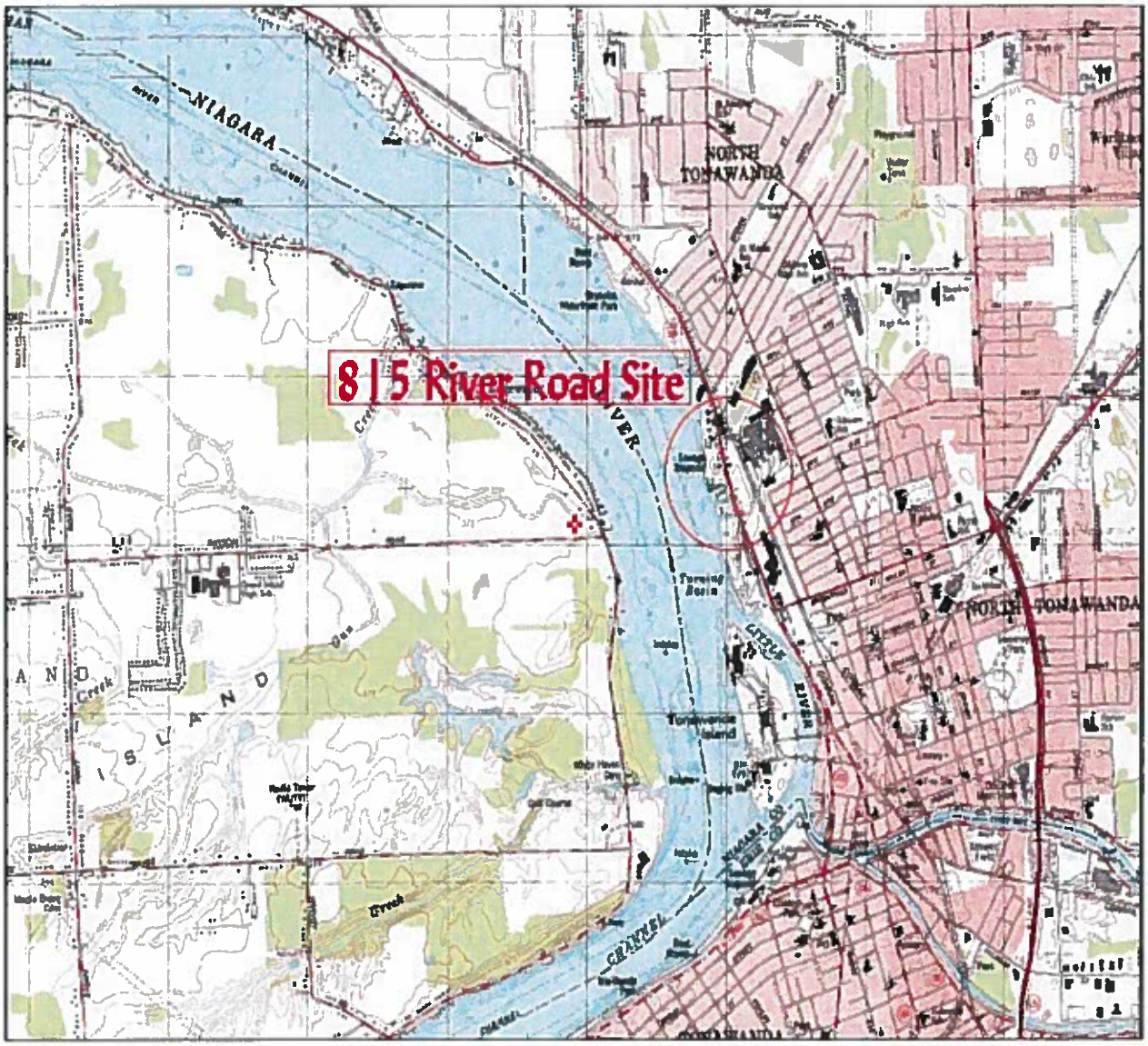
A previous site investigation completed in January 2001 by Green Environmental Specialists, Inc. (Green) identified seven (7) buried USTs. Analytical testing detected the presence of benzene in two (2) USTs. Site reporting also indicated that the soil and groundwater surrounding the USTs may have been impacted through UST leakage. Shortly after the completion of Green's site investigation, remedial construction was initiated by a private entity interested in remediating and developing the property for commercial/industrial use. Remedial activities resulted in the removal of four (4) USTs.

In September 2002, an additional site investigation was completed by Parsons Corporation to delineate the extent of contamination and provide tank closure of the four (4) removed USTs from past remedial activities. The site investigation identified an additional eight (8) USTs.

1.2 Site Remediation Activities

Under a site Interim Remedial Measure (IRM), tank removal and closure was provided. Demolition of an on-site building was necessary for proper UST closure and to allow access to impacted soils beneath the building. Impacted soils were excavated and removed from the site for disposal to Tonawanda Landfill. During the removal of impacted soils and surface water, IRM construction was halted by the City due to a contract dispute. All site activities were discontinued. Contract disputes could not be settled and construction contracts were terminated. The site was left with an unfinished open excavation with the potential of additional impact soils to be excavated. Reporting for the site investigation and IRM activities was not provided to the City.

An IRM was conducted in November 2007 that included the excavation and disposal of 1,300 tons of impacted and staged soils. This IRM construction completed the excavation and removal of impacted soils that was halted by the City in 2004. The excavation followed the delineation of impacted soils as defined during the site investigation. The removal of impacted soils extended to the south to a minor



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815 RIVER ROAD SITE

NORTH TONAWANDA, NEW YORK

FIGURE 1
SITE LOCATION

extent onto the adjacent property. IRM excavation limits were brought to within approximately 5-feet of the River Road Right-of-Way (ROW). Depth of excavation limits was to the top of clay. Excavated impacted soils were pre-approved for disposal at Modern Landfill and directly loaded into trucks from the excavation. Confirmatory soil samples were collected from the previously impacted area. After confirmatory soil sampling, analytical test results were reported below the Restricted Commercial Use Soil Cleanup Objectives, and backfill of the excavation was completed.

1.3 Site Investigation/Remedial Alternatives Report

Stearns & Wheler, LLC was retained by the City to provide engineering services and perform a Site Investigation/Remedial Alternatives Report (SI/RAR). The SI/RAR report was completed in January 2008 and selected institutional controls for both impacted soils and groundwater media. The completed 2007 IRM has achieved the SI/RAR reported Restricted Commercial Soil Cleanup Objectives. An environmental easement was administered for the imposition of a deed restriction that requires compliance with an approved Soil Management Plan and the future use of groundwater from the site. The Soil Management Plan dictates deed restrictions that prohibit the installation of potable wells at the site.

1.4 Institutional and Engineering Controls

Institutional controls have been recommended as the most feasible and selected alternative as reported in the SI/RAR dated January 2008 and included the environmental easement for future redevelopment and ownership of the site. The Soil Management Plan (SMP) addresses the excavation procedures for the remaining soils during future redevelopment. The SMP includes soil management, characterization and disposal of excavated soils in accordance with the applicable New York State Department of Environmental Conservation (NYSDEC) regulations. The SMP is presented in Section 4.

In addition, the environmental easement was required the imposition of a deed restriction that requires compliance with the approved SMP and the future use of groundwater from the site. Deed restrictions are to be instituted that prohibit the installation of potable wells at the site. Any future use of groundwater at the site is prohibited. Annually, future owners are required to certify to the NYSDEC that the implemented remedy has been maintained in accordance with the Site Management Plan.

SECTION 2 - GROUNDWATER MONITORING ACTIVITIES

The Monitoring Plan includes the necessary actions required to ready and maintain the site post construction. This Monitoring Plan includes a description of a long term environmental monitoring program, very specific information on all of the equipment and materials used in any monitoring systems, contingencies for emergencies, and reporting requirements.

2.1 Site Hydrogeology

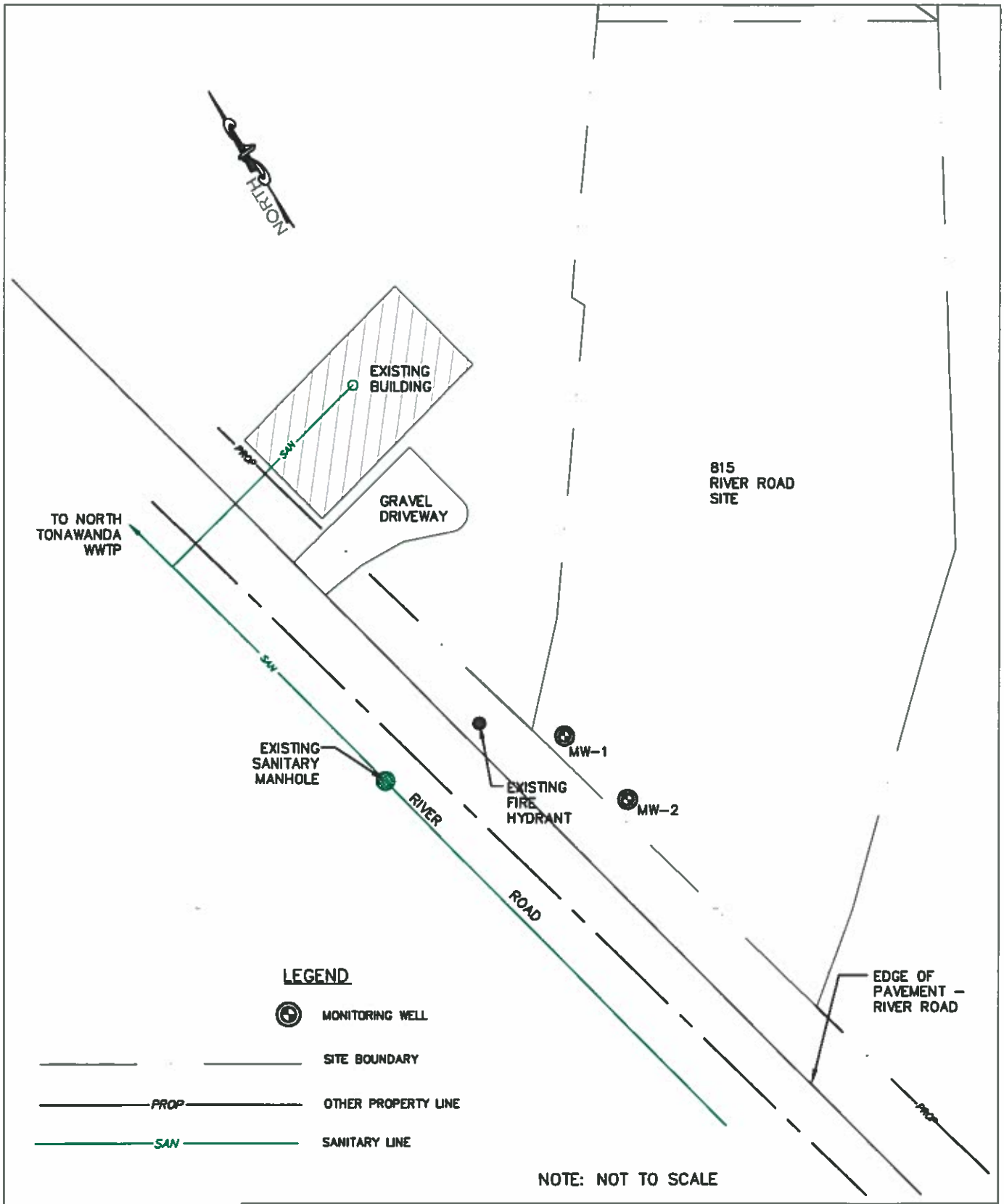
The presence of the Niagara River located to the west of the site suggests that the river would act as the regional discharge zone. This is likely the case in a regional sense. Locally, however, groundwater is possibly intercepted by the 36-inch diameter sanitary sewer line located along River Road. The top of the silty clay unit that is consistent throughout the site has been logged and recorded to range in depth between 4 to 5 feet. Standard sewer construction consists of a sewer pipe laid on a gravel pipe bedding material with the rest of the sewer trench filled with a gravel backfill. Since the sanitary sewer located along River Road is approximately 15-feet deep, the bottom of sewer trench is then deeper than the top of silty clay unit. Any groundwater emitting from the site should follow the top of clay and infiltrate into the gravel backfilled sewer trench. Once in the trench, groundwater can enter the sewer through infiltration and be transmitted to the City's WWTP for treatment.

2.2 Monitoring Requirements

Annual monitoring is performed on groundwater samples for a minimum period of 30 years or at reduced frequency and period as approved by NYSDEC. Groundwater monitoring was initially conducted after the remediation was completed and thereafter on an annual basis upon NYSDEC request. Methods used will be consistent with NYSDEC requirements. The extent and frequency of the sampling and analysis is evaluated by the NYSDEC periodically to determine if sampling points or analytes can be dropped from the monitoring program. Annual summary reports are submitted to the NYSDEC.

2.3 Groundwater Monitoring

The 2015 monitoring program at the 815 River Road site consisted of one annual sampling event. Groundwater was sampled from monitoring wells MW-1 and MW-2 on October 20, 2015. The location of groundwater monitoring wells MW-1 and MW-2 are approximately 10-feet from the curb line along the 815 River Road property that bounds River Road. This sampling event represents the 3rd event of the groundwater monitoring program. A site plan is presented on Figure 2.



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815 RIVER ROAD SITE
NORTH TONAWANDA, NEW YORK

FIGURE 2
SITE PLAN

Groundwater sampling of monitoring wells MW-1 and MW-2 was collected using low-flow purging and sampling techniques. Prior to sampling, the monitoring well was purged using a disposable bailer. Groundwater parameters of pH, conductance, dissolved oxygen (DO), temperature, and oxidation-reduction potential (ORP) were recorded. After the field parameters were recorded, groundwater sampling was collected with a disposable bailer into sample containers provided by the testing laboratory. Groundwater elevation data was recorded. Purge water generated from each monitoring well was discharged to the ground. Groundwater Field Sampling Records are presented in Appendix A.

Several quality control samples, including a trip blank and a field duplicate were collected during the sampling event. Samples were delivered under a chain of custody to ESC Lab Sciences for analysis of Volatile Organic Compounds (VOCs) by USEPA SW-846 Method 8260 TCL. The specific sampling protocol to be used, including sample preservation techniques, QA/QC objectives, a description of chain-of-custody documentation, and analytical parameters are included in the SMP.

SECTION 3 GROUNDWATER MONITORING RESULTS

3.1 2015 Groundwater Monitoring

This section includes the analytical test results of the 2015 annual groundwater sampling event and is presented in Table 1 and Appendix B. Sampling field parameters are presented on Table 2. Included in this section are descriptions of the identification and distribution of constituents present in groundwater, and a comparison of historical data. Constituents are compared to the applicable NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Groundwater Standards and Guidance Values.

Data Usability Summary Reporting completed by Vali-Data of WNY, LLC on November 12, 2015 is presented in Appendix C. The QA/QC measurements examined for the data were within method specified or laboratory derived limits. No data were rejected as a result of the data validation.

Groundwater in the southwest corner of the site has been impacted with concentrations of VOCs. VOC concentrations were detected in groundwater collected from monitoring wells MW-1 and MW-2 that exceed groundwater standards. VOC concentrations detected in groundwater from the sampling conducted in 2007, 2012 and the current sampling event on October 20, 2015 were compared to determine a trending anaylsis.

3.2 Monitoring Well MW-1 Test Results

Groundwater test results from monitoring well MW-1 detected an increase in total VOC concentrations reported in 2007 of 6 µg/L to 2012 of 148 µg/L and a decrease reported in 2015 of 28 µg/L. Groundwater tested during the 2012 and 2015 sampling events detected VOC concentrations that exceeded the groundwater standard included: ethylbenzene, and isopropylbenzene. A trending graph of detected VOCs as reported for 2007, 2012 and 2015 is presented on Figure 3.

Estimated concentration of 1,2,3 - trichlorobenezene was detected below the groundwater standard.

3.3 Monitoring Well MW-2 Test Results

Groundwater test results from monitoring well MW-2 detected an increase in total VOC concentrations reported in 2007 of 1,230 µg/L to 2012 of 3,345 µg/L and a decrease reported in 2015 of 1,659 µg/L. Groundwater tested during the 2007, 2012 and 2015 sampling events detected VOC concentrations that exceeded the groundwater standard. A trending graph of detected VOCs as reported for 2007, 2012 and 2015 is presented on Figure 4.

- Compounds that exceeded the groundwater standard in 2015 included: acetone, benzene, ethylbenzene, isopropylbenzene, toluene, total xylene.

- Compounds that exceeded the groundwater standard from the 2012 sampling event included: benzene, ethylbenzene, isopropylbenzene, and total xylenes.

- Detected compounds from the 2015 sampling event that increased in concentrations from the 2012 sampling event include: acetone and toluene.

Concentrations of cyclcohexane and methylcyclohexane were detected however no groundwater quality standard is established.

TABLE 1A
Monitoring Well MW-1
Volatile Organic Analytical Test Results
815 River Road Site

Volatile Compounds	NYSDEC TOGS 1.1.1 Water Quality Standards[1]	Units	07/16/07	07/25/12	10/20/15
1,1,1-Trichloroethane	5	µg/L	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	µg/L	ND	ND	ND
1,1,2-Trichlo-1,2,2-trifluoroethane	5	µg/L	ND	ND	ND
1,1,2-Trichloroethane	1	µg/L	ND	ND	ND
1,1-Dichloroethane	5	µg/L	ND	ND	ND
1,1-Dichloroethene	5	µg/L	ND	ND	ND
1,2,3-Trichlorobenzene	5	µg/L	-	ND	0.41J
1,2,4-Trichlorobenzene	5	µg/L	-	ND	ND
1,2-Dibromo-3-Chloropropane DBCP	0.04	µg/L	-	ND	ND
1,2-Dibromoethane (EDB)	NE	µg/L	-	ND	ND
1,2-Dichlorobenzene	3	µg/L	-	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND
1,3-Dichlorobenzene	3	µg/L	-	ND	ND
1,4-Dichlorobenzene	3	µg/L	-	ND	ND
2-Hexanone	50	µg/L	ND	ND	ND
Acetone	50	µg/L	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND
Bromoform	50	µg/L	ND	ND	ND
Bromomethane	5	µg/L	ND	ND	ND
Bromodichloromethane	50	µg/L	ND	ND	ND
Bromochloromethane	5	µg/L	-	ND	ND
Carbon disulfide	60	µg/L	ND	ND	ND
Carbon tetrachloride	5	µg/L	ND	ND	ND
Chlorobenzene	5	µg/L	ND	ND	ND
Chloroethane	5	µg/L	ND	ND	ND
Chloroform	7	µg/L	ND	ND	ND
Chloromethane	NE	µg/L	ND	ND	ND
cis-1,2-Dichloroethene	5	µg/L	ND	ND	ND
cis-1,3-Dichloropropene	0.40	µg/L	ND	ND	ND
Cyclohexane	NE	µg/L	ND	82	ND
Dibromochloromethane	50	µg/L	ND	ND	-
Chlorodibromomethane	NE	µg/L	-	ND	ND
Dichlorodifluoromethane	5	µg/L	-	ND	ND
Ethylbenzene	5	µg/L	2J	18	8.6
Isopropylbenzene	5	µg/L	ND	33	19.0
Methyl acetate	NE	µg/L	-	ND	ND
Methyl Ethyl Ketone (MEK)	50	µg/L	-	ND	ND
Methylcyclohexane	NE	µg/L	ND	15	ND
Methylene chloride	5	µg/L	ND	ND	ND
4-Methyl 2-Pentanone	NE				ND
Methyl-t-Butyl Ether (MTBE)	10	µg/L	-	ND	-
Methyl tert-butyl esther	NE	µg/L	-	ND	ND
m,p-Xylene	5	µg/L	4J	-	-
o-Xylene	5	µg/L	ND	-	-
Styrene	5	µg/L	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND
Toluene	5	µg/L	ND	ND	ND
Total Xylenes	5	µg/L	-	ND	ND
trans-1, 2-Dichloroethene	5	µg/L	ND	ND	ND
trans-1,3-Dichloropropene	0.4	µg/L	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND
Trichlorofluoromethane	5	µg/L	-	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND
Total VOCs		µg/L	6	148	28
Total VOCs		mg/L	0.006	0.148	0.028

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1: Ambient Water Quality Standards and Guidance Values (µg/L)

Bolded concentrations indicated the analyte was detected. Bolded and shaded concentrations indicate equal to or exceedance of TOGS 1.1.1 criteria.

NE = NYSDEC TOGS 1.1.1 water quality standard not established.

ND = The analyte was analyzed for but not detected. The associated value is the analyte quantitation limit.

J = The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

- = The analyte was not sampled for.

Synonyms: Chlorodibromomethane = Dichlorobromoethane

Synonyms: 4-Methyl 2-Pentanone = Methyl Isobutyl Ketone

Synonyms: Methyl Ethyl Ketone (MEK) = 2-Butanone

TABLE 1B
Monitoring Well MW-2
Volatile Organic Analytical Test Results
815 River Road Site

Volatile Compounds	NYSDEC TOGS 1.1.1 Water Quality Standards[1]	Units	07/16/07	07/25/12	10/20/15
1,1,1-Trichloroethane	5	µg/L	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	µg/L	ND	ND	ND
1,1,2-Trichlo-1,2,2-trifluoroethane	5	µg/L	ND	ND	ND
1,1,2-Trichloroethane	1	µg/L	ND	ND	ND
1,1-Dichloroethane	5	µg/L	ND	ND	ND
1,1-Dichloroethene	5	µg/L	ND	ND	ND
1,2,3-Trichlorobenzene	5	µg/L	-	ND	ND
1,2,4-Trichlorobenzene	5	µg/L	-	ND	ND
1,2-Dibromo-3-Chloropropane DBCP	0.04	µg/L	-	ND	ND
1,2-Dibromoethane (EDB)	NE	µg/L	-	ND	ND
1,2-Dichlorobenzene	3	µg/L	-	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND
1,2-Dichloropropane	5	µg/L	40J	ND	ND
1,3-Dichlorobenzene	3	µg/L	-	ND	ND
1,4-Dichlorobenzene	3	µg/L	-	ND	ND
2-Hexanone	50	µg/L	ND	ND	ND
Acetone	50	µg/L	ND	ND	188J
Benzene	1	µg/L	140	560	151J
Bromoform	50	µg/L	ND	ND	ND
Bromomethane	5	µg/L	ND	ND	ND
Bromodichloromethane	50	µg/L	ND	ND	ND
Bromochloromethane	5	µg/L	-	ND	ND
Carbon disulfide	60	µg/L	ND	ND	ND
Carbon tetrachloride	5	µg/L	ND	ND	ND
Chlorobenzene	5	µg/L	ND	ND	ND
Chloroethane	5	µg/L	ND	ND	ND
Chloroform	7	µg/L	ND	ND	ND
Chloromethane	NE	µg/L	ND	ND	ND
cis-1,2-Dichloroethene	5	µg/L	ND	ND	ND
cis-1,3-Dichloropropene	0.40	µg/L	ND	ND	ND
Cyclohexane	NE	µg/L	ND	210	71.2
Dibromochloromethane	50	µg/L	ND	ND	-
Chlorodibromomethane	NE	µg/L	-	ND	ND
Dichlorodifluoromethane	5	µg/L	-	ND	ND
Ethylbenzene	5	µg/L	460	1,500	878J
Isopropylbenzene	5	µg/L	ND	220	115.0
Methyl acetate	NE	µg/L	-	ND	ND
Methyl Ethyl Ketone (MEK)	50	µg/L	-	ND	ND
Methylcyclohexane	NE	µg/L	ND	15	19.8
Methylene chloride	5	µg/L	ND	ND	ND
4-Methyl 2-Pentanone					ND
Methyl-t-Butyl Ether (MTBE)	10	µg/L	-	ND	-
Methyl tert-butyl esther	NE	µg/L	-	ND	ND
m,p-Xylene	5	µg/L	480	-	-
o-Xylene	5	µg/L	40J	-	-
Styrene	5	µg/L	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND
Toluene	5	µg/L	70J	ND	191J
Total Xylenes	5	µg/L	-	840	424.0
trans-1, 2-Dichloroethene	5	µg/L	ND	ND	ND
trans-1,3-Dichloropropene	0.4	µg/L	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND
Trichlorofluoromethane	5	µg/L	-	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND
Total VOCs		µg/L	1,230	3,345	1,866
Total VOCs		mg/L	1.230	3.345	1.866

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Synonyms: 4-Methyl 2-Pentanone = Methyl Isobutyl Ketone

Synonyms: Methyl Ethyl Ketone (MEK) = 2-Butanone

TABLE 2

815 River Road Site

2015 Field Groundwater Parameters

Parameter	Monitoring Well Location	
	MW-1	MW-2
Temperature (°C)	17.54	17.38
pH	7.61	7.13
Conductivity (mS/cm)	1.53	2.03
Dissolved Oxygen (mg/L)	4.87	4.48
Turbidity (NTUs)[1]	NA	NA
ORP (mV)	-41	-13

FIGURE 3
Groundwater VOC Concentrations in MW-1 vs. Time

815 River Road Site - North Tonawanda, NY
2015 Periodic Review Report

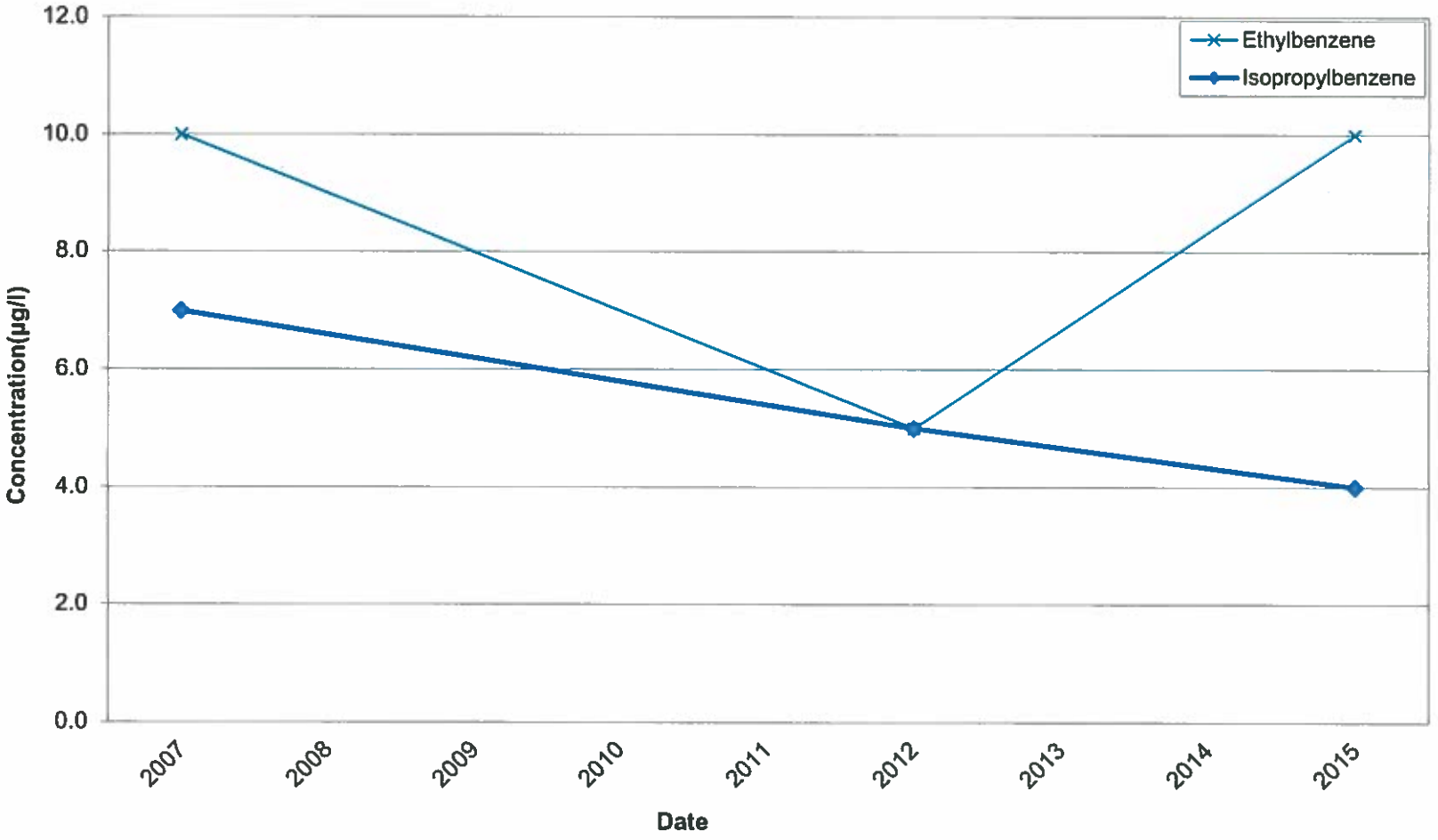
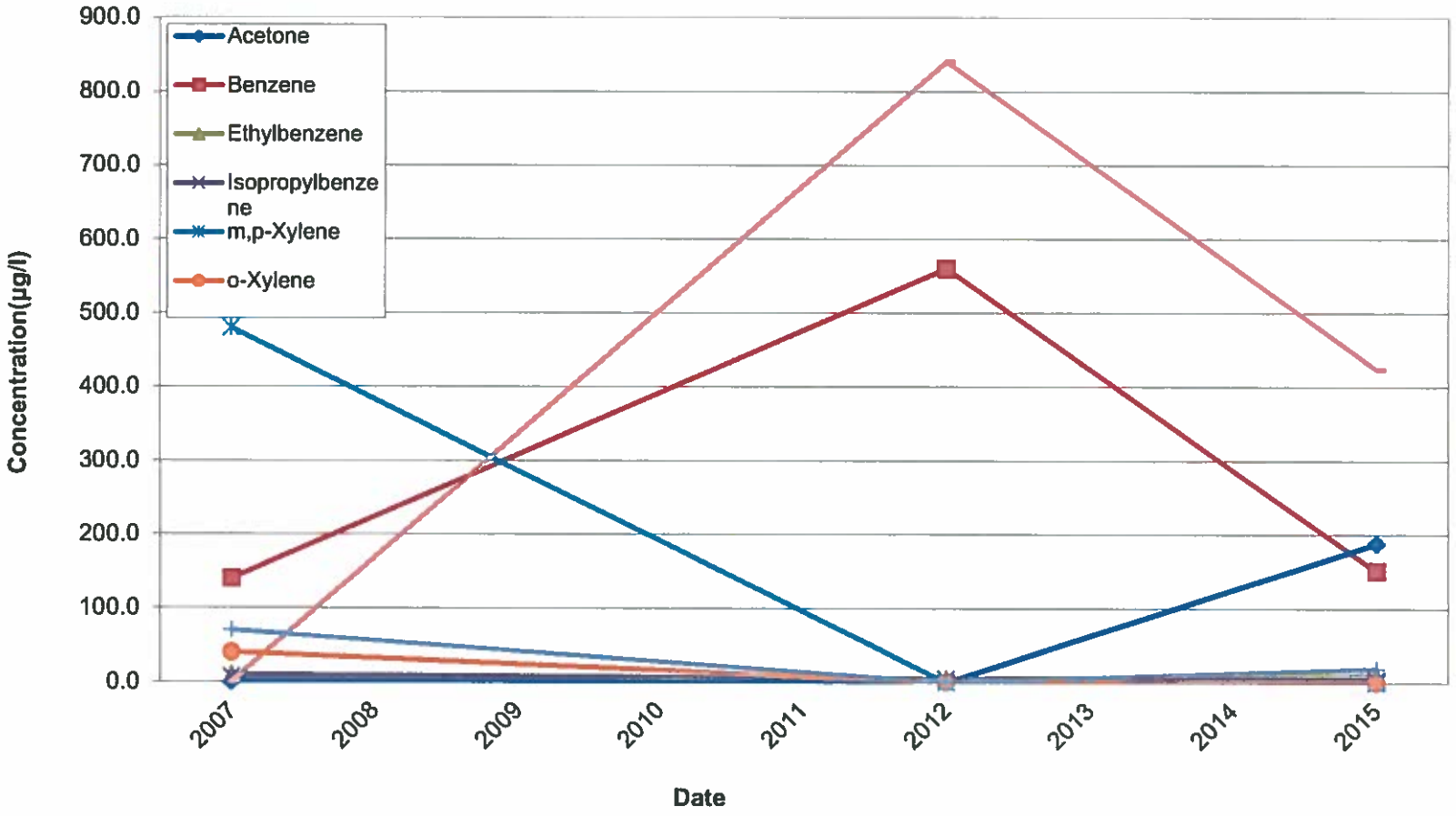


FIGURE 4
Groundwater VOC Concentrations in MW-2 vs. Time

815 River Road Site - North Tonawanda, NY
2015 Periodic Review Report



SECTION 4 - SOIL MANAGEMENT PLAN

The objective of the SMP is to set guidelines for management of soil material during any future activities which would breach the cover system at the site. The SMP addresses environmental concerns related to soil management and has been reviewed and approved by the NYSDEC.

4.1 Nature and Extent of Contamination

Based on data obtained from previous investigations and the IRM remediation completed at the site, a Final Engineering Report for the 815 River Road Site Remediation dated June 2008 was completed by Stearns & Wheler, LLC.

During site investigation activities, impacted soils were identified. The impacted soil area was excavated, removed and disposed off-site during an IRM completed in 2007. Impacted soils were sampled and categorized to preliminarily delineate the extent of the contamination and for waste characterization for off-site disposal. The impacted soils were excavated to the top of clay which was defined ranging between 9 to 11-feet.

The impacted soil contained concentrations of both volatile and semi-volatile compounds. All concentrations reported during the 2007 IRM were below the Restricted Commercial Use Soil Cleanup Objectives. VOC concentrations that appeared to be the most impacting included xylene and ethylbenzene. Semi-volatile concentrations to a lesser degree were detected to include naphthalene. The potential exposure pathways include inhalation, absorption, ingestion and contact. Health effects from exposure to these chemical compounds are eye, skin and respiratory irritants.

The constituents of potential concern for soil consist primarily of residual VOCs and Poly Aromatic Hydrocarbons (PAHs). Results of groundwater sampling indicate that constituents in the soil/fill material have impacted groundwater quality with low concentrations of volatile and semi-volatile compounds. Groundwater in the southwest corner of the site has been impacted with low concentrations of benzene, 1,2-dichloropropane, toluene, xylene, and ethylbenzene. Analytical test results indicated that groundwater standards have exceeded groundwater standards.

Groundwater in this portion of the site presumably flows toward the 36-inch diameter sanitary sewer line that runs down the east side of River Road. As stated in Section 2.1 Site Hydrogeology, since the sanitary sewer located along River Road is approximately 15-feet deep, the bottom of sewer trench is then deeper than the top of silty clay unit. Any groundwater emitting from the site should follow the top of clay and

infiltrate into the gravel backfilled sewer trench. Once in the trench, groundwater will enter the sewer through infiltration and be transmitted to the City's WWTP for treatment.

Deed restrictions enacted by the City, prohibits the installation of potable wells on the property.

4.2 Contemplated Use

As part of the redevelopment project, the property has been identified for industrial/commercial usage. Residential redevelopment will not be permitted. Deed restrictions will require compliance with the SMP. The future use of site groundwater is prohibited.

4.3 Purpose and Description of Surface Cover System

The purpose of the surface cover system is to eliminate the potential for human contact with fill material and eliminate the potential for contaminated runoff from the property. The cover system consisting of existing non-impacted fill soils overlay the remaining impacted soils located within the River Road ROW. Soil borings completed near the River Road ROW have been logged to report that 3 to 6-feet of non-impacted soil overlays the residually impacted soils. The existing non-impacted soils provides a cover system for any residually impacted materials within the River Road ROW.

4.4 Management of Soil/Fill and Long Term Maintenance

The purpose of this section is to provide environmental guidelines for management of subsurface soils/fill and the long-term maintenance of the cover system during any future intrusive work which breaches the cover system. The SMP includes the following conditions:

- Any breach of the cover system within the River Road ROW of a width of 33-feet, including for the purposes of construction or utilities work, must be replaced or repaired using an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. The repaired area must be covered with clean soil and reseeded or covered with impervious product such as concrete or asphalt, as described in Section 4, to prevent erosion in the future.

- The cover system must be maintained within the River Road ROW since residual impacted soils above NYSDEC Part 375 Unrestricted Use Cleanup Objectives may be present.

- Control surface erosion and run-off of the entire property at all times, including during construction activities. This includes proper maintenance of the fill cover established on the property.

- Site soil that is excavated and is intended to be removed from the property must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives.

- Soil excavated at the site may be reused as backfill material on-site provided it contains no visual or olfactory evidence of contamination, and is placed beneath a cover system component of 2-3 feet of clean fill from an acceptable source area.

- Any off-site fill material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination.

- Prior to any construction activities, workers shall be notified of the site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety.

- An annual report will contain certification that the institutional controls put in place, pursuant to Operation, Monitoring, and Maintenance Plan (OM&M), are still in place, have not been altered and are still effective; that the remedy and protective cover have been maintained; and that the conditions at the site are fully protective of public health and the environment. Inspection will be documented and a letter will be submitted to the NYSDEC. The site designated representative has included the signed IC - EC Certification as presented in Appendix D.

4.5 Excavated and Stockpiled Soil/Fill Disposal

Every effort will be made to keep excavated soils on site. The proper management of the remaining impacted subsurface soils located within the River Road ROW and other possibly impacted site soils must be provided. Soil/fill that is excavated as part of redevelopment that cannot be used as fill below the cover system will be characterized prior to transportation off-site for disposal at a permitted facility. For excavated soil/fill with visual evidence of contamination i.e., staining or elevated photoionization detector (PID) measurements, one composite sample and a duplicate sample will be collected for each 100 cubic yards of stockpiled soil/fill. For excavated soil/fill that does not exhibit visual evidence of contamination but must be sent for off-site disposal, one composite sample and a duplicate sample will be collected for

2,000 cubic yards of stockpiled soil, and a minimum of 1 sample will be collected for volumes less than 2,000 cubic yards.

The composite sample will be collected from five locations within each stockpile. A duplicate composite sample will also be collected. PID measurements will be recorded for each of the five individual locations. One grab sample will be collected from the individual location with the highest PID measurement. If none of the five individual sample locations exhibit PID readings, one location will be selected at random. The composite sample will be analyzed by a NYSDOH ELAP-certified laboratory for pH (EPA Method 9045C), Target Compound List (TCL), semi-volatile organic compounds (SVOCs). The grab sample will be analyzed for TCL VOCs.

Additional characterization sampling for off-site disposal may be required by the disposal facility. To potentially reduce off-site disposal requirements/costs, the owner or site developer may also choose to characterize each stockpile individually. If the analytical results indicate that concentrations exceed the standards for Resource Conservation and Recovery Act (RCRA) characteristics, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. If analytical results indicate that the soil is not a hazardous waste, the material will be properly disposed off-site at a non-hazardous waste facility. Stockpiled soil cannot be transported on or off-site until analytical results are received.

4.6 Subgrade Materials

Subgrade material used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria.

- Subgrade material stockpiled on the surface for re-use must be placed on a liner material or other suitable surface to avoid the commingling of this material with clean topsoil or other surface materials. Stockpiled subgrade material should also be managed to prevent erosion and runoff of precipitation waters which may contact this material.

- Excavated on-site soil/fill which appears to be visually impacted shall be sampled and analyzed. If backfill materials are suspect, then analytical testing will be required. If soils or soil mixtures are used as backfill materials, they will be sampled for VOCs, SVOCs, pesticides & Polychlorinated Biphenols (PCBs), and metals, and compared to limits listed under Restricted Commercial on Table 3: Imported Backfill Limits.

- Any off-site fill material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. A letter will be required from the backfill supplier certifying material is clean from any hazardous and/or solid waste materials.

- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6 NYCRR Part 360-1.2(a).

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, TAL metals. The soil will be acceptable for use as backfill provided that all parameters meet the Imported Backfill Limits.

- Non-virgin soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet SCOCLs, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the Imported Backfill Limits.

4.7 Site Usage

The site is presently used by Metzger Removal, Inc. as a crushing recycling operation. Concrete, brick and other materials are hauled to the site from demolition sites in the surrounding area, stockpiled for the crushing operation. After crushing, conveyors collect the crushed material and stage in stockpiles. No excavation took place at the site during the period between 2012 and 2015.

TABLE 3
IMPORTED BACKFILL LIMITS

	Unrestricted	Residential	Restricted - Residential	**Restricted - Commercial or Industrial**	Ecological Limit For Sites Which Have Ecological Resources
METALS					
Arsenic	13	16	16	**16**	13
Barium	350	350	400	**400**	433
Beryllium	7.2	14	47	**47**	10
Cadmium	2.5	2.5	4.3	**7.5**	4
Chromium, Hexavalent[1]	1	19	19	**19**	1
Chromium, Trivalent[1]	30	36	180	**1500**	41
Copper	50	270	270	**270**	50
Cyanide	27	27	27	**27**	NS[2]
Lead	63	400	400	**450**	63
Manganese	1600	2000	2000	**2000**	1600
Mercury (total)	0.18	0.73	0.73	**0.73**	0.18
Nickel	30	130	130	**130**	30
Selenium	3.9	4	4	**4**	3.9
Silver	2	8.3	8.3	**8.3**	2
Zinc	109	2200	2480	**2480**	109
PCBs/PESTICIDES					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	**3.8**	NS[2]
4,4'-DDE	0.0033	1.8	8.9	**17**	0.0033
4,4'-DDT	0.0033	1.7	7.9	**47**	0.0033
4,4'-DDD	0.0033	2.6	13	**14**	0.0033
Aldrin	0.005	0.019	0.097	**0.19**	0.14
Alpha-BHC	0.02	0.02	0.02	**0.02**	0.04
Beta-BHC	0.036	0.072	0.09	**0.09**	0.6
Chlordane (alpha)	0.094	0.91	2.9	**2.9**	1.3
Delta-BHC	0.04	0.25	0.25	**0.25**	0.04
Dibenzofuran	7	14	59	**210**	NS[2]
Dieldrin	0.005	0.039	0.1	**0.1**	0.006
Endosulfan I	2.4	4.8	24	**102**	NS[2]
Endosulfan II	2.4	4.8	24	**102**	NS[2]
Endosulfan sulfate	2.4	4.8	24	**200**	NS[2]
Endrin	0.014	0.06	0.06	**0.06**	0.014
Heptachlor	0.042	0.38	0.38	**0.38**	0.14
Lindane	0.1	0.1	0.1	**0.1**	6
Polychlorinated biphenyls	0.1	1	1	**1**	1
SEMIVOLATILE ORGANIC COMPOUNDS					
Acenaphthene	20	98	98	**98**	20
Acenaphthylene	100	100	100	**107**	NS[2]
Anthracene	100	100	100	**500**	NS[2]
Benzo(a)anthracene	1	1	1	**1**	NS[2]
Benzo(a)pyrene	1	1	1	**1**	2.6
Benzo(b)fluoranthene	1	1	1	**1.7**	NS[2]
Benzo(g,h,i)perylene	100	100	100	**500**	NS[2]
Benzo(k)fluoranthene	0.8	1	1.7	**1.7**	NS[2]
Chrysene	1	1	1	**1**	NS[2]
Dibenz(a,h)anthracene	0.33	0.33	0.33	**0.56**	NS[2]
Fluoranthene	100	100	100	**500**	NS[2]
Fluorene	30	100	100	**386**	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	**5.6**	NS[2]

	Unrestricted	Residential	Restricted - Residential	**Restricted - Commercial or Industrial**	Ecological Limit For Sites Which Have Ecological Resources
m-Cresol(s)	0.33	0.33	0.33	**0.33**	NS[2]
Naphthalene	12	12	12	**12**	NS[2]
o-Cresol(s)	0.33	0.33	0.33	**0.33**	NS[2]
p-Cresol(s)	0.33	0.33	0.33	**0.33**	NS[2]
Pentachlorophenol	0.8	0.8	0.8	**0.8**	0.8
Phenanthrene	100	100	100	**500**	NS[2]
Phenol	0.33	0.33	0.33	**0.33**	30
Pyrene	100	100	100	**500**	NS[2]
VOLATILE ORGANIC COMPOUNDS					
1,1,1-Trichloroethane	0.68	0.68	0.68	**0.68**	NS[2]
1,1-Dichloroethane	0.27	0.27	0.27	**0.27**	NS[2]
1,1-Dichloroethene	0.33	0.33	0.33	**0.33**	NS[2]
1,2-Dichlorobenzene	1.1	1.1	1.1	**1.1**	NS[2]
1,2-Dichloroethane	0.02	0.02	0.02	**0.02**	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	**0.25**	NS[2]
1,2-Dichloroethene(trans)	0.19	0.19	0.19	**0.19**	NS[2]
1,3-Dichlorobenzene	2.4	2.4	2.4	**2.4**	NS[2]
1,4-Dichlorobenzene	1.8	1.8	1.8	**1.8**	20
1,4-Dioxane	0.1	0.1	0.1	**0.1**	0.1
Acetone	0.05	0.05	0.05	**0.05**	2.2
Benzene	0.06	0.06	0.06	**0.06**	70
Butylbenzene	12	12	12	**12**	NS[2]
Carbon tetrachloride	0.76	0.76	0.76	**0.76**	NS[2]
Chlorobenzene	1.1	1.1	1.1	**1.1**	40
Chloroform	0.37	0.37	0.37	**0.37**	12
Ethylbenzene	1	1	1	**1**	NS[2]
Hexachlorobenzene	0.33	0.33	1.2	**3.2**	NS[2]
Methyl ethyl ketone	0.12	0.12	0.12	**0.12**	100
Methyl tert-butyl ether	0.93	0.93	0.93	**0.93**	NS[2]
Methylene chloride	0.05	0.05	0.05	**0.05**	12
Propylbenzene-n	3.9	3.9	3.9	**3.9**	NS[2]
Sec-Butylbenzene	11	11	11	**11**	NS[2]
Tert-Butylbenzene	5.9	5.9	5.9	**5.9**	NS[2]
Tetrachloroethene	1.3	1.3	1.3	**1.3**	2
Toluene	0.7	0.7	0.7	**0.7**	36
Trichloroethene	0.47	0.47	0.47	**0.47**	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	**3.6**	NS[2]
Trimethylbenzene-1,3,5	8.4	8.4	8.4	**8.4**	NS[2]
Vinyl chloride	0.02	0.02	0.02	**0.02**	NS[2]
Xylene (mixed)	0.26	1.6	1.6	**1.6**	0.26

Footnotes:

1) The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

2) NS = Not Specified. Protection of ecological resources for SCOs were not developed for contaminants identified in the above table with "NS". Where such contaminants appear in the above table, the applicant may be required by the Department to calculate a protection of ecological resources SCO.

SECTION 5 - CONCLUSIONS

Analytical testing from the 2015 sampling event detected the following VOCs in groundwater sampled from monitoring wells MW-1 and MW-2: acetone (MW-2), benzene (MW-2), ethylbenzene (MW-1 and MW-2), isopropylbenzene (MW-1 and MW-2), toluene (MW-2) and total xylenes (MW-2) at concentrations that were equal to or exceed the groundwater standard. Trend analysis of VOCs comparing site historical analytical test results as reported in dated 2007, 2012, and 2015 indicates that VOC concentrations are fluctuating in groundwater at both monitoring wells with exception for acetone which was first detected in groundwater sampled from monitoring well MW-2 in 2015.

The concentrations of ethylbenzene at monitoring well MW-1 have fluctuated over the reported three (3) sampling events. In 2007, the concentration of ethylbenzene was detected at an estimated 2 µg/L concentration which is below the groundwater standard. Test results from the most recent 2015 sampling event detected the concentration of ethylbenzene at 8.6 µg/L, which represents a 52 percent decrease as reported in 2012 of 18 µg/L. The long term trend for ethylbenzene indicates a fluctuation in concentration at the monitoring well MW-1 location.

Concentrations of isopropylbenzene at monitoring well MW-1 have fluctuated over the reported three (3) sampling events. Isopropylbenzene was not detected at monitoring well MW-1 in 2007. Test results from the 2015 sampling event detected concentrations of isopropylbenzene at 19 µg/L, which represents a 42 percent decrease as reported in 2012 of 33 µg/L. The long term trend for isopropylbenzene indicates a fluctuation in concentrations detected in groundwater from monitoring well MW-1.

Concentrations of acetone at monitoring well MW-2 were first detected in 2015 at 188 µg/L. The long term trend for acetone indicates a fluctuation in concentrations detected in groundwater from monitoring well MW-2.

Concentrations of benzene at monitoring well MW-2 have fluctuated over the reported three (3) sampling events. In 2012, concentrations of benzene were detected at 560 µg/L, which represented a 300 percent increase as reported in 2007 that detected benzene at 140 µg/L (ppb). However, test results from the most recent 2015 sampling event detected the concentration of benzene at 151 µg/L (ppb), which represents a 73 percent decrease as reported in 2012 of 560 µg/L (ppb). The long term trend for benzene indicates fluctuation with a decrease in concentration at the monitoring well MW-2 location.
Concentrations of toluene at monitoring well MW-2 have fluctuated over the reported three (3) sampling events. The 2007 sampling event detected concentrations of toluene at an estimated 70 µg/L (ppb).

Concentrations of toluene were not detected in 2012. Test results from the most recent 2015 sampling event detected the concentrations of toluene at 19.1 µg/L (ppb), which represents a 73 percent decrease as reported in 2007. The long term trend for toluene indicates a decrease in concentration at the monitoring well MW-2 location.

Concentrations of total xylenes at monitoring well MW-2 have fluctuated over the reported three (3) sampling events. Total xylenes were not detected in the groundwater at monitoring well MW-2 in 2007. The 2012, concentrations of total xylenes were detected at 840 µg/L (ppb); and, in 2015 detected total xylenes concentrations in groundwater at monitoring well MW-2 at 424 µg/L (ppb) which represented a 50 percent decrease as reported in 2012. The long term trend for total xylenes indicates fluctuation with a decrease in concentration at the monitoring well MW-2 location over the most recent monitoring period.

Total VOCs concentrations detected in groundwater increased in both monitoring wells MW-1 and MW-2 from 2007 to 2012: from 6 µg/L to 148 µg/L in monitoring well MW-1 and from 1,230 µg/L to 3,345 µg/L in monitoring well MW-2. However, concentrations of total VOCs have decreased in both locations from 2012 to 2015: from 148 µg/L to 28 µg/L in monitoring well MW-1 and from 3,345 µg/L to 1,866 µg/L (ppb) in monitoring well MW-2.

Trend analysis comparing site historical analytical test results with the most recent sampling event of 2015 indicates fluctuation with a reduced VOCs total concentration.

APPENDICES

APPENDIX A

GROUNDWATER SAMPLING FIELD LOGS

GHD INC.
GROUNDWATER FIELD SAMPLING RECORD

SITE 815 River Road DATE 10/20/15

Sampler: Brian Doyle SAMPLE ID MW-1

Depth of well (from top of casing).....	14.33 ft	EL 562.71
Initial static water level (from top of casing)....	6.3 ft	EL 570.7
Top of PVC Casing Elevation	577.04	

Evacuation Method:

Peristaltic		Centrifugal		1 in. casing:		ft. of water x .09 =	gallons
Airlift		Pos. Displ.		2 in. casing:	8.0	ft. of water x .16 =	1.28 gallons
Bailer	X	>>> No. of bails		3 in. casing:		ft. of water x .36 =	gallons

Well Volume Calculation

Volume of water removed 3.85 gals.

> 3 volumes: yes no

dry: yes no

Field Tests:

Temp:	17.54	C
pH	7.61	
Conductivity	1.53	mS/cm
DO	4.87	mg/L
Turbidity	NA	NTUs
Oxidation Reduction Potential (ORP)	-41	mV

Sampling: Time: 2:30 PM

Sampling Method:

Peristaltic Pump	
Disposable Bailer	X
Disposable Tubing	

Observations:

Weather/Temperature: Overcast, 60° F

Physical Appearance and Odor of Sample: Slight chemical odor; clear then grayish color, turbid.

Comments: Well pad is intact and the stickup protective cover is in good condition.

GHD INC.
GROUNDWATER FIELD SAMPLING RECORD

SITE 815 River Road DATE 10/20/15

Sampler: Brian Doyle SAMPLE ID MW-2

Depth of well (from top of casing).....	14.33 ft	EL 562.71
Initial static water level (from top of casing)....	5.6 ft	EL 571.4
Top of PVC Casing Elevation	577.04	

Evacuation Method:

Peristaltic		Centrifugal		1 in. casing:		ft. of water x .09 =	gallons
Airlift		Pos. Displ.		2 in. casing:	8.7	ft. of water x .16 =	1.40 gallons
Bailer	X	>>> No. of bails		3 in. casing:		ft. of water x .36 =	gallons

Well Volume Calculation

Volume of water removed 4.19 gals.

> 3 volumes: yes no

dry: yes no

Field Tests:

Temp:	17.38	C
pH	7.13	
Conductivity	2.03	mS/cm
DO	4.48	mg/L
Turbidity	NA	NTUs
Oxidation Reduction Potential (ORP)	-13	mV

Sampling: Time: 3:00 PM

Sampling Method:

Peristaltic Pump	
Disposable Bailer	X
Disposable Tubing	

Observations:

Weather/Temperature: Overcast, 60° F

Physical Appearance and Odor of Sample: Distinct chemical odor; clear then blackish color, very turbid

Comments: Well pad is intact and the stickup protective cover is in good condition.

APPENDIX B

ANALYTICAL TEST RESULTS

ANALYTICAL REPORT

October 26, 2015

GHD

Sample Delivery Group:	L795740
Samples Received:	10/21/2015
Project Number:	
Description:	815 River Road Site Groundwater Sampling
Site:	N. TONAWANDA, NY
Report To:	Mr. Dave Rowlinson 285 Delaware Ave. Suite 500 Buffalo, NY 14202

Entire Report Reviewed By:

T. Alan Harvill
Technical Service Representative

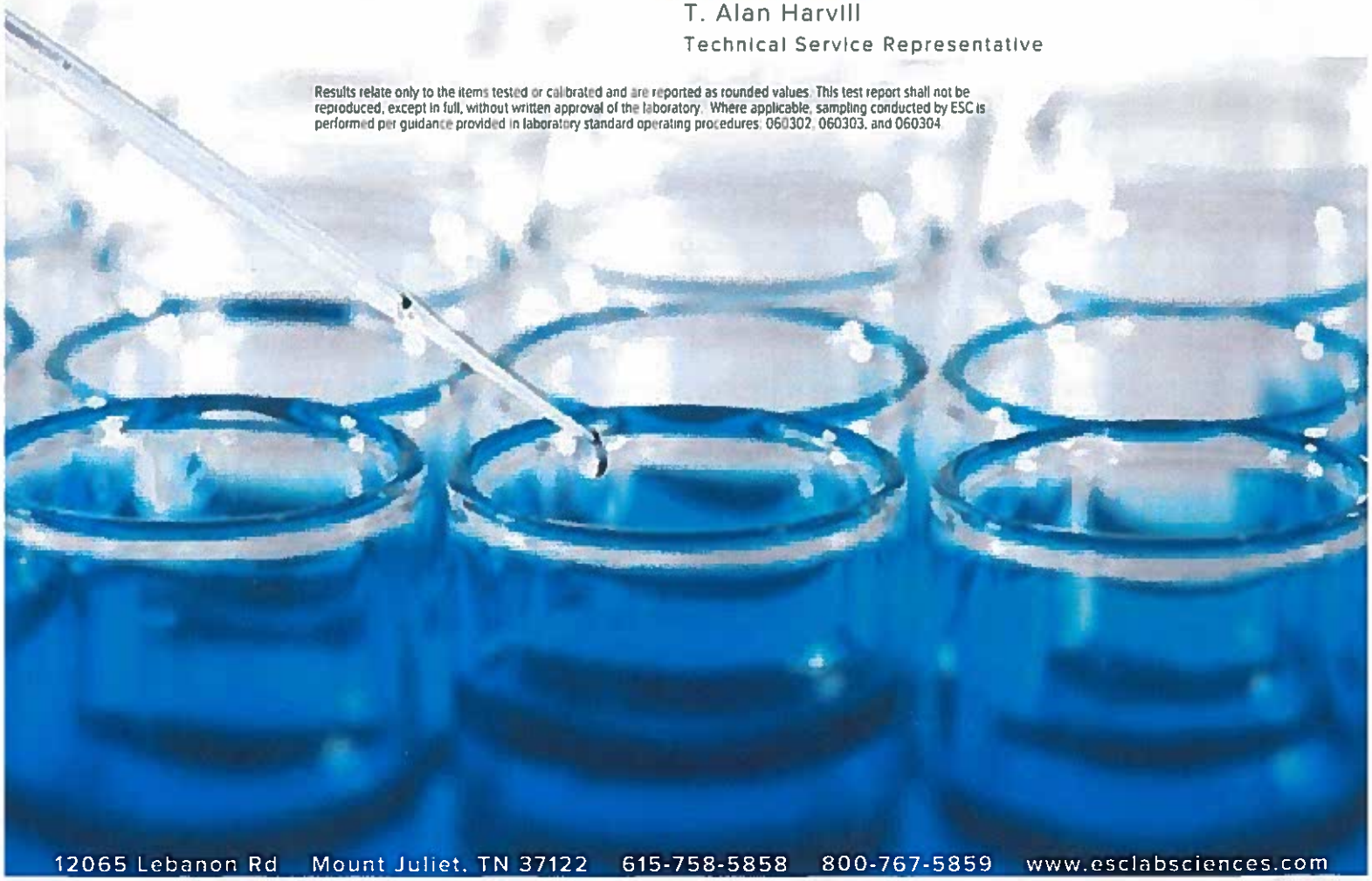


TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

MW-1 L795740-01 GW

Collected by: Brian Doyle
Collected date/time: 10/20/15 14:30
Received date/time: 10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG824129	1	10/24/15 17:05	10/24/15 17:05	MEG

MW-2 L795740-02 GW

Collected by: Brian Doyle
Collected date/time: 10/20/15 15:00
Received date/time: 10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG824129	5	10/24/15 16:10	10/24/15 16:10	MEG

TRIP BLANK L795740-03 GW

Collected by: Brian Doyle
Collected date/time: 10/20/15 00:00
Received date/time: 10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG824129	1	10/24/15 15:52	10/24/15 15:52	MEG

FD AT MW-1 L795740-04 GW

Collected by: Brian Doyle
Collected date/time: 10/20/15 14:30
Received date/time: 10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG824129	1	10/24/15 17:23	10/24/15 17:23	MEG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

T. Alan Harvill
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	188	J	50.0	250	5	10/24/2015 16:10	WG824129
Benzene	151		1.66	5.00	5	10/24/2015 16:10	WG824129
Bromochloromethane	U		2.60	5.00	5	10/24/2015 16:10	WG824129
Bromodichloromethane	U		1.90	5.00	5	10/24/2015 16:10	WG824129
Bromoform	U		2.34	5.00	5	10/24/2015 16:10	WG824129
Bromomethane	U		4.33	25.0	5	10/24/2015 16:10	WG824129
Carbon disulfide	U		1.38	5.00	5	10/24/2015 16:10	WG824129
Carbon tetrachloride	U		1.90	5.00	5	10/24/2015 16:10	WG824129
Chlorobenzene	U		1.74	5.00	5	10/24/2015 16:10	WG824129
Chlorodibromomethane	U		1.64	5.00	5	10/24/2015 16:10	WG824129
Chloroethane	U		2.26	25.0	5	10/24/2015 16:10	WG824129
Chloroform	U		1.62	25.0	5	10/24/2015 16:10	WG824129
Chloromethane	U		1.38	12.5	5	10/24/2015 16:10	WG824129
Cyclohexane	71.2		1.95	5.00	5	10/24/2015 16:10	WG824129
1,2-Dibromo-3-Chloropropane	U		6.65	25.0	5	10/24/2015 16:10	WG824129
1,2-Dibromoethane	U		1.90	5.00	5	10/24/2015 16:10	WG824129
1,2-Dichlorobenzene	U		1.74	5.00	5	10/24/2015 16:10	WG824129
1,3-Dichlorobenzene	U		1.10	5.00	5	10/24/2015 16:10	WG824129
1,4-Dichlorobenzene	U		1.37	5.00	5	10/24/2015 16:10	WG824129
Dichlorodifluoromethane	U		2.76	25.0	5	10/24/2015 16:10	WG824129
1,1-Dichloroethane	U		1.30	5.00	5	10/24/2015 16:10	WG824129
1,2-Dichloroethane	U		1.80	5.00	5	10/24/2015 16:10	WG824129
1,1-Dichloroethene	U		1.99	5.00	5	10/24/2015 16:10	WG824129
cis-1,2-Dichloroethene	U		1.30	5.00	5	10/24/2015 16:10	WG824129
trans-1,2-Dichloroethene	U		1.98	5.00	5	10/24/2015 16:10	WG824129
1,2-Dichloropropane	U		1.53	5.00	5	10/24/2015 16:10	WG824129
cis-1,3-Dichloropropene	U		2.09	5.00	5	10/24/2015 16:10	WG824129
trans-1,3-Dichloropropene	U		2.10	5.00	5	10/24/2015 16:10	WG824129
Ethylbenzene	878	V	1.92	5.00	5	10/24/2015 16:10	WG824129
2-Hexanone	U		19.1	50.0	5	10/24/2015 16:10	WG824129
Isopropylbenzene	115		1.63	5.00	5	10/24/2015 16:10	WG824129
2-Butanone (MEK)	U		19.6	50.0	5	10/24/2015 16:10	WG824129
Methyl Acetate	U		21.5	100	5	10/24/2015 16:10	WG824129
Methyl Cyclohexane	19.8		1.90	5.00	5	10/24/2015 16:10	WG824129
Methylene Chloride	U		5.00	25.0	5	10/24/2015 16:10	WG824129
4-Methyl-2-pentanone (MIBK)	U		10.7	50.0	5	10/24/2015 16:10	WG824129
Methyl tert-butyl ether	U		1.84	5.00	5	10/24/2015 16:10	WG824129
Styrene	U		1.54	5.00	5	10/24/2015 16:10	WG824129
1,1,2,2-Tetrachloroethane	U		0.650	5.00	5	10/24/2015 16:10	WG824129
Tetrachloroethene	U		1.86	5.00	5	10/24/2015 16:10	WG824129
Toluene	19.1	J	3.90	25.0	5	10/24/2015 16:10	WG824129
1,2,3-Trichlorobenzene	U		1.15	5.00	5	10/24/2015 16:10	WG824129
1,2,4-Trichlorobenzene	U		1.78	5.00	5	10/24/2015 16:10	WG824129
1,1,1-Trichloroethane	U		1.60	5.00	5	10/24/2015 16:10	WG824129
1,1,2-Trichloroethane	U		1.92	5.00	5	10/24/2015 16:10	WG824129
Trichloroethene	U		1.99	5.00	5	10/24/2015 16:10	WG824129
Trichlorofluoromethane	U		6.00	25.0	5	10/24/2015 16:10	WG824129
1,1,2-Trichlorotrifluoroethane	U		1.52	5.00	5	10/24/2015 16:10	WG824129
Vinyl chloride	U		1.30	5.00	5	10/24/2015 16:10	WG824129
Xylenes, Total	424		5.30	15.0	5	10/24/2015 16:10	WG824129
(S) Toluene-d8	*103*			*90.0-115*		*10/24/2015 16:10*	WG824129
(S) Dibromofluoromethane	*94.4*			*79.0-121*		*10/24/2015 16:10*	WG824129
(S) a,a,a-Trifluorotoluene	*103*			*90.4-116*		*10/24/2015 16:10*	WG824129
(S) 4-Bromofluorobenzene	*103*			*80.1-120*		*10/24/2015 16:10*	WG824129

Cp
Tc
Ss
Cn
Sr
Qc
Gl
Al
Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	88.8		10.0	50.0	1	10/24/2015 17:05	WG824129
Benzene	U		0.331	1.00	1	10/24/2015 17:05	WG824129
Bromochloromethane	U		0.520	1.00	1	10/24/2015 17:05	WG824129
Bromodichloromethane	U		0.380	1.00	1	10/24/2015 17:05	WG824129
Bromoform	U		0.469	1.00	1	10/24/2015 17:05	WG824129
Bromomethane	U		0.866	5.00	1	10/24/2015 17:05	WG824129
Carbon disulfide	U		0.275	1.00	1	10/24/2015 17:05	WG824129
Carbon tetrachloride	U		0.379	1.00	1	10/24/2015 17:05	WG824129
Chlorobenzene	U		0.348	1.00	1	10/24/2015 17:05	WG824129
Chlorodibromomethane	U		0.327	1.00	1	10/24/2015 17:05	WG824129
Chloroethane	U		0.453	5.00	1	10/24/2015 17:05	WG824129
Chloroform	U		0.324	5.00	1	10/24/2015 17:05	WG824129
Chloromethane	U		0.276	2.50	1	10/24/2015 17:05	WG824129
Cyclohexane	U		0.390	1.00	1	10/24/2015 17:05	WG824129
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/24/2015 17:05	WG824129
1,2-Dibromoethane	U		0.381	1.00	1	10/24/2015 17:05	WG824129
1,2-Dichlorobenzene	U		0.349	1.00	1	10/24/2015 17:05	WG824129
1,3-Dichlorobenzene	U		0.220	1.00	1	10/24/2015 17:05	WG824129
1,4-Dichlorobenzene	U		0.274	1.00	1	10/24/2015 17:05	WG824129
Dichlorodifluoromethane	U		0.551	5.00	1	10/24/2015 17:05	WG824129
1,1-Dichloroethane	U		0.259	1.00	1	10/24/2015 17:05	WG824129
1,2-Dichloroethane	U		0.361	1.00	1	10/24/2015 17:05	WG824129
1,1-Dichloroethene	U		0.398	1.00	1	10/24/2015 17:05	WG824129
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/24/2015 17:05	WG824129
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/24/2015 17:05	WG824129
1,2-Dichloropropane	U		0.306	1.00	1	10/24/2015 17:05	WG824129
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/24/2015 17:05	WG824129
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/24/2015 17:05	WG824129
Ethylbenzene	8.61		0.384	1.00	1	10/24/2015 17:05	WG824129
2-Hexanone	U		3.82	10.0	1	10/24/2015 17:05	WG824129
Isopropylbenzene	19.0		0.326	1.00	1	10/24/2015 17:05	WG824129
2-Butanone (MEK)	U		3.93	10.0	1	10/24/2015 17:05	WG824129
Methyl Acetate	U		4.30	20.0	1	10/24/2015 17:05	WG824129
Methyl Cyclohexane	U		0.380	1.00	1	10/24/2015 17:05	WG824129
Methylene Chloride	U		1.00	5.00	1	10/24/2015 17:05	WG824129
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/24/2015 17:05	WG824129
Methyl tert-butyl ether	U		0.367	1.00	1	10/24/2015 17:05	WG824129
Styrene	U		0.307	1.00	1	10/24/2015 17:05	WG824129
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/24/2015 17:05	WG824129
Tetrachloroethene	U		0.372	1.00	1	10/24/2015 17:05	WG824129
Toluene	U		0.780	5.00	1	10/24/2015 17:05	WG824129
1,2,3-Trichlorobenzene	0.410	J	0.230	1.00	1	10/24/2015 17:05	WG824129
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/24/2015 17:05	WG824129
1,1,1-Trichloroethane	U		0.319	1.00	1	10/24/2015 17:05	WG824129
1,1,2-Trichloroethane	U		0.383	1.00	1	10/24/2015 17:05	WG824129
Trichloroethene	U		0.398	1.00	1	10/24/2015 17:05	WG824129
Trichlorofluoromethane	U		1.20	5.00	1	10/24/2015 17:05	WG824129
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/24/2015 17:05	WG824129
Vinyl chloride	U		0.259	1.00	1	10/24/2015 17:05	WG824129
Xylenes, Total	U		1.06	3.00	1	10/24/2015 17:05	WG824129
(S) Toluene-d8	*108*			*90.0-115*		*10/24/2015 17:05*	WG824129
(S) Dibromofluoromethane	*97.9*			*79.0-121*		*10/24/2015 17:05*	WG824129
(S) a,a,a-Trifluorotoluene	*105*			*90.4-116*		*10/24/2015 17:05*	WG824129
(S) 4-Bromofluorobenzene	*98.0*			*80.1-120*		*10/24/2015 17:05*	WG824129

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		10.0	50.0	1	10/24/2015 15:52	WG824129
Benzene	U		0.331	1.00	1	10/24/2015 15:52	WG824129
Bromochloromethane	U		0.520	1.00	1	10/24/2015 15:52	WG824129
Bromodichloromethane	U		0.380	1.00	1	10/24/2015 15:52	WG824129
Bromoform	U		0.469	1.00	1	10/24/2015 15:52	WG824129
Bromomethane	U		0.866	5.00	1	10/24/2015 15:52	WG824129
Carbon disulfide	U		0.275	1.00	1	10/24/2015 15:52	WG824129
Carbon tetrachloride	U		0.379	1.00	1	10/24/2015 15:52	WG824129
Chlorobenzene	U		0.348	1.00	1	10/24/2015 15:52	WG824129
Chlorodibromomethane	U		0.327	1.00	1	10/24/2015 15:52	WG824129
Chloroethane	U		0.453	5.00	1	10/24/2015 15:52	WG824129
Chloroform	U		0.324	5.00	1	10/24/2015 15:52	WG824129
Chloromethane	U		0.276	2.50	1	10/24/2015 15:52	WG824129
Cyclohexane	U		0.390	1.00	1	10/24/2015 15:52	WG824129
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/24/2015 15:52	WG824129
1,2-Dibromoethane	U		0.381	1.00	1	10/24/2015 15:52	WG824129
1,2-Dichlorobenzene	U		0.349	1.00	1	10/24/2015 15:52	WG824129
1,3-Dichlorobenzene	U		0.220	1.00	1	10/24/2015 15:52	WG824129
1,4-Dichlorobenzene	U		0.274	1.00	1	10/24/2015 15:52	WG824129
Dichlorodifluoromethane	U		0.551	5.00	1	10/24/2015 15:52	WG824129
1,1-Dichloroethane	U		0.259	1.00	1	10/24/2015 15:52	WG824129
1,2-Dichloroethane	U		0.361	1.00	1	10/24/2015 15:52	WG824129
1,1-Dichloroethene	U		0.398	1.00	1	10/24/2015 15:52	WG824129
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/24/2015 15:52	WG824129
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/24/2015 15:52	WG824129
1,2-Dichloropropane	U		0.306	1.00	1	10/24/2015 15:52	WG824129
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/24/2015 15:52	WG824129
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/24/2015 15:52	WG824129
Ethylbenzene	U		0.384	1.00	1	10/24/2015 15:52	WG824129
2-Hexanone	U		3.82	10.0	1	10/24/2015 15:52	WG824129
Isopropylbenzene	U		0.326	1.00	1	10/24/2015 15:52	WG824129
2-Butanone (MEK)	U		3.93	10.0	1	10/24/2015 15:52	WG824129
Methyl Acetate	U		4.30	20.0	1	10/24/2015 15:52	WG824129
Methyl Cyclohexane	U		0.380	1.00	1	10/24/2015 15:52	WG824129
Methylene Chloride	U		1.00	5.00	1	10/24/2015 15:52	WG824129
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/24/2015 15:52	WG824129
Methyl tert-butyl ether	U		0.367	1.00	1	10/24/2015 15:52	WG824129
Styrene	U		0.307	1.00	1	10/24/2015 15:52	WG824129
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/24/2015 15:52	WG824129
Tetrachloroethene	U		0.372	1.00	1	10/24/2015 15:52	WG824129
Toluene	U		0.780	5.00	1	10/24/2015 15:52	WG824129
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/24/2015 15:52	WG824129
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/24/2015 15:52	WG824129
1,1,1-Trichloroethane	U		0.319	1.00	1	10/24/2015 15:52	WG824129
1,1,2-Trichloroethane	U		0.383	1.00	1	10/24/2015 15:52	WG824129
Trichloroethene	U		0.398	1.00	1	10/24/2015 15:52	WG824129
Trichlorofluoromethane	U		1.20	5.00	1	10/24/2015 15:52	WG824129
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/24/2015 15:52	WG824129
Vinyl chloride	U		0.259	1.00	1	10/24/2015 15:52	WG824129
Xylenes, Total	U		1.06	3.00	1	10/24/2015 15:52	WG824129
(S) Toluene-d8	*105*			*90.0-115*		*10/24/2015 15:52*	WG824129
(S) Dibromofluoromethane	*95.9*			*79.0-121*		*10/24/2015 15:52*	WG824129
(S) a,a,a-Trifluorotoluene	*106*			*90.4-116*		*10/24/2015 15:52*	WG824129
(S) 4-Bromofluorobenzene	*105*			*80.1-120*		*10/24/2015 15:52*	WG824129

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	85.8		10.0	50.0	1	10/24/2015 17:23	WG824129
Benzene	U		0.331	1.00	1	10/24/2015 17:23	WG824129
Bromochloromethane	U		0.520	1.00	1	10/24/2015 17:23	WG824129
Bromodichloromethane	U		0.380	1.00	1	10/24/2015 17:23	WG824129
Bromoform	U		0.469	1.00	1	10/24/2015 17:23	WG824129
Bromomethane	U		0.866	5.00	1	10/24/2015 17:23	WG824129
Carbon disulfide	U		0.275	1.00	1	10/24/2015 17:23	WG824129
Carbon tetrachloride	U		0.379	1.00	1	10/24/2015 17:23	WG824129
Chlorobenzene	U		0.348	1.00	1	10/24/2015 17:23	WG824129
Chlorodibromomethane	U		0.327	1.00	1	10/24/2015 17:23	WG824129
Chloroethane	U		0.453	5.00	1	10/24/2015 17:23	WG824129
Chloroform	U		0.324	5.00	1	10/24/2015 17:23	WG824129
Chloromethane	U		0.276	2.50	1	10/24/2015 17:23	WG824129
Cyclohexane	U		0.390	1.00	1	10/24/2015 17:23	WG824129
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	10/24/2015 17:23	WG824129
1,2-Dibromoethane	U		0.381	1.00	1	10/24/2015 17:23	WG824129
1,2-Dichlorobenzene	U		0.349	1.00	1	10/24/2015 17:23	WG824129
1,3-Dichlorobenzene	U		0.220	1.00	1	10/24/2015 17:23	WG824129
1,4-Dichlorobenzene	U		0.274	1.00	1	10/24/2015 17:23	WG824129
Dichlorodifluoromethane	U		0.551	5.00	1	10/24/2015 17:23	WG824129
1,1-Dichloroethane	U		0.259	1.00	1	10/24/2015 17:23	WG824129
1,2-Dichloroethane	U		0.361	1.00	1	10/24/2015 17:23	WG824129
1,1-Dichloroethene	U		0.398	1.00	1	10/24/2015 17:23	WG824129
cis-1,2-Dichloroethene	U		0.260	1.00	1	10/24/2015 17:23	WG824129
trans-1,2-Dichloroethene	U		0.396	1.00	1	10/24/2015 17:23	WG824129
1,2-Dichloropropane	U		0.306	1.00	1	10/24/2015 17:23	WG824129
cis-1,3-Dichloropropene	U		0.418	1.00	1	10/24/2015 17:23	WG824129
trans-1,3-Dichloropropene	U		0.419	1.00	1	10/24/2015 17:23	WG824129
Ethylbenzene	8.54		0.384	1.00	1	10/24/2015 17:23	WG824129
2-Hexanone	U		3.82	10.0	1	10/24/2015 17:23	WG824129
Isopropylbenzene	19.2		0.326	1.00	1	10/24/2015 17:23	WG824129
2-Butanone (MEK)	U		3.93	10.0	1	10/24/2015 17:23	WG824129
Methyl Acetate	U		4.30	20.0	1	10/24/2015 17:23	WG824129
Methyl Cyclohexane	U		0.380	1.00	1	10/24/2015 17:23	WG824129
Methylene Chloride	U		1.00	5.00	1	10/24/2015 17:23	WG824129
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	10/24/2015 17:23	WG824129
Methyl tert-butyl ether	U		0.367	1.00	1	10/24/2015 17:23	WG824129
Styrene	U		0.307	1.00	1	10/24/2015 17:23	WG824129
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	10/24/2015 17:23	WG824129
Tetrachloroethene	U		0.372	1.00	1	10/24/2015 17:23	WG824129
Toluene	U		0.780	5.00	1	10/24/2015 17:23	WG824129
1,2,3-Trichlorobenzene	U		0.230	1.00	1	10/24/2015 17:23	WG824129
1,2,4-Trichlorobenzene	U		0.355	1.00	1	10/24/2015 17:23	WG824129
1,1,1-Trichloroethane	U		0.319	1.00	1	10/24/2015 17:23	WG824129
1,1,2-Trichloroethane	U		0.383	1.00	1	10/24/2015 17:23	WG824129
Trichloroethene	U		0.398	1.00	1	10/24/2015 17:23	WG824129
Trichlorofluoromethane	U		1.20	5.00	1	10/24/2015 17:23	WG824129
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	10/24/2015 17:23	WG824129
Vinyl chloride	U		0.259	1.00	1	10/24/2015 17:23	WG824129
Xylenes, Total	U		1.06	3.00	1	10/24/2015 17:23	WG824129
(S) Toluene-d8	*102*			*90.0-115*		*10/24/2015 17:23*	WG824129
(S) Dibromofluoromethane	*96.5*			*79.0-121*		*10/24/2015 17:23*	WG824129
(S) a,a,a-Trifluorotoluene	*102*			*90.4-116*		*10/24/2015 17:23*	WG824129
(S) 4-Bromofluorobenzene	*96.0*			*80.1-120*		*10/24/2015 17:23*	WG824129

Method Blank (MB)

(MB) 10/24/15 13:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	0.0500
Benzene	U		0.000331	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromochloromethane	U		0.000520	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
Carbon disulfide	U		0.000275	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
Cyclohexane	U		0.000390	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
Ethylbenzene	U		0.000384	0.00100
2-Hexanone	U		0.00382	0.0100
Isopropylbenzene	U		0.000326	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Methyl Acetate	U		0.00430	0.0200
Methyl Cyclohexane	U		0.000380	0.00100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100

Method Blank (MB)

(MB) 10/24/15 13:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Methyl tert-butyl ether	U		0.000367	0.00100
Styrene	U		0.000307	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
Toluene	U		0.000780	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*97.5*			*90.0-115*
(S) Dibromofluoromethane	*97.0*			*79.0-121*
(S) a,a,a-Trifluorotoluene	*104*			*90.4-116*
(S) 4-Bromofluorobenzene	*105*			*60.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/24/15 12:18 • (LCSD) 10/24/15 12:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.154	0.176	123	141	28.7-175			13.2	20.9
Benzene	0.0250	0.0223	0.0223	89.0	89.2	73.0-122			0.160	20
Bromodichloromethane	0.0250	0.0270	0.0251	108	100	75.5-121			7.23	20
Bromochloromethane	0.0250	0.0232	0.0234	92.8	93.5	78.9-123			0.750	20
Bromoform	0.0250	0.0284	0.0267	114	107	71.5-131			6.27	20
Bromomethane	0.0250	0.0257	0.0254	103	102	22.4-187			1.25	20
Carbon disulfide	0.0250	0.0238	0.0244	95.3	97.8	53.0-134			2.55	20
Carbon tetrachloride	0.0250	0.0252	0.0256	101	102	70.9-129			1.43	20
Chlorobenzene	0.0250	0.0263	0.0248	105	99.1	79.7-122			5.85	20
Chlorodibromomethane	0.0250	0.0272	0.0265	109	106	78.2-124			2.73	20
Chloroethane	0.0250	0.0255	0.0260	102	104	41.2-153			2.16	20
Chloroform	0.0250	0.0242	0.0244	97.0	97.7	73.2-125			0.700	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/24/15 12:13 • (LCSD) 10/24/15 12:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	0.0250	0.0212	0.0205	84.7	82.1	55.8-134			3.23	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0260	0.0279	104	112	64.8-131			6.96	20
1,2-Dibromoethane	0.0250	0.0261	0.0247	104	98.8	79.8-122			5.33	20
1,2-Dichlorobenzene	0.0250	0.0250	0.0254	100	102	84.7-118			1.56	20
1,3-Dichlorobenzene	0.0250	0.0269	0.0255	108	102	77.6-127			5.21	20
1,4-Dichlorobenzene	0.0250	0.0248	0.0238	99.3	95.1	82.2-114			4.26	20
Dichlorodifluoromethane	0.0250	0.0251	0.0244	101	97.7	56.0-134			2.86	20
1,1-Dichloroethane	0.0250	0.0235	0.0234	93.9	93.7	71.7-127			0.140	20
1,2-Dichloroethane	0.0250	0.0257	0.0266	103	106	79.8-122			3.27	20
1,1-Dichloroethene	0.0250	0.0259	0.0269	104	107	59.9-137			3.60	20
cis-1,2-Dichloroethene	0.0250	0.0221	0.0228	88.2	91.2	77.3-122			3.37	20
trans-1,2-Dichloroethene	0.0250	0.0226	0.0236	90.4	94.5	72.6-125			4.52	20
1,2-Dichloropropane	0.0250	0.0249	0.0238	99.7	95.3	77.4-125			4.49	20
cis-1,3-Dichloropropene	0.0250	0.0258	0.0242	103	96.9	77.7-124			6.39	20
trans-1,3-Dichloropropene	0.0250	0.0275	0.0264	110	106	73.5-127			4.05	20
Ethylbenzene	0.0250	0.0267	0.0250	107	99.9	80.9-121			6.85	20
2-Hexanone	0.125	0.147	0.153	118	122	59.4-151			3.90	20
Isopropylbenzene	0.0250	0.0269	0.0258	108	103	81.6-124			4.17	20
2-Butanone (MEK)	0.125	0.120	0.135	96.2	108	46.4-155			11.3	20
Methylene Chloride	0.0250	0.0220	0.0225	88.0	90.1	69.5-120			2.34	20
4-Methyl-2-pentanone (MIBK)	0.125	0.122	0.128	97.3	103	63.3-138			5.46	20
Methyl tert-butyl ether	0.0250	0.0229	0.0240	91.7	96.1	70.1-125			4.76	20
Styrene	0.0250	0.0270	0.0252	108	101	79.9-124			6.96	20
1,1,2,2-Tetrachloroethane	0.0250	0.0258	0.0254	103	102	79.3-123			1.41	20
Tetrachloroethene	0.0250	0.0269	0.0250	108	99.8	73.5-130			7.47	20
Toluene	0.0250	0.0234	0.0229	93.5	91.5	77.9-116			2.19	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0255	0.0259	102	104	62.0-141			1.34	20
1,2,3-Trichlorobenzene	0.0250	0.0265	0.0262	106	105	75.7-134			0.920	20
1,2,4-Trichlorobenzene	0.0250	0.0276	0.0274	110	110	76.1-136			0.600	20
1,1,1-Trichloroethane	0.0250	0.0254	0.0263	102	105	71.1-129			3.20	20
1,1,2-Trichloroethane	0.0250	0.0264	0.0255	106	102	81.6-120			3.73	20
Trichloroethene	0.0250	0.0253	0.0251	101	100	79.5-121			0.740	20
Trichlorofluoromethane	0.0250	0.0271	0.0272	108	109	49.1-157			0.140	20
Vinyl chloride	0.0250	0.0258	0.0257	103	103	61.5-134			0.420	20
Xylenes, Total	0.0750	0.0788	0.0730	105	97.3	79.2-122			7.66	20
(S) Toluene-d8				*104*	*101*	*90.0-115*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/24/15 12:18 • (LCSD) 10/24/15 12:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Dibromofluoromethane				95.6	98.0	79.0-121				
(S) a,a,a-Trifluorotoluene				104	101	90.4-116				
(S) 4-Bromofluorobenzene				103	102	80.1-120				

L795740-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/24/15 16:10 • (MS) 10/24/15 14:37 • (MSD) 10/24/15 14:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.188	0.743	0.647	88.9	73.4	5	25.0-156			13.9	21.5
Benzene	0.0250	0.151	0.234	0.227	66.2	60.8	5	58.6-133			2.95	20
Bromodichloromethane	0.0250	ND	0.131	0.130	105	104	5	69.2-127			1.06	20
Bromochloromethane	0.0250	ND	0.111	0.118	88.6	94.6	5	74.4-128			6.54	20
Bromoform	0.0250	ND	0.126	0.127	101	102	5	66.3-140			0.590	20
Bromomethane	0.0250	ND	0.127	0.125	102	100	5	16.6-183			1.58	20.5
Carbon disulfide	0.0250	0.000443	0.121	0.122	96.3	97.6	5	34.9-138			1.31	20
Carbon tetrachloride	0.0250	ND	0.133	0.130	106	104	5	60.6-139			2.08	20
Chlorobenzene	0.0250	ND	0.129	0.124	103	99.5	5	70.1-130			3.56	20
Chlorodibromomethane	0.0250	ND	0.131	0.131	105	105	5	71.6-132			0.190	20
Chloroethane	0.0250	ND	0.129	0.133	104	107	5	33.3-155			2.91	20
Chloroform	0.0250	ND	0.124	0.127	98.8	102	5	66.1-133			2.70	20
Chloromethane	0.0250	ND	0.107	0.107	85.8	85.2	5	40.7-139			0.710	20
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.122	0.121	97.5	97.0	5	63.9-142			0.510	20.2
1,2-Dibromoethane	0.0250	ND	0.119	0.120	95.2	96.3	5	73.8-131			1.21	20
1,2-Dichlorobenzene	0.0250	ND	0.125	0.130	100	104	5	77.4-127			4.03	20
1,3-Dichlorobenzene	0.0250	ND	0.135	0.134	108	107	5	67.9-136			0.620	20
1,4-Dichlorobenzene	0.0250	ND	0.124	0.125	99.0	100	5	74.4-123			1.33	20
Dichlorodifluoromethane	0.0250	ND	0.128	0.127	103	102	5	42.2-146			0.980	20
1,1-Dichloroethane	0.0250	ND	0.115	0.121	92.0	96.4	5	64.0-134			4.66	20
1,2-Dichloroethane	0.0250	ND	0.125	0.130	99.7	104	5	60.7-132			4.11	20
1,1-Dichloroethene	0.0250	ND	0.137	0.137	110	109	5	48.8-144			0.230	20
cis-1,2-Dichloroethene	0.0250	ND	0.113	0.119	90.3	95.1	5	60.6-136			5.15	20
trans-1,2-Dichloroethene	0.0250	ND	0.115	0.116	92.4	92.6	5	61.0-132			0.250	20
1,2-Dichloropropane	0.0250	ND	0.124	0.121	99.4	96.6	5	69.7-130			2.80	20
cis-1,3-Dichloropropene	0.0250	ND	0.124	0.126	99.0	101	5	71.1-129			1.51	20
trans-1,3-Dichloropropene	0.0250	ND	0.134	0.133	108	106	5	66.3-136			1.08	20

L795740-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/24/15 16:10 • (MS) 10/24/15 14:37 • (MSD) 10/24/15 14:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	0.0250	0.878	0.862	0.776	0.000	0.000	5	62.7-136	V	V	10.6	20
2-Hexanone	0.125	ND	0.607	0.569	97.1	91.1	5	59.4-154			6.36	20.1
Isopropylbenzene	0.0250	0.115	0.228	0.214	90.6	79.0	5	67.4-136			6.58	20
2-Butanone (MEK)	0.125	ND	0.529	0.507	84.6	81.1	5	45.0-156			4.29	20.8
Methylene Chloride	0.0250	ND	0.101	0.111	81.2	89.1	5	61.5-125			9.29	20
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.551	0.552	88.2	88.2	5	60.7-150			0.0700	20
Methyl tert-butyl ether	0.0250	ND	0.104	0.113	82.8	90.5	5	61.4-136			8.89	20
Styrene	0.0250	ND	0.131	0.132	105	105	5	68.2-133			0.100	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.117	0.121	93.9	96.9	5	64.9-145			3.07	20
Tetrachloroethene	0.0250	ND	0.132	0.132	106	106	5	57.4-141			0.0300	20
Toluene	0.0250	0.0191	0.137	0.133	94.4	91.2	5	67.8-124			2.97	20
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.128	0.133	103	107	5	53.7-150			3.76	20
1,2,3-Trichlorobenzene	0.0250	ND	0.132	0.133	106	107	5	65.7-143			0.860	20
1,2,4-Trichlorobenzene	0.0250	ND	0.145	0.148	116	119	5	67.0-146			2.10	20
1,1,1-Trichloroethane	0.0250	ND	0.133	0.133	106	107	5	62.8-138			0.220	20
1,1,2-Trichloroethane	0.0250	ND	0.123	0.124	98.5	99.6	5	74.1-130			1.04	20
Trichloroethene	0.0250	ND	0.127	0.126	102	101	5	48.9-148			0.800	20
Trichlorofluoromethane	0.0250	ND	0.136	0.137	109	109	5	39.9-165			0.540	20
Vinyl chloride	0.0250	ND	0.130	0.133	104	107	5	44.3-143			2.30	20
Xylenes, Total	0.0750	0.424	0.755	0.721	88.1	79.0	5	65.6-133			4.62	20
(S) Toluene-d8					*105*	*103*		*90.0-115*				
(S) Dibromofluoromethane					*94.8*	*96.5*		*79.0-121*				
(S) a,a,a-Trifluorotoluene					*106*	*107*		*90.4-116*				
(S) 4-Bromofluorobenzene					*102*	*103*		*80.1-120*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

Cp
Tc
Ss
Cn
Sr
Qc
GI
Al
Sc

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [**] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**

GHD 285 Delaware Ave. Suite 500 Buffalo, NY 14202	Billing Information: Mr. Dave Rowlinson 285 Delaware Ave. Suite 500 Buffalo, NY 14202	Chain of Custody Page ___ of ___ ESC LABORATORIES YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859
Report to: Mr. Dave Rowlinson	Email To: dave.rowlinson@ghd.com	
Project Description: 815 River Road Site — Groundwater Sampling	City/State Collected: North Tonawanda, NY	
Phone: 716-748-5624 Fax: (716) 748-6621	Client Project # Lab Project # STEARNSANY-RIVERRD	L# 745140 C222
Collected by (print): Brian Doyle	Site/Facility ID # N. TONAWANDA, NY	P.O. #
Collected by (signature): Brian P. Doyle Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ....200% ___ Next Day ....100% ___ Two Day ....50% ___ Three Day 25%	Date Results Needed Email? ___No X_Yes FAX? ___No ___Yes
		Acctnum: STEARNSANY Template: T80569 Prelogin: P527928 TSR: 364 - T. Alan Harvill PB: Shipped Via: FedEx Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260TCL 40mlAmb-HCl	V8260TCL 40mlAmb-HCl-Blk	Pres./Contaminant	Sample # (lab only)
MW-1		GW		10/20/15	14:30	2	X			-01
MW-2		GW		10/20/15	15:00	2	X			-02
TRIP BLANK		GW				1		X		-03
FD @ MW-1		GW		10/20/15	14:30	2	X			-04
MS @ MW-2		GW		10/20/15	15:00	2	X			-05
MSD @ MW-2		GW		10/20/15	15:00	2	X			-06
		GW				2	X			
		GW				2	X			

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

Remarks: Please call GHD @ (716) 242-6920, prior to analyzing MS/MSD samples.

pH ___ Temp ___

Flow ___ Other ___

Hold #

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Brian P. Doyle	10/20/15	15:30	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ___

Temp: 3.2 °C Bottles Received: 11 + VP

Date: 10/21/15 Time: 900

Condition: (lab use only) GOOD

COC Seal Intact: ✓ Y ___N ___NA

pH Checked: NCF:

6529 1899 6490

APPENDIX C

DATA USABILITY REPORTING

Data Usability Summary Report

Vali-Data of WNY, LLC
1514 Davis Rd.
West Falls, NY 14170

815 River Rd.
ESC laboratory Sciences SDG#L795740
November 12, 2015
Sampling date: 10/20/2015

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
1514 Davis Rd.
West Falls, NY 14170

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for GHD, project located in the 815 River Rd., SDG#L795740, ESC Laboratory Sciences, submitted to Vali-Data of WNY, LLC on November 3, 2015. This DUSR has been prepared in general compliance with NYSDEC Analytical Services Protocol and USEPA National Functional Guidelines. The laboratory performed the analyses using USEPA methods, 8260B (Volatile Organics).

VOLATILE ORGANIC COMPOUNDS

The following items/criteria were reviewed for this analytical suite:

-Data Completeness
-Narrative and Data Reporting Forms
-Chain of Custody and Traffic Reports
-Holding Times
-Internal Standard (IS) Area Performance
-Surrogate Spike Recoveries
-Method Blank
-Field Duplicate Sample Precision
-Laboratory Control Samples
-MS/MSD
-Compound Quantitation
-Initial Calibration
-Continuing Calibration
-GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES
The data are acceptable for use but are qualified below in MS/MSD.

DATA COMPLETENESS
All criteria were met.

NARRATIVE AND DATA REPORTING FORMS
All criteria were met. The MDL's are recorded on the 'Report of Analysis'. Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS
All criteria were met.

HOLDING TIMES
All holding times were met.

INTERNAL STANDARD (IS)
All criteria were met.

SURROGATE SPIKE RECOVERIES
All criteria were met.

METHOD BLANK
All criteria were met.

FIELD DUPLICATE SAMPLE PRECISION
All criteria were met except 1,2,3-Trichlorobenzene was detected above the MDL, below the reporting limit in MW-1 but not in FD at MW-1.

LABORATORY CONTROL SAMPLES
All criteria were met.

MS/MSD
All criteria were met except the %Rec of Benzene and Ethyl benzene was outside QC limits, low in MW-2MS/MSD and should be qualified as estimated in MW-2 and MW-2MS/MSD.

COMPOUND QUANTITATION
All criteria were met.

INITIAL CALIBRATION
All criteria were met.
Alternate forms of regression were used on target analytes in which the RSD was <15% with acceptable results.

CONTINUING CALIBRATION
All criteria were met.

GC/MS PERFORMANCE CHECK
All criteria were met.

APPENDIX D

INSTITUTIONAL & ENGINEERING CONTROLS CERTIFICATION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation
625 Broadway, 11th Floor, Albany, NY 12233-720
P: (518)402-9543 | F: (518)402-9547
www.dec.ny.gov

2/5/2016

Dale Marshall
City Engineer
City of North Tonawanda
216 Payne Ave
North Tonawanda, NY 14120-5493

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal
Site Name: 815 River Road Investigation
Site No.: B00178
Site Address: 815 River Road
North Tonawanda, NY 14120

Dear Mr. Marshall:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at http://www.dec.ny.gov/regulations/67386.html) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **April 29, 2016**. Guidance on the content of a PRR is enclosed.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional controls and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form (Box 6) must be signed by you or your designated representative. If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.

All site-related documents and data, including the PRR, are to be submitted in electronic format to the Department of Environmental Conservation. The Department will not approve the PRR unless all documents and data generated in support of that report have been submitted in accordance with the electronic submissions protocol. In addition, the certification forms are required to be submitted in both paper and electronic formats.

Information on the format of the data submissions can be found at:
http://www.dec.ny.gov/regulations/2586.html

The signed certification forms should be sent to Brian Sadowski, Project Manager, at the following address:

New York State Department of Environmental Conservation
270 Michigan Ave
Buffalo, NY 14203-2915

Phone number: 716-851-7220. E-mail: brian.sadowski@dec.ny.gov

The contact information above is also provided so that you may notify the project manager about upcoming inspections, or for any other questions or concerns that may arise in regard to the site.

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures
Brian Sadowski, Project Manager
Chad Staniszewski, Hazardous Waste Remediation Engineer, Region 9
David Rowlinson, GHD

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **B00178**

Site Name **815 River Road Investigation**

Site Address: 815 River Road Zip Code: 14120
City/Town: North Tonawanda
County: Niagara
Site Acreage: 0.9

Reporting Period: December 30, 2014 to March 30, 2016

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☐

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

SITE NO. B00178

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
181.12-1-19	Metzger Removal, Inc.	Ground Water Use Restriction Site Management Plan Soil Management Plan Monitoring Plan Landuse Restriction IC/EC Plan

An Environmental Easement was filed with the Niagara County Clerk's Office on November 17, 2014. The Controlled Property may be used for commercial and industrial use as long as the following long-term institutional controls are employed: (1) restrict the use of site groundwater as a source of potable or process water without necessary water quality treatment as determined by the NYSDOH or Niagara County Department of Health; (2) all future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the Site Management Plan; and (3) monitoring to assess the performance and effectiveness of the remedy must be conducted as defined in the Site management Plan.

Box 4

Description of Engineering Controls

None Required

Not Applicable/No EC's

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative — Date

IC CERTIFICATIONS
SITE NO. B00178

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Dale W. Marshall (print name) at 216 Payne Ave, N. Tonawanda NY 14120 (print business address)

am certifying as City Engineer (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Dale W. Marshall
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

2/5/16
Date

IC/EC CERTIFICATIONS

Box 7

Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Paul J. McGarvey at 285 Delaware Ave, Buffalo, NY 14202
print name print business address

am certifying as a for the Owner
(Owner or Remedial Party)

STATE OF NEW YORK
PAUL JAMES McGARVEY
073641
LICENSED PROFESSIONAL ENGINEER

Paul J. McGarvey 2/12/16

Signature of , for the Owner or Remedial Party, Rendering Certification | Stamp (Required for PE) | Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.