NYSEG – Elmira Water St. MGP Site

Chemung COUNTY

City of Elmira, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 808025

Prepared for:

New York State Electric & Gas

18 Link Drive

Binghamton, New York 13902-5224

Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

NOVEMBER 2024

CERTIFICATION STATEMENT

I DANIEL KOPCOW certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

_____ P.E.

11/19/2024
_____DATE

TABLE OF CONTENTS

Section Description Page

TABLE OF CONTENTS (CONTINUED)

List of Tables

List of Figures

List of Appendices

LIST OF ACRONYMS

AWQS	Ambient Water Quality Standards
bgs	Below ground surface
BTEX	Benzene, Toulene, Ethylene, Xyelne
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
CMP	Corrugated Metal Pipe
COC	Certificate of Completion/Constituent of Concern /Contaminant of Concern
CP	Commissioner Policy
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
ESA	Environmental Site Assessment
EWP	Excavation Work Plan
FER	Final Engineering Report
FPP	Flood Protection Project
FWIA	Fish and Wildlife Impact Assessment
GEI	GEI Consultants, Inc. P.C.
GGBFS	Ground Granulated Blast Furnace Slab
GHG	Greenhouse Gas
HASP	Health and Safety Plan
HDPE	High-density polyethylene
IC	Institutional Control
MGP	Manufactured Gas Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDPW	New York State Department of Public Works
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSEG	New York State Electric and Gas
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PDI	Pre-Design Investigation
P.E. or PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PPB	Parts per Billion
PPM	Parts per Million
PPT	Parts per Trillion
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control

QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RI/FS	Remedial Investigation/Feasibility Study
RD	Remedial Design
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

ES - EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification:	# 808025; NYSEG – Elmira Water St. MGP Site; 510 East Water Street, City of Elmira, New York.
Institutional Controls:	1. The property may be used for Commercial use.
	2. Selected remedy requires imposition of ICs in the form on an Environmental Easement.
	3. ECs must be operated and maintained as specified in this SMP.
	4. ECs must be inspected at a frequency and in a manner defined in the SMP.
	5. NYSEG to complete and submit to the NYSDEC a periodic certification of ICs and ECs in accordance with Part 375-1.8(h)(3) and the ROD.
	6. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chemung County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
	7. Groundwater monitoring must be performed as defined in this SMP.
	8. Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP.
	9. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP.
	10. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP.

Site Identification:	# 808025; NYSEG – Elmira Water St. MGP Site; 510 East Water Street, City of Elmira, New York.	
	11. Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.	
	12. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on the IC/EC figure, and any potential impacts that are identified must be monitored or mitigated.	
	13. Vegetable gardens and farming on the Site are prohibited.	
	14. An evaluation shall be performed to assess the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.	
Engineering Controls	1. Cover system	
Inspections:		Frequency
1. Site-wide Inspection / Cover inspection		Annually
Monitoring:		
1. Groundwater Monitoring Wells MW1, MW2R, MW3, MW4, MW5, MW-6, MW7, MW8 2. Groundwater gauging and NAPL (if present) gauging		Quarterly for first two (2) years; then reevaluate frequency
Maintenance:		
1. Cover system		As needed
2. Monitoring well network		As needed
Reporting:		
1. Inspection Report		Annually

Site Identification:	# 808025; NYSEG – Elmira Water St. MGP Site; 510 East Water Street, City of Elmira, New York.
2. Post-Remediation Groundwater Monitoring Progress Report	Annually
3. Periodic Review Report	Annually, or as otherwise determined by the NYSDEC

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

This document is required as an element of the remedial program at the Elmira Water Street Former Manufactured Gas Plant (MGP) Site under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The Elmira Water Steet Former MGP Site was remediated by the New York State Electric & Gas Corporation (NYSEG) in accordance with the Order on Consent (Index # DO-0002-9309), the Elmira Water Street Record of Decision (ROD, NYSDEC 2017), the NYSDEC-approved Elmira Water Street Remedial Design (RD, GEI Consultants, Inc. 2021). The Site is listed on NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 Site (NYSDEC Site #8-08-025).

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the NYSEG Elmira Water St. MGP Site located in the City of Elmira, New York (hereinafter referred to as the "Site"). The Site location is shown on Figure 1, and the site boundaries are shown on Figure 2. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement provided in Appendix D.

After completion of the remedial work, limited contamination was left at this Site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the Site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC and recorded with the Chemung County Clerk, requires compliance with this SMP and all ECs and ICs placed on the Site.

This SMP was prepared to manage remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the

grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC); and
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Order on Consent, (Index #DO-0002-9309; Site #80-8-025) for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the Site is provided in Appendix A of this SMP.

This SMP was prepared by GEI Consultants, Inc., P.C. (GEI) on behalf of NYSEG, in general accordance with the requirements of the NYSDEC's DER-10 "Technical Guidance for Site Investigation and Remediation", dated May, 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the Institutional Controls and Engineering Controls that are required by the Environmental Easement for the Site.

1.2 Revisions and Alterations

Revisions and alterations to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the Site conditions. All approved alterations must conform with Article 145 Section 7209 of the Education Law regarding the application of professional

seals and alterations. For example, any changes to as-built drawings must be stamped by a New York State Professional Engineer. In accordance with the Environmental Easement for the Site, the NYSDEC project manager will provide a notice of any approved changes to the SMP and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

1. 60-day advance notice of any proposed changes in Site use that are required under the terms of the Order on Consent, 6 NYCRR Part 375 and/or Environmental Conservation Law.
2. 7-day advance notice of any field activity associated with the remedial program.
3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.
4. Notice within 48 hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
5. Notice within 48 hours of any non-routine maintenance activities.
6. Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
7. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

8. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP.

9. Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 on the following page includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix A

Table 1: Notifications*

Name	**Contact Information**	**Required Notification****
NYSDEC Bureau Director Sarah Saucier	518-402-9675 sarah.saucier@dec.ny.gov	All Notifications
NYSDEC Project Manager's Supervisor Kerry Maloney	518-402-9629 Kerry.maloney@dec.ny.gov	All Notifications
NYSDEC Project Manager Caroline Jalanti	518-402-9650 Caroline.jalanti@dec.ny.gov	All Notifications
NYSDEC Site Control Kelly Lewandowski	518-402-9569 kelly.lewandowski@dec.ny.gov	Notifications 1 and 8
NYSDEC Flood Control Jim Lynch, P.E.	607-732-2214 Jim.lynch@dec.ny.gov	Notifications 1, 2, 4, 6, and 8
NYSDOH Project Manager James Sullivan	518-402-5584 jim.sullivan@health.ny.gov	Notifications 4, 6, and 7

* Note: Notifications are subject to change and will be updated as necessary.

** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

The following sections provide a concise description of the location and layout of the site, areas of remaining contamination, remedial activities performed on-site, site history, and the nature and extent of contamination before and after the remedy.

2.1 Site Location and Description

The Site is located at 510 East Water Street in the city of Elmira, Chemung County, New York and is identified as Section 89.20 Block 3 and Lot 9 on the Chemung County Tax Map (Appendix D). The Site is situated on south side of East Water Street near the intersection of Dewitt Street. The Site has an area of approximately 1-acre, and is bounded by East Water Street to the north, City of Elmira property and the Chemung River to the south, Melvin Place to the east, and the Sly Street bridge to the west (Figure 2) . The area immediately to the east and west of the Site are additional parcels owned by NYSEG which are vacant and partially paved. The boundaries of the Site are more fully described in the Environmental Easement provided in Appendix D. At the time of development of the SMP, the Owners of the tax parcels comprising the Site are NYSEG, therefore making this an owned site.

2.2 Physical Setting

2.2.1 Land Use

The Site is approximately 1 acre and is currently vacant. In the northern portion of the Site, the ground surface is covered by an asphalt parking lot. The Site is surrounded to the south, east, and west by grass-covered areas. The southern portion of the Site is bisected by a flood control levee constructed along the bank of the Chemung River. The levee is comprised of a concrete flood/retaining wall, an interceptor sewer, earth embankment, and an access road. The floodwall is located near the embankment crest, and then the embankment slopes to south to the access road/bench, which is approximately 20 feet north of the shoreline of the river.

The properties adjoining the Site, and in the neighborhood surrounding the Site, primarily include commercial, residential, and industrial properties. The properties immediately south of the Site include the flood protection structures and the Chemung River; and the properties north, west, and east of the Site include residential and commercial properties. The Site is zoned for commercial land use and is currently vacant. The Chemung County Nursing facility and Elmira Housing Authority housing complex are located on the north side of East Water Street.

2.2.2 Geology

A layer of fill material was observed at the majority of the soil borings installed in and around the former MGP operation areas. Underlying the fill is a thick alluvial deposit of comprised of a heterogeneous mix of silt, sand, and gravel. Interbedded within the alluvium are lenses of lacustrine clay. Shale (bedrock) was encountered at a depth of approximately 82 feet.

Information regarding the geology of the Site was obtained from the Remedial Investigation (GEI Consultants, Inc. 2014) and Pre-Design Investigation (PDI, GEI Consultants, Inc. 2018) test pit, soil boring, and well installation tasks. The stratigraphic units identified during the RI, shown on Figure 3, are described as follows:

- **Fill** - At the majority of the soil boring locations in and around the MGP process area, a layer of fill containing anthropogenic materials was observed. The fill was thickest (approximately 15 feet thick) near the Gas Holder foundation. The fill material was observed to consist mostly of sand and gravel, mixed with varying amounts of brick fragments, clinkers, ash, and coal.

- **Alluvium** - Underlying the fill is a thick deposit of alluvium comprised of a heterogeneous mix of silt, sand, and gravel. At the Site, one soil boring was advanced down to the bedrock to observe the depth to bedrock and to observe deep soil conditions. The sampling performed at this location indicates that the alluvium is approximately 80 feet thick.

- **Lacustrine Clay** - Inter-bedded within the alluvium are lenses of lacustrine clay. The lenses of clay do not appear to be laterally continuous within the alluvium across the Site. However, the clay may be continuous beneath the Gas Holder

foundation as observed in the soil borings advanced in this area during the RI (Figure 3).

- **Bedrock** - Shale was encountered beneath the alluvium at a depth of about 82 feet in the former MGP process area.

A geologic cross section is shown in Figure 3. Site specific boring logs are provided in Appendix E.

2.2.3 Hydrogeology

Surface water in the asphalt-surfaced area of the Site and in East Water Street, drains into a series of catch basins. The water then drains into a 60-inch-diameter corrugated pipe and then into "Manhole P" located in the footprint of the former Dewitt Street. Flow was historically diverted to the Chemung River from Manhole P. However, the outfall pipe from Manhole P was abandoned in 1947 when the flood control project was implemented, and today, surface water is collected and managed within the City's storm drainage system.

Surface water from the Site, and from other locations within the City of Elmira to the east currently flows within the interceptor sewer. The outfall to the Chemung River is located approximately 0.5 mile to the east of the Site.

To further understand the construction of the interceptor sewer, GEI contacted staff at the NYSDEC FPP office in Elmira, NY. The NYSDEC located a drawing in the Elmira FPP O&M Manual that indicates the interceptor sewer is a corrugated metal pipe (CMP). Based on information provided by the NYSDEC, the pipe is 84-inches in diameter from west of the Madison Avenue Bridge, eastward to the former Dewitt Avenue. East of Dewitt Avenue the pipe appears to be a 96-inch diameter CMP. It appears that the diameter change occurs near FPP Station 24+00, which is near the former Dewitt Avenue (when Dewitt was also on the southside of East Water Street). Therefore, the pipe section closest to the remedial area is an 84-inch diameter CMP.

Groundwater Flow and Gradient

Depth-to-water measurements were collected during the RI at the on-Site wells, and temporary well points adjacent to the river. The depth to the water table was observed to range from between 6 feet at the flood control access road area adjacent to the Chemung River, and 16 feet at the Site in the Gas Holder area. Based on the measurements obtained from the wells, and the measurement obtained for a surface water elevation reference point, the surface of the water table slopes from the north at the East Water Street area, towards the south towards the Chemung River. The Site's water level elevation is largely consistent throughout the Site.

A groundwater contour map is shown in Figure 4. Groundwater elevation data is provided in Table 4 – Monitoring Well Construction Details & Groundwater Elevation Measurements. Groundwater monitoring well construction logs are provided in Appendix E.

2.3 Site History and Ownership

The Elmira Water Street MGP was constructed in 1852 by the Elmira Gas Light Company on the Site. The Elmira Gas Light Company became part of NYSEG through several mergers or acquisitions. The MGP was constructed and operated as a coal carbonization plant until 1867 when operation ceased. The facility continued to be used as gas storage facility until 1869. Prior to 1898, the above grade portion of the gas holder was demolished. The shoreline along the Chemung River at the time of MGP operations was significantly different than the current shoreline. From the period of MGP operations until the present, fill has been added to expand the shoreline approximately 50 feet to the south. The shoreline was expanded in two phases to control flooding in the area culminating in the construction of the existing floodwall and embankment in 1948-1949.

More recently, the Site was the location of the former Hartman Lincoln Mercury auto dealership and repair shop which operated until 1987. The dealership and repair shop structures were demolished around 1988.

2.3.1 Previous Investigations and Remedial History

In 1992, a Site Prioritization Report was performed by Engineering Science (ES) of Liverpool, New York, on behalf of NYSEG, with the results summarized in the report entitled "*Prioritization of Former Manufactured Gas Plant Site – Elmira-Water Street Site,"* dated March 1992, a summarization of which can be found in the RI Report (RIR). The Site Prioritization report included a brief history of the Site, a description of the prioritization program, a recommended Site ranking, and a summary of surface water and sediment sampling performed during the investigation. The significant findings for the Prioritization Report included the identification of the operational period of the MGP which was reported from 1852 to at least 1869 based on land ownership (deed) records. No imminent threats were identified in the report based on the surface water and sediment sample analyses, and because the Site was observed to be completely paved or occupied by structures. The results of the chemical analyses for the samples collected by ES in 1992 are included in the RI.

In 1998, A Phase II ESA was performed for Hartman Lincoln Mercury, Inc., by Buck Engineering Services (Buck) of Cortland, New York. The results were provided in the document entitled "*Phase II Environmental Site Assessment, Former Hartman Lincoln Mercury, Inc. Property, 510 East Water Street, Elmira, New York*," dated June 1998, a summary of which is available in the 2014 RI. The Buck ESA included a review of historical information for the property. The review indicated that the Site was the location of several commercial facilities; the most recent facility was an automobile dealership that included automotive repair and body repair. The automobile dealership building had been demolished at the time of the ESA. The ESA identified the past presence of flood drains and dry wells at the Site which had been closed by the previous Site operator, with impacted soil from the dry well closures excavated and disposed of offsite. Floor drains located in the former dealership had been connected to the municipal sewer system.

Buck identified a 5,000-gallon underground fuel oil storage tank located in the central area of the facility. Buck observed the removal of the tank and collected excavation bottom samples.

Six in-ground hydraulic lifts were identified in the former automotive repair building. Buck observed the removal of the lifts and then collected excavation bottom samples. Eight excavation bottom soil samples were analyzed following the removal of the lifts. The ESA also identified four underground petroleum storage tanks in the former automobile dealership building area. Gasoline was removed from the tanks and the tanks were excavated and removed from the Site. Impacted soil beneath the tanks was not identified. Buck collected soil samples from the bottom of the excavation.

Buck also performed an assessment of groundwater quality at the Site. Six locations were sampled for groundwater using a direct-push drill rig and temporary well points and analyzed for VOCs. VOCs were not detected in the groundwater samples. Eight groundwater monitoring wells were installed, and eight groundwater samples analyzed. Five groundwater samples were collected from temporary well points installed in soil borings adjacent to the river.

Buck reviewed the available historical information for the Site and identified the former use of the Site for MGP operations. Soil borings were then advanced at the property to assess the presence or absence of MGP-related residuals. One boring advanced inside the Gas Holder foundation identified MGP-impacted soil near the base of the Holder foundation. The results of the analyses performed during the Buck ESA are summarized in the 2014 RIR.

Following NYSEG's purchase of the Site in 1998, the property was leased to a tenant (Simmons-Rockwell, Inc.) who used the property as an auto sales lot. The tenant requested that new light poles and electrical conduit be installed at the Site. In 2006, NYSEG prepared a work plan document entitled "*Work Plan for Management of Coal Tar Impacted Soil, Elmira Water Street Former Manufactured Gas Plant Site, Elmira, New York*," dated October 11, 2006, and summarized in the RI. The Work Plan was approved by the NYSDEC prior to the excavation activities at the Site.

Perimeter air monitoring was performed during the excavation activities for the installation of the electrical conduit and light poles at the Site. The results were presented

in the document prepared by Fagan Engineers of Elmira, New York entitled "*Perimeter Air Monitoring – Fugitive Dust – Volatile Organic Compounds – Underground Electric Installation Project, Former NYSEG Manufactured Gas Plant Site, Southeast Corner of Water Street and Madison Avenue, City of Elmira, Chemung County, New York*," dated November 2006 and summarized in the 2014 RI.

The NYSEG Work Plan identified procedures that would be implemented if impacted soil was encountered in the utility line excavations. No visible evidence of MGP-related residuals was identified in the excavations, therefore, no soil was excavated or removed from the Site.

In 2014, GEI Consultants, Inc. completed the RI and documented the findings in the RIR. The RI was performed to obtain data to assess the nature and extent of the MGP-related residuals at the Site and adjacent offsite areas, and to evaluate the potential for human and ecological receptors to be exposed to those residuals.

The investigation of the Site was conducted pursuant to a Multi-Site Order on Consent between NYSEG and the NYSDEC, and a set of Work Plans that were approved by the NYSDEC and the New York State Department of Health (NYSDOH).

Based on the age of the plant, and the available historical information, the RI determined that gas was produced using a coal carbonization process using coal as a feedstock. The MGP-related residuals or by-products from this process consisted primarily of coal tar and emulsions of coal tar nonaqueous phase liquid (NAPL) and spent oxide or lime materials which were residuals from the gas purification process. These residuals potentially contained potentially harmful constituents of concern (COC), including VOCs, benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX), and a more general class of organic compounds known as polycyclic aromatic hydrocarbons (PAHs), metals and cyanide.

RI activities conducted in 2013 and 2014 included: a land use survey, the identification and mapping of subsurface utilities, the collection of 12 surface soil samples, the excavation of six test pits and the analysis of seven soil samples from the test pit excavations, the advancement of 37 subsurface soil borings and the analysis of 73 soil samples from the borings. Three surface water samples were collected from the Chemung River. Systematic probing of sediments was performed in the river adjacent to

the Site, and also at the nearest potential downstream depositional area. Ten surface sediment samples were collected from locations upstream of the Site. Twenty-seven surface sediment samples and six deeper vibracore samples were collected from the river adjacent to the Site.

Information regarding the geology of the Site was obtained during the test pit, soil boring, and well installation tasks. The RI characterized the subsurface strata down to a depth of approximately 80 feet.

Eight permanent monitoring wells and five temporary wells were installed in the overburden to measure groundwater level and assess groundwater quality. The depth to the water table in the former MGP gas production area was approximately 16 feet, and the depth to the water table in the access roadway area along the Chemung River was approximately 6 feet. The flow direction for groundwater in the overburden is from the north to the south, towards the Chemung River.

Visible evidence of MGP-related residuals was not observed at the ground surface of the investigation area. Twelve surface soil samples were collected during the RI. The samples were collected from the grass-covered area south of the paved parking lot, from the grass covered, levee embankment, and from the shoreline area adjacent to the Chemung River. The RI documented that these samples were collected from soil that was likely imported to the Site during levee construction.

A circular gas holder with a radius of approximately 40 feet and a depth of approximately 17.5 feet was discovered in the northeast portion of the Site during the remedial investigation. The primary contaminants of concern (COC) at the Site were PAHs, benzene, toluene, ethylbenzene and xylenes (BTEX), which were primarily confined to the soils present in the gas holder. Coal tar and sheens were observed in soils below the gas holder floor. COCs were not detected in groundwater above standards. Additional sampling along the Chemung River indicated the Site was not impacting the river. No borings were performed in the southern portion of the Site. However, five borings were performed off-Site along the southern Site boundary on the access road along the Chemung River. The subsurface investigation did not reveal any visual presence of coal tar impacts. Two soil borings found exceedances of commercial SCOs for several PAHs (RI, GEI Consultants, Inc. 2014).

Shallow groundwater on-Site exceeded the applicable standards for several metals including arsenic (maximum 37 part per billion (ppb), standard 25 ppb) which were not attributable to the Site. Additionally, PAHs and BTEX compounds, which are more indicative of MGP contamination, were detected but below applicable groundwater standards. The Site is served is by municipal water.

Coal tar NAPL-coated or saturated soil was not identified in the soil borings advanced in the former gas production area, or in the adjacent areas sampled during the RI. Visible evidence of MGP-related impacts was limited to hydrocarbon-like staining and hydrocarbon sheen and blebs in fill at the bottom of the subsurface Gas Holder foundation, and sheen in soil generally within a 7-foot interval below the bottom of the Holder floor. Soil borings advanced in outside of the Gas Holder foundation, and below the holder floor were used to define the horizontal and vertical extent of the MGP-impacted fill and soil.

Volatile or semi-volatile organic compounds and total cyanide were not detected in of the groundwater samples in concentrations greater than the NYSDEC Groundwater Standards or Guidance Values.

Sediment probing and sediment sampling was performed in the Chemung River adjacent to and downstream of the Site to the first sediment depositional area. The sediment sample results coupled with the lack of visual evidence of MGP impacts indicated that the Site is not impacting the Chemung River. Because no on-Site buildings existed at the time of the RI, inhalation of Site contaminants in indoor air due to soil vapor intrusion was not a concern for the Site. Environmental sampling also indicated soil vapor intrusion was not a concern off-Site (RI, GEI Consultants, Inc. 2014).

Visible evidence of hydrocarbon impacts was not observed during the probing of sediments in the Chemung River to the south of the Site, or downstream at the nearest identified potential depositional area. PAHs were detected at low-level concentrations in the sediment samples collected in the area adjacent to the Site; however, the concentrations detected were similar to, or slightly elevated above the concentrations of PAHs detected in the upstream samples.

During the 2014 RI, the absence of a significant high-value habitat, the absence of a pathway for MGP-related residuals to migrate from the Site to the river, and the low

concentrations of detected compounds in the sediment samples (which are not attributable to the MGP Site), a Fish and Wildlife Impact Assessment (FWIA) was not warranted.

As part of the RI, a qualitative human health exposure assessment was performed for the Site and the adjacent areas for current and potential future receptors. The assessment evaluated the potential for an exposure to constituents of concern for property users, recreational users, outdoor utility and maintenance workers, and subsurface utility and construction workers as the conditions existed in 2013-2014. For all but one of these groups, the potential for an exposure was considered to be very low or a potentially complete exposure pathway was not identified. For a subsurface utility worker who performs subsurface work on the NYSEG property to repair underground utilities, or for a future construction project, the worker may potentially be exposed to impacted soil or soil vapor if excavation work is required in or around the Gas Holder foundation.

In 2015, the data obtained during the RI were used to prepare a Feasibility Study (FS) of potential remedial alternatives. The alternatives were presented by GEI in the document entitled "*Feasibility Study Report, Elmira Water Street Manufactured Gas Plant Site, City of Elmira, New York, NYSDEC Site #808025, Index #: D0-0002-9309*," dated November 2, 2015 (GEI Consultants, Inc. 2015). The NYSDEC reviewed the FS and selected an alternative for Site cleanup. The selected remedy identified is presented in the NYSDEC ROD document entitled "*Record of Decision - NYSEG – Elmira Water Street MGP State Superfund Project – Elmira, Chemung County, Site No. 808025*," dated March 2017 (ROD, NYSDEC 2017).

In 2018, GEI completed a Pre-Design Investigation (PDI), which was a pre-design work plan for the final Remedial Design Work Plan. The PDI included an introduction, a summary of the design investigation, a description of the design scope, identification of required permits or authorizations, a project schedule, and a description of the post-construction plans (PDI, GEI Consultants, Inc. 2018).

In 2021, GEI completed the Remedial Design Work Plan (RD), the 100% Remedial Design Submittal which described the remedial activities required for the NYSEG Elmira Water Street MGP Site. The RD summarized the results of previous

investigations, identified the primary areas of concern, and detailed the selected remedial actions to taken during remediation.

A summary of the selected remedial actions from the RD are included in this section. Greater details can be found in Sections 3.0 and 4.0 of this SMP and the Final Engineering Report (FER).

- Protection and/or relocation of utilities along East Water Street, and on the Site.
- Installation of excavation support around the Gas Holder foundation.
- Excavation and off-Site disposal of the Gas Holder foundation and contents and soil below the holder to address grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u) (NYSDEC, 2006); soil containing visually impacted soils, visual coal tar or non-aqueous phase liquid; soil containing total PAHs exceeding 500 ppm, and soil that create a nuisance.
- Backfill of the excavation area with imported material meeting NYSDEC criteria (6 NYCRR Part 375-6.7(d) (NYSDEC, 2006), and the NYSDEC requirements for emerging contaminants.
- Site restoration, including repaving the area disturbed during the excavation.
- The Site cover that existed outside of the excavation area will be maintained to allow for Commercial Use of the Site. Future redevelopment will maintain the existing Site cover, which consists either of the structures such as buildings, pavement, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable SCOs for Commercial Use. Imported fill material will meet the requirements for the identified Site use as set forth in 6 NYCRR part 375-6.7(d), and the NYSDEC requirements for emerging contaminants.
- Monitoring of groundwater for a period of 5 years following remediation to assess post-remedial conditions, followed by a re-evaluation with the NYSDEC of the need for any continued monitoring (discussed further in section 4.3)
- Institutional Controls/Engineering Controls (IC/ECs) implemented by a Site Management Plan (SMP – this document).
- Periodic Certification of IC/ECs in accordance with Part 375-1.8(h)(3).

2.4 Remedial Action Objectives

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) were identified in the March 2017 ROD for the Elmira Water St. MGP Site.

2.4.1 Groundwater RAOs

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

2.4.2 Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.4.3 Soil Vapor RAOs

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a Site.

2.5 Remaining Contamination

The primary MGP-related impacts identified at the Site were related to coal tar which contains many organic compounds which are regulated by the NYSDEC. The NYSDEC identified VOCs and SVOCs as the COCs for the Site, more specifically, BTEX, and PAHs which are a sub-group of SVOCs. The media impacted by MGP-related COC was identified to be subsurface soil. Please see Tables 7A – 7I for remaining contamination from surface to 15ft bgs of surface soil and subsurface soil, as well as remaining sediment

contamination. The extent of the MGP-impacts identified at the Site is shown on Figures 5A, 5B, 6 and is described below:

2.5.1 Soil

Surface Soil

As detailed in the ROD, twelve surface soil samples were collected from the Site during the RI (GEI Consultants, Inc. 2014), collected from a depth of 0-2 inches to assess direct human exposure. The results indicated that surface soils at the Site exceed the unrestricted SCG for PAHs and metals.

Four samples (SS-1 through SS-4) were taken from the grassy area in the north of the floodwall. Two of those four surface soil samples exceeded the SCGs for commercial use for dibenz(a,h)anthracene. The remaining eight samples taken south of the floodwall slightly exceeded the unrestricted SCO for indeno(1,2,3-cd)pyrene - but were less than the commercial SCOs. From these eight samples, three samples were collected from the access road adjacent to the river off-Site south of the levee wall. The maximum total PAH concentrations from these three samples was 4.38 ppm. A summary of surface and subsurface soil exceedances in samples collected during the RI is presented in Figures 5A & 5B. Figures 5A & 5B also summarize the exceedances of surface and subsurface soil remaining following completion of the remedial action.

The RIR suggested that the exceedance of dibenz(a,h)anthracene in two surface soil samples was insignificant and not related to previous MGP operations conducted on the Site.

There were no exceedances of commercial SCOs in surface soil samples collected from the earth embankment and access road located south of the floodwall. Three surface soil samples were taken from the grassy area adjacent to the Chemung River Off-Site south of the Site. Only indeno(1,2,3-cd)pyrene was detected above the unrestricted SCO in these three samples with a maximum concentration of 0.76 ppm, which is slightly above the unrestricted SCO of 0.5 ppm. No other constituent exceeded the unrestricted SCO.

This material, in accordance with the Selected Remedy (Alternative 4: Source Material Excavation with Site Cover and Institutional Controls), will remain onsite following the remediation of the gasholder. As seen on Figures 5A and 5B, subsurface areas SS-2 and SS-4 (located on the southern central area of NYSEG's property) would remain following the completion of the gasholder remediation. According to the ROD, "Based on the findings of the Remedial Investigation, exceedance of dibenz(a,h)anthracene in two surface soil samples is deemed insignificant and not related to MGP operations conducted on the Site in the past".

Subsurface Soil

During investigation of the soils outside of the former Gas Holder foundation area NAPL-coated or -saturated soils were not observed in the soil borings advanced in the former gas production area, or in the adjacent areas sampled during the RI. Additionally, purifier residuals (e.g., blue-stained wood chips or soil, or lime-like materials) were not observed during the RI.

Visible evidence of MGP-related impacts was limited to hydrocarbon-like staining and hydrocarbon sheen and blebs in the fill near the bottom of the Gas Holder foundation, and sheen (in soil) in a 7-foot interval below the bottom of the floor of the former Gas Holder. Borings were advanced radially from the Gas Holder foundation to define the horizontal and vertical extent of the MGP-impacted fill and soil and extended below the impacted interval identified beneath the Gas Holder floor. As the Gas Holder foundation has been removed as of the completion of remedial activities in 2023, no further soil contamination remains in this area of the Site.

Off-Site, the subsurface soil samples taken from the borings conducted on the access road adjacent to the river to the south side of the Site exceeded unrestricted SCOs for several PAHs at a depth of approximately 10 to 12 feet. The maximum total PAH concentration was 1,062 ppm at boring SB20/TW3 (located at a depth of 10 to 11 feet) as found on Figure 5B. At this boring there was no visible evidence of MGP impacts, and groundwater in this area was not impacted by MGP constituents. The subsurface impacts are likely from fill material placed during the construction of the floodwall and associated flood control infrastructure. Figure 5B shows subsurface sampling results with Test Pit 5

(TP5) along the former MGP Building in the southeast corner of the Site and SB20/TW3 and SB22/TW5 along the southern access road outside of NYSEG's property. Results from both these locations exceed commercial SCO values. To address impacts at SB20/TW3 and SB22/TW5, the ROD states "Given the depth at which this contamination exists, the proximity to the flood control levee and the lack of potential exposure, no remedial alternatives are evaluated to address these exceedances". Similarly, at TP5, although SVOC levels were found in exceedance of commercial SCOs, due to the combined TPAH17 level being below 500 ppm the remedial area (i.e., the gasholder) was not expanded to include the area around TP5.

Underground Storage Tank

During remedial activities in 2023, a previously unknown Underground Storage Tank (UST) was discovered to the approximate southwest of the Gas Holder adjacent to the temporary guide wall around the secant pile excavation support. Confirmation sidewall samples were collected and analyzed. There was one exceedance of commercial SCO for benzo(a)pyrene in one of the confirmation samples (SW-4), with the result being generally lower that the benzo(a)pyrene concentrations identified in the RIR. A demarcation geotextile fabric layer was placed over the soils that had been exposed during UST excavation prior to the installation of imported backfill. In addition to the coverage by imported backfill, the UST soils in exceedance of commercial SCO for benzo(a)pyrene are beneath pavement upon final Site restoration. NYSDEC authorized this material to remain in the ground while recorded in SMP and FER, as the received lab results were generally lower than the concentrations identified during the Remedial Investigation. After the removal of the UST, PFAS documentation sampling was conducted at the request of the NYSDEC. Backfill of the excavated UST area immediately proceeded. Table 6 documents the results of the UST confirmation sampling and PFAS documentation sampling. Figure 9 details the location of the UST and associated sampling, and Figure 5B shows the commercial SCO benzo(a)pyrene exceedance found at CS(SW-4).

Figures 5A & 5B summarize the results of all soil samples collected that exceed the Unrestricted Use SCOs and Commercial Use SCOs at the Site after completion of remedial action. As mentioned above, please see Tables 7A – 7I for remaining contamination from

surface to 15ft bgs of surface soil and subsurface soil, as well as remaining sediment contamination.

2.5.2 Sediment

To investigate possible visible evidence of the MGP related impacts, sediment probes were advanced along 22 transects established perpendicular to the Chemung River shoreline adjacent to the Site during the Remedial Investigation. Probing was also performed downstream of the Site within first depositional area. No visual evidence of MGP or petroleum contamination was noted during the sediment probing program. Sediment samples were then collected and analyzed to assess the potential for MGP impacts. Thirty-four shallow (0-6 inch) sediment samples were collected. Ten of the 34 samples were collected upstream of the Site and the remaining 24 samples were collected adjacent to the Site. Six deeper sediment samples (1–4 feet below sediment surface) were also collected from the Chemung River adjacent to the Site. No deeper sediment samples were collected upstream or downstream of the Site.

There was no visible evidence of MGP impacts to sediments in the river adjacent and downstream of the Site. Sediments analytical results were consistent with or only slightly higher than upstream sediment samples result and were consistent with levels anticipated in urban environments. As such, no Site-related sediment contamination of concern was identified during the RI, and no remedial alternatives were evaluated or undertaken for sediment (ROD, NYSDEC 2017). Although sediment did not require remediation as stated in the ROD, data for certain samples were above applicable sediment criteria and those exceedances are described below for completeness.

Except for phenanthrene, lead, and silver, there were no exceedances of the Department's Technical Guidance for Screening Contaminated Sediments (the SCG for sediments). The maximum concentration of lead reported was 389 ppm for sediment sample SD22, as well as another detected concentration of 300 ppm in upstream sediment sample BSD7(0-6) (SCG is 218 ppm). The discovery of Lead above criteria in BSD7(0-6), located approximately 550 feet upstream of the site, supports the finding that lead identified in sediments is unrelated to the MGP site. The maximum concentration of silver reported

was 19.6 ppm for sediment sample SD9 (SCG 3.7 ppm), and the maximum concentration of phenanthrene reported was 1.6 ppm with sediment sample C3 (SCG 1.5 ppm). Total PAH concentrations in shallow sediments ranged from 0.16 ppm to 9.1 ppm, compared to 6.9 ppm reported for upstream sediment samples. Total PAH concentrations in deeper sediments ranged from 0.17 ppm to 10.4 ppm. For further information regarding extent of impacted material, please see Figure 6, Table 2 below, and Tables 7A-7I as previously discussed. Figure 6 summarizes the site-related BTEX and PAH results, and also identifies locations where COCs exceed SCGs in sediments.

Table 2 - Summary of Remaining Sediment Exceedances

Detected Constituents	Concentration Range Detected (ppm)[a]	NYSDEC ER-L[b] (ppm)	Frequency Exceeding NYSDEC ER-L	NYSDEC ER-M[b] (ppm)	Frequency Exceeding NYSDEC ER-M
SVOCs					
Acenaphthene	0.038 - 0.17	0.016	6 of 40	0.5	0 of 40
Acenaphthylene	0.047 - 0.17	0.044	6 of 40	0.64	0 of 40
Anthracene	0.044 - 0.78	0.0853	13 of 40	1.1	0 of 40
Benzo(a)anthracene	0.041 - 0.96	0.261	11 of 40	1.6	0 of 40
Benzo(a)pyrene	0.032 - 0.6	0.43	3 of 40	1.6	0 of 40
Chrysene	0.05 - 0.83	0.384	7 of 40	2.8	0 of 40
Dibenz(a,h)anthracene	0.051 - 0.091	0.0634	3 of 40	0.26	0 of 40
Fluoranthene	0.062 - 2	0.6	9 of 40	5.1	0 of 40
Fluorene	0.049 - 0.22	0.019	11 of 40	0.54	0 of 40
Naphthalene	0.055 - 0.084	0.16	0 of 40	2.1	0 of 40
Phenanthrene	0.047 - 1.6	0.24	13 of 40	1.5	1 of 40
Pyrene	0.053 - 1.7	0.665	6 of 40	2.6	0 of 40
Pesticides					
4,4'-DDE (p,p'-DDE)	0.0064 - 0.0069	0.0022	2 of 2	0.027	0 of 2
Inorganics					
Arsenic	2.9 - 30.5	8.2	3 of 32	70	0 of 32
Copper	5.9 - 247	34	8 of 32	270	0 of 32
Lead	7.1 - 389	47	14 of 32	218	2 of 32
Mercury	0.0099 - 0.2	0.15	1 of 32	0.71	0 of 32
Nickel	8.9 - 23.6	21	1 of 32	52	0 of 32
Silver	0.26 - 19.6	1	1 of 32	3.7	1 of 32

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;

b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments.

ER-M: Effect Range Moderate, ER-L: Effect Range Low

2.5.3 Groundwater

During the RI, groundwater samples were collected from the thirteen overburden monitoring wells and analyzed for VOCs, SVOCs, inorganics, pesticides, herbicides polychlorinated biphenyls (PCBs) and cyanide. The samples were collected to assess groundwater conditions on and off the Site. The results indicated that contaminants in shallow groundwater on-Site exceeded the Ambient Water Quality Standard (AWQS) for arsenic (maximum 37 parts per billion (ppb), standard 25 ppb). The arsenic detection was limited to a single well located on the access road and was only slightly above the AWQS. PAHs and BTEX compounds, which are more indicative of MGP contamination, were not detected. Phenanthrene was detected in one sample at 0.52 ppb, well below the AWQS of 50 ppb, and no other PAHs were detected in the groundwater samples.

Iron, manganese, and sodium were detected in shallow groundwater on the Site and in up gradient wells and were therefore attributable to the Site background conditions. Barium was detected above AWQS standards but was not deemed constituent of concern for this Site. The arsenic AWQS exceedance was also deemed insignificant. Additionally, the Site and surrounding area is served by municipal water supply whose source is located upstream of the Site. Thus, no remedial alternatives were considered for groundwater. (ROD, NYSDEC 2017)

2.5.4 Surface Water

As stated in the ROD, “groundwater investigation did not reveal any former MGP related contamination or its ongoing migration to the surface waters of Chemung River located south of the Site. This conclusion was reaffirmed by evaluating the results of the past surface water investigation conducted in the Chemung River. As a result, surface water was not sampled during the remedial investigation. (ROD, NYDEC 2017) Thus with no surface water contamination present following completion of remedial action.

2.5.5 Soil Vapor

Based on the absence of coal tar NAPL at the Site, the asphalt pavement surface cover in the Gas Holder foundation area, and the absence of any occupied buildings at or near the

Site, the potential subsurface intrusion was not warranted and thus not evaluated during the RIR Following remedial action, no buildings exist on-Site. If future redevelopment of the Site occurs, soil vapor evaluations and associated controls will be implemented.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the Site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the Site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix B) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the Site remedy, as determined by the NYSDEC project manager.

3.2 Institutional Controls

A series of ICs is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to Commercial uses only. Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 7. These ICs are:

- The property may be used for: Commercial use as defined by Part 375-1.8(g) of the ROD (ROD, NYSDEC 2017), although land use is subject to local zoning laws
- Selected remedy requires imposition of ICs in the form on an Environmental Easement
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP;
- NYSEG to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part375-1.8(h)(3) of the ROD (ROD, NYSDEC 2017)
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chemung County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- Groundwater monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the

property owner to assure compliance with the restrictions identified by the Environmental Easement;

- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 7, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the Site are prohibited; and
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.

3.3 Engineering Controls

3.3.1 Cover System

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 4 inches of asphalt pavement, imported clean backfill, and/or an existing layer of clean soil. The remedial area (portion of the site over the gas holder) has a layer of new asphalt approximately 4 inches thick (2.5 inches of binder and 1.5 inches topcoat), and the portion of the site used for staging and laydown was milled and repaved with a new asphalt top course approximately 1.5 inches thick. The asphalt cover installed over the subsurface remediation areas, together with the existing cover present in the undisturbed areas and cover that was restored after remedial activities, make up the Site cover system, which allows for commercial use of the Site. The cover system represents an engineering control and is a component of the overall remedy for the Site. Contamination beneath the cover system within the bounds of the Site and outside of the former gasholder area was low level and therefore did not require remedial excavation. Surface soil (or asphalt) outside of the former gasholder footprint was only restored after being disturbed from remedial activities.

Following removal of the UST, the area of the Site where the UST was excavated and removed was marked with a demarcation layer which provides a visual demarcation between the existing soil and imported clean fill. The excavation was then backfilled with

imported common backfill (an EC). Figure 7 presents the location of the cover system and applicable demarcation layers.

The Excavation Work Plan (EWP) provided in Appendix B outlines the procedures required to be implemented in the event the cover system is breached, penetrated, or temporarily removed. Cover inspection will occur annually. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendix H. Any breach of the Site's cover system must be overseen by a Professional Engineer (PE) who is licensed and registered in New York State or a qualified person who directly reports to a PE who is licensed and registered in New York State. Any site redevelopment will maintain the existing site cover, which consists either of the structures such as buildings, pavement, sidewalks, or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR Part 375-6.7(d).

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating any remedial actions at the Site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

The remedial party will also conduct any needed Site restoration activities, such as asphalt patching. In addition, the remedial party will conduct any necessary restoration of

vegetation coverage, trees and wetlands, and will comply with NYSDEC and United States Army Corps of Engineers regulations and guidance. Also, the remedial party will ensure that no ongoing erosion is occurring on the Site.

3.3.2.1 - Cover

The asphalt pavement and clean soil cover system is a permanent control, and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

4.0 MONITORING AND SAMPLING PLAN

The Site remedy does not rely on mechanical systems (such as an active sub-slab depressurization system or air sparge/soil vapor extraction systems, etc.) to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC project manager. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected (if applicable) as part of Site management for the Site are included in the Quality Assurance Project Plan provided in Appendix G.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (groundwater);

- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed annually. These periodic inspections must be conducted when the ground surface is visible (i.e., no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375 or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix I – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;

- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- Whether stormwater management systems, such as basins and outfalls, are working as designed;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection (if applicable); and
- Confirm that Site records are up to date.

Inspections of all remedial components installed at the Site will be conducted. A comprehensive Site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If Site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, verbal notice to the NYSDEC project manager must be given by noon of the following day. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the Site by a qualified environmental professional, as defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the ECs.

4.3 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the groundwater on a routine basis. Sampling locations required analytical parameters and schedule are provided in Table 3 – Post Remediation Groundwater Sampling Requirements, Sampling Frequency, and Maintenance Schedule below.

Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Table 3 – Post Remediation Groundwater Sampling Requirements, Sampling Frequency, and Maintenance Schedule

Well ID & Sampling Location		Analytical Parameters					Monitoring Frequency	Well Inspection / Maintenance Frequency
		BTEX (EPA Method 8260/8015)	PAHs (EPA Method 8270)	TAL Metals (EPA Method 6010B)	Field Parameters	NAPL Accumulation		
MW1	Upgradient	X	X	X	X	X	Quarterly for first two (2) years; then reevaluate frequency	As needed
MW2R	Upgradient	X	X	X	X	X		
MW3	Downgradient (Sentinel Well)	X	X	X	X	X		
MW4	Sidegradient	X	X	X	X	X		
MW5	Downgradient	X	X	X	X	X		
MW6	Downgradient	X	X	X	X	X		
MW7	Downgradient	X	X	X	X	X		
MW8	Downgradient	X	X	X	X	X		

Notes:

1. Field parameters include depth to groundwater, depth to NAPL (if present), depth to bottom, etc.
2. If NAPL is present/detected.

Detailed sample collection and analytical procedures and protocols are provided in Appendix F – Field Sampling Plan and Appendix G – Quality Assurance Project Plan.

4.3.1 Groundwater Sampling

The objective of the Post-Remediation Groundwater Monitoring Plan is to continue to document the nonimpacted conditions for groundwater (Class GA groundwater standards and guidance) at the Site following the remedial action. The plan is anticipated to be maintained for a period of at least five years. Groundwater monitoring will be performed quarterly for first two years, the trends will be analyzed and the monitoring frequency will be reevaluated. Any changes to the plan will be proposed to NYSDEC and will not be implemented until approved by the NYSDEC. The locations of the wells that will remain at the Site following the remedial action are shown on Figure 8 and summarized in Tables 3 and 4.

The full network of monitoring wells on-Site was installed during the Remedial Investigation phase. A subset of the existing monitoring well network was selected to monitor upgradient, on-Site, and downgradient groundwater conditions at the Site. The network of on-Site wells has been designed based on the following criteria:

The monitoring well network includes one sentinel wells that monitors downgradient plume migration. Sentinel wells are uncontaminated wells located directly downgradient of the plume and upgradient of sensitive receptors. The monitoring well network for this Site includes the following sentinel well: MW3. The well MW3 was selected as the sentinel well because it is downgradient from the remedial area (gas holder foundation) and upgradient of the nearest potential receptor (the Chemung River). MW3 was uncontaminated, except for minor exceedances of metals (manganese and sodium) which were attributable to background and not constituents of concern for this Site.

Table 4 summarizes the wells' identification numbers, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 2 upgradient wells, 1 on-Site (side-gradient) well, and 5 downgradient wells

are sampled to evaluate the effectiveness of the remedial system. The remedial party will measure depth to the water table for each monitoring well in the network before sampling.

Table 4 – Monitoring Well Construction Details & Groundwater Elevation Measurements

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (ft above mean sea level, NAVD88)			Well Depth (feet)	Groundwater Elevation (NAVD88) (6/18/13)
				Casing	Surface	Screened Interval		
MW1	Upgradient	42.088610° N -76.797191° W	2”	850.67	850.67	828.1 – 838.1	25’	834.55
MW2R	Upgradient	42.088675° N, -76.796723° W	2”	850.3	850.4	837.4 - 827.4	25’	833.50 (6/29/23)
MW3	Downgradient (Sentinel Well)	42.088488° N -76.796758° W	2”	851.08	851.4	827.5 – 837.5	25’	834.43
MW4	Side-gradient	42.088624° N -76.796635° W	2”	850.54	851.0	828.4 – 838.4	25’	834.38
MW5	Downgradient	42.088391° N -76.796864° W	2”	851.85	852.3	828.0 – 838.0	25’	834.40
MW6	Downgradient	42.088404° N -76.796804° W	2	851.49	852.1	829.3 – 839.3	25’	834.94
MW7	Downgradient	42.088409° N -76.796643° W	2”	851.14	851.5	828.5 – 838.5	25’	834.53
MW8	Downgradient	42.088443° N -76.796396° W	2”	850.69	851.1	828.1 – 838.1	25’	834.18

Monitoring well construction logs are included in Appendix E of this document.

If biofouling or silt accumulation occurs in the on-Site and/or off-Site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC project manager will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC project manager. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC project manager.

The sampling scope and frequency may only be modified with the approval of the NYSDEC project manager. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC project manager.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix I - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Site-specific Field Activities Plan provided as Appendix F of this document.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The Site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given Site and associated remedial systems. Vulnerability assessments provide information so that the Site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the Site during periodic assessments, and briefly summarizes the vulnerability of the Site and/or engineering controls to severe storms/weather events and associated flooding.

The Site is located adjacent to the Chemung River. The gas holder area of the Site in the northeast corner sitting at approximately 847 feet above sea level, which is approximately 15 feet above the normal water surface elevation of the Chemung River. The southern boundary of the MGP Site runs along the flood control structure. The southern portion of the Site is covered by perpetual NYSDEC Flood Protection Project (FPP) easements. The easement areas were established in 1947 to implement the New York State Department of Public Works (NYSDPW) Elmira Flood Protection Project for the Chemung River. The flood control features in the southern area of the Site, and the adjacent City of Elmira parcel to the south, consist of a man-made flood control structure which was constructed along the bank of the Chemung River between 1948 and 1949. The flood control structure includes a levee/embankment, concrete floodwall with a sheet pile cutoff (I-Wall) near the center of the levee, and an access road for NYSDEC maintenance of the levee area. An 84-inch-diameter, corrugated metal pipe (CMP) interceptor sewer is located in the southern area of the Site. The interceptor sewer conveys storm water from the City of Elmira to an outfall in the riverbank east of the Site.

Given the Site's proximity to the river, and the potential for flooding in the Elmira area due to heavy precipitation events (most notable the 1972 floods due to the remnants of Hurricane Agnes), the Site can be prone to sporadic seasonal flooding. Accordingly, the engineering controls – soil & pavement cover system – were implemented to resist the potential for flooding and/or erosion during high flow events in the unlikely event that the Chemung River overtops its banks, and the flood control features built on the banks of the Chemung River in the 1940s help to minimize the risk of floodwaters directly impacting the Site.

The engineering controls are passive and are not vulnerable to changing or extreme weather conditions. As a vacant area, the Site is not anticipated to be vulnerable to high winds or electrical outages. Storm water management is not anticipated to be a concern because the Site is graded for positive drainage and protected from floods. The Site cover system is anticipated to withstand foreseeable rain, snow, and flooding and protect against long term direct contact exposures. Based on the thickness and integrity of the Site cover system, erosion is not a concern and impacted materials are not anticipated to be released during extreme weather events, including flooding. No contaminants, liquids, refuse, or other hazards materials are stored on Site, so the Site is not susceptible to a spill or other contaminant release caused by storm-related damage, flooding, erosion, high winds, etc. The Site is not vulnerable to wildfires due to its location in an urban area near downtown Elmira.

If Site conditions change, NYSEG, with NYSDEC consultation, will evaluate the need to develop a vulnerability assessment. Potential future vulnerability assessments will be provided as part of the PRR if needed, as well as any observed changes in the Site conditions that have the potential to increase the Site's vulnerability to potential climate change events.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including Site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the Site during Site management, and as reported in the Periodic Review Report (PRR).

Site maintenance activities (i.e., groundwater monitoring, Site inspection, etc) will be performed in such a way to minimize energy usage, waste generation and water consumption. If feasible, these activities will be performed during the same mobilization and with local staff carpooling to minimize fuel usage and emissions generated from traveling to the Site. Measures to minimize the generation of wastewater will be reported in the PRR.

Based on the remedial measure already implemented, this remedy is protective of human health and the environment and satisfies the remediation objectives (project RAOs). Implementation of Green Remediation techniques during future response actions at the Site is one of the components of this remedy. Green remediation principals and techniques will be implemented to the extent feasible in the Site management of the remedy as per DER-31. The major green remediation components that will be considered as the Site Management Plan is implemented include:

Considering the environmental impacts of remedial technologies and stewardship over the long term;

- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling, and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balanced ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development (if applicable).

Green Remediation techniques were previously considered during the remedial design and implementation phases of this project. E.g., several examples of waste reduction procedures implemented during Site remediation are listed below:

- Asphalt pavement removed from the existing parking lot was recycled.
- Temporary casing used to provide support during the secant pile drilling was reused throughout the work and was decontaminated at the end of the project to allow future reuse.
- Reuse of industrial by-products, such as flyash or ground granulated blast furnace slab (GGBFS), was permitted in the concrete for the secant pile excavation support system.
- The secant pile system was designed as a compression ring and did not require internal bracing, so no scrap or waste steel was generated when the excavation support system was no longer needed. Eliminating bracing allowed the excavation to be more efficient, and the circular shape of the excavation support closely matched the shape of the holder which helped to minimize over-excavation and the associated transportation and disposal. It also eliminated the need for fabrication, transportation, cutting, and welding of steel shapes used for internal bracing.
- The secant pile system was designed to be relatively water-tight, which helped to minimize the amount of groundwater that needed to be pumped and treated.

6.2.1 Timing of Green Remediation Evaluations

This section is not applicable because there are no active remedial systems, and the remediation has already been designed and implemented.

6.2.2 Remedial Systems

This section is not applicable because there are no active remedial systems.

6.2.3 Building Operations

This section is not applicable because there are no buildings on the Site.

6.2.4 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site, use of consumables in relation to visiting the Site in order to conduct system checks and/or collect samples, and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources. Consideration shall be given, if appropriate, to reducing the sampling frequency and the frequency of Site visits. The proposed Site inspection / groundwater monitoring visits are already proposed to be conducted only once per year – to further reduce the impact of annual mobilizations, carpooling of field staff to the Site will be considered where applicable (use of mass transit is impractical in this region of New York).

6.2.5 Metrics and Reporting

As discussed in Section 7.0 and as shown in Appendix I – Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of green remediation during Site management and to identify corresponding benefits. A set of metrics has been developed.

6.3 Remedial System Optimization

If a remedial system is put into use at this Site in the future, a Remedial System Optimization (RSO) study will be conducted any time that the NYSDEC project manager or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the Site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a Site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the Site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall Site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to Site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All Site management inspection, maintenance and monitoring events will be recorded on the appropriate Site management forms provided in Appendix I. These forms are subject to NYSDEC revision. All Site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375 or a qualified person who directly reports to a PE who is licensed and registered in New York State.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 5 and summarized in the Periodic Review Report.

Table 5: Schedule of Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection Report	Annually
Post-Remediation Groundwater Monitoring Progress Report	Annually
Periodic Review Report	Submitted annually to NYSDEC, or as otherwise determined by the NYSDEC

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC project manager.

All inspection reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;

- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., groundwater);
- Depth/thickness of NAPL encountered (if any);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting will likely not be needed, as the Site remedy does not rely on any operating remedial system.

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the NYSDEC project manager beginning sixteen (16) months after the Certificate of Completion or equivalent document is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the NYSDEC project manager or as otherwise determined by the Department. In the event that the Site is subdivided into separate parcels with

different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix D -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual Site inspections, fire inspections and severe condition inspections, if applicable.
- Description of any change of use, import of materials, or excavation that occurred during the certifying period.
- All applicable Site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These tables and figures will include a presentation of past data as part of an evaluation of contaminant concentration trends, including but not limited to:
  - Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data;
  - O&M data summary tables;
  - and
  - A groundwater elevation contour map for each gauging event.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC

EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A Site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the Site-specific ROD (ROD, NYSDEC 2017);
  - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan;
  - An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the ROD (ROD, NYSDEC 2017) ; and
  - The overall performance and effectiveness of the remedy.

Following the last inspection of the reporting period, a qualified environmental professional as defined in 6 NYCRR Part 375 will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:*

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, and continues to function as designed;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any Site management plan for this control;*

- *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;*
- *If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the Site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *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 in this report is accurate and complete.*

I certify that all information and statements in this certification form 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, Daniel Kopcow, of GEI Consultants, Inc., P.C. (1301 Trumansburg Road, Suite N, Ithaca, New York, 14850), am certifying as NYSEG's Designated Site Representative for the Site."

"I certify that the New York State Education Department has granted a Certificate of Authorization to provide Professional Engineering services to the firm that prepared this Periodic Review Report."

I certify that all information and statements in this certification form 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, Daniel Kopcow, of GEI Consultants, Inc, P.C. (1301 Trumansburg Road, Suite N, Ithaca, New York, 14850), am certifying as NYSEG's Designated Site Representative for the Site."

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The Periodic Review Report may also need to be submitted in hard-copy format if requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control or failure to conduct Site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

7.4 Remedial System Optimization Report

This section is not applicable because there are no active remedial systems on Site.

8.0 REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

GEI Consultants, Inc. 2014. Remedial Investigation Report, Elmira Water Street Manufactured Gas Plant Site, City of Elmira, New York, NYSDEC Site# 808025. Prepared on behalf of NYSEG. August 2014.

GEI Consultants, Inc. 2015. Feasibility Study Report, Elmira Water Street Manufactured Gas Plant Site, City of Elmira, New York, NYSDEC Site #808025. Prepared on behalf od NYSEG. November 2015.

GEI Consultants, Inc. 2018. Pre-Design Investigation Work Plan, Remedial Design, Elmira Water Street Manufactured Gas Plant Site, City of Elmira, New York, NYSDEC Site# 808025. Prepared on behalf of NYSEG. April 2018.

GEI Consultants, Inc. 2021. Remedial Design Work Plan, 100% Remedial Design Submittal, Elmira Water Street Manufactured Gas Plant Site, City of Elmira, New York, NYSDEC Site# 808025. Prepared on behalf of NYSEG. March 2021.

NYSDEC. 2010. DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC. 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

NYSDEC. 2017. Record of Decision (ROD). NYSEG – Elmira Water St. MGP State Superfund Project, Elmira, Chemung County, New York, Site No. 808025. Prepared by NYSDEC Division of Environmental Remediation. March 2017.

Sevenson Environmental Services, Inc. 2022. Technical Execution Plan, Elmira Water Street Former MGP Site. October 2022.

APPENDIX A – LIST OF SITE CONTACTS

Table A1: Notifications*

Name	Contact Information
NYSEG Project Manager John Ruspantini	607-725-3801 JJruspantini@nyseg.com
GEI Project Manager Daniel Kopcow, P.E.	607-216-6976 dkopcow@geiconsultants.com
GEI Project Engineer P.J. Snyder, P.E.	607-216-8975 psnyder@geiconsultants.com
GEI Health and Safety Director Steve Hawkins	860-368-5348 shawkins@geiconsultants.com
Sevenson Environmental Services Project Manager Bradley Weiser	716-510-3664 BWeiser@sevenson.com
NYSDEC Bureau Director Sarah Saucier	518-402-9675 sarah.saucier@dec.ny.gov
NYSDEC Project Manager Caroline Jalanti	518-402-9650 Caroline.jalanti@dec.ny.gov
NYSDEC Project Manager's Supervisor Kerry Maloney	518-402-9629 Kerry.maloney@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski	518-402-9569 kelly.lewandowski@dec.ny.gov
NYSDEC Flood Control Jim Lynch, P.E.	607-732-2214 Jim.lynch@dec.ny.gov
NYSDOH Project Manager James Sullivan	518-402-5584 jim.sullivan@health.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

APPENDIX B – EXCAVATION WORK PLAN (EWP)

B-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the Site's cover system, the Site owner or their representative will notify the NYSDEC contacts listed in the table below. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information can be found in the in-text Table 1A found in Appendix A.

Table B1: NYS Notifications*

NYSDEC Bureau Director Sarah Saucier	518-402-9675 sarah.saucier@dec.ny.gov
NYSDEC Project Manager Caroline Jalanti	518-402-9650 Caroline.jalanti@dec.ny.gov
NYSDEC Project Manager's Supervisor Kerry Maloney	518-402-9629 Kerry.maloney@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski	518-402-9569 kelly.lewandowski@dec.ny.gov
NYSDEC Flood Control Jim Lynch, P.E.	607-732-2214 Jim.lynch@dec.ny.gov
NYSDOH Project Manager James Sullivan	518-402-5584 jim.sullivan@health.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for Site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of

contaminated soil to be excavated, any modifications of truck routes, and any work that may impact an engineering control;

- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work, and submittals (e.g., reports) to the NYSDEC documenting the completed intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix H of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

B-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the cover system. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening. Soil screening will be performed when invasive work is done and will include all excavation and invasive

work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-Site disposal and material that requires testing to determine if the material can be reused on-Site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-Site disposal of materials and on-Site reuse is provided in Sections B-6 and B-7 of this Appendix.

B-3 SOIL STAGING METHODS

Removed soils and sediments shall only be stockpiled within a properly constructed material staging area. A reasonably level, graded, well-drained subgrade of satisfactory soil material will be provided. The staging area will include, from bottom to top, a sand subbase (minimum 4" thick); a 40 mil HDPE liner sandwiched between non-woven geotextile fabric; sand (minimum 6" thick); and granular fill (minimum 6" thick).

Soil and sediment stockpiles will be continuously encircled with a berm no less than 18" in height and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored 10-mil polyethylene liners when not in use. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum daily and after every storm event, and any noted deficiencies will be immediately corrected by the excavation contractor to the satisfaction of the Owner. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC.

Temporary stockpiles will be transported off-Site for disposal within 24 hours of placement unless a longer duration is approved by the Owner.

B-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site. A Site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the Site.

Vehicles will be loaded in a manner as to avoid contamination of their exteriors, including tires (e.g. loaded with 10-mil polyethylene sheeting draped over the side of the truck.) Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Appropriate lining consists of minimum 6-mil polyethylene sheeting, an equivalent material, or the loaded vehicle will otherwise be water-tight and will be equipped with functioning tailgate locks and non-mesh (solid), waterproof tarps.

A truck wash will be operated on-Site, as appropriate within a temporary decontamination area. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the

adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-Site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

B-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

The preferred trucking route for waste transporters, as well as haulers transporting materials to the Site, is to enter/exit directly onto/from East Water Street (exiting trucks head directly towards Interstate 86).

All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive Sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

The preferred barge transport route for the transportation of solid and liquid non-hazardous and hazardous (if any) waste generated by the remedial activities at the site, as

well as restoration materials imported to the removal area(s), will be the most direct line between the removal area(s) and the transloading area. The final barge transport route may be subject to modification based on river currents and/or water depth.

B-6 Materials Disposal Off-Site

All material excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed off-Site in a permitted facility in accordance with all local, State and Federal regulations. If disposal of material from this Site is proposed for unregulated off-Site disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-Site management of materials from this Site will not occur without formal NYSDEC project manager approval.

Off-Site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g., hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6 NYCRR Subpart 360-15 registered or permitted facility).

B-7 MATERIALS REUSE ON-SITE

The qualified environmental professional, as defined in 6 NYCRR Part 375, will ensure that procedures defined for materials reuse in this SMP are followed and that

unacceptable material (i.e., contaminated) does not remain on-Site. Contaminated on-Site material, including historic fill and contaminated soil, that is acceptable for reuse on-Site will be placed below the demarcation layer or impervious surface, and will not be reused within the cover system or within landscaping berms. Contaminated on-Site material may only be used beneath the Site cover as backfill for subsurface utility lines with prior approval from the DEC project manager.

Proposed materials for reuse on-Site must be sampled for full suite analytical parameters including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the Site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances April 2023 guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

Soil/fill material for reuse on-Site will be segregated and staged as described in Sections B-2 and B-3 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of Site excavation activities and proximity to nearby Site features. Material reuse on-Site will comply with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Any demolition material proposed for reuse on-Site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-Site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site will not be reused on-Site.

B-8 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed off-Site at a permitted facility in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, and will be managed off-Site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

B-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the ROD (ROD, NYSDEC 2017). The existing cover system within the remedial area is comprised of approximately 4 inches (2.5 inches of binder and 1.5 inches topcoat) of asphalt pavement, and imported backfill. Outside of the remedial area, the cover system consists of approximately 4 inches of asphalt pavement above the existing soils, and approximately 1.5 inches of the 4-inch-thick pavement was milled and replaced as part of the remedial construction. The demarcation layer, consisting of orange geotextile will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt, this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP. The alteration, restoration and modification of engineering controls must conform with

Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

B-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, and will be in compliance with provisions in this SMP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. A copy of the form is presented in Appendix J.

Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the Site.

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for Commercial Use. Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

B-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

B-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. The NYSDEC project manager will be promptly notified of the discovery.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes [TAL metals, TCL volatiles and semi-volatiles (including 1,4-dioxane), TCL pesticides and PCBs, and PFAS], unless the Site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project

manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone within two hours to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

B-13 COMMUNITY AIR MONITORING PLAN

Perimeter air monitoring using fixed-station equipment is required to be implemented during ground intrusive activities. Specifically, monitoring should be performed for total VOCs and dust (PM-10) along the Site perimeter at 15-minute intervals and 24 hours per day. A baseline (pre-construction) monitoring event should be performed to assess ambient air concentrations prior to the start of ground-intrusive activities, and equipment should be calibrated on a regular basis, when erroneous results are reported and weekly, at a minimum.

Three locations adjacent to the excavation should be monitored, including one upwind and two downwind stations positioned between the work zone and the location of potential off-Site receptors. Each real-time fixed-location air monitoring station should contain the following inside a protective weather-tight enclosure:

- Aeroqual AQM ambient air monitoring system from SPECTO technologies.
    - A photoionization detector (PID)
    - A filtered dust monitor equipped with a PM-10 cyclone filter
    - Real-time uploading of readings to the Aeroqual cloud system to provide immediate readouts from the data logging device with modem communication for data transmittal and alerting.

Data is to be stored in data loggers located within each station. If desired, stored data along with system performance data from each station can be sent in real-time, via

telemetry, to a central computer system for monitoring and analysis. A weather station should be co-located with the upwind CAMP station to collect meteorological conditions, including wind direction, wind speed, temperature, and relative humidity. One-minute data for each meteorological parameter can be transmitted to the central data storage location to assess upwind, central, and downwind air monitoring stations for responding to Alert, Response, and Action Level exceedances.

The following target parameters and corresponding Alert Levels, Response Levels, and Action Levels were developed in accordance with the NYSDOH Generic CAMP and are associated with the Site conditions also identified below:

Table B2A: CAMP Alert Levels & Response Actions:

Target Parameter	Internal Requirement[1]	DER-10 generic CAMP requirements[2]	
	Alert Level	Response Level	Action Level
TVOC (15-minute Average Concentration)	3.7 ppm	5.0 ppm	25 ppm
PM-10 (15-minute Average Concentration)	N/A	100 µg/m^3	150 µg/m^3

Site Condition	TVOC	PM-10	Notification Required
Site Condition 1	Less than Alert Level (<3.7 ppm)	Less than Response Level (<100 µg/m^3)	N/A
Preliminary Site Condition 2	Greater than or equal to Alert Level less than Action Level (≥3.7 ppm and <5 ppm)	N/A	NYSEG, Construction Manager (if applicable), Contractor *
Site Condition 2	Greater than or equal to Alert Level less than Action Level (≥5.0 ppm and <25 ppm)	Greater than or equal to Response Level and less than Action Level (≥100 µg/m^3 and <150 µg/m^3)	NYSEG, Construction Manager (if applicable), Contractor, NYSDEC, and NYSDOH *
Site Condition 3	Greater than or equal to Action Level (≥25 ppm)	Greater than or equal to Action Level (≥150 µg/m^3)	

Notes:

1. Alert Levels are not established by the NYSDOH or NYSDEC and are internally established concentration levels for total volatile organic compounds. Alert Levels are set below the levels established by the NYSDOH so that actions can be taken prior to exceeding a NYSDOH threshold. An Alert Level serves as a preemptive tool to trigger contingent measures, if necessary, to assist in minimizing off-Site transport of contaminants during remedial activities.

2. Response Levels and Action Levels are defined in Appendix 1A of the New York State Department of Environmental Conservation DER-10 / Technical Guidance for Site Investigation and Remediation (NYSDEC, 2010).

* - Parties to be notified within 24-Hours of Action Level Exceedance

µg/m^3 - micrograms per cubic meter
ppm - parts per million by volume
TVOC - total volatile organic compounds

PM-10 - particulate matter (i.e., dust) less than 10 microns in diameter
N/A - not applicable

In the event of an Alert, Response or Action Level, the CAMP outlines the procedures to be enacted by the Contractor as directed by the Engineer/CM. Exceedances will be reported immediately, along with an explanation of why said exceedance occurred and the corresponding actions taken to remedy said exceedance(s). The response actions referenced to the Site conditions identified above, are as follows:

Table B2b: CAMP Alert Levels & Response Actions:

Site Condition	Control Measure[1]
Site Condition 1	Normal Site activities - No control measures required.
Preliminary Site Condition 2	Establish trend of data and determine if evaluation/wait period is warranted Cover all or part of the excavation area Apply VOC emission suppressant foam over open excavation areas Change construction process or equipment that minimize air emissions
Site Condition 2	Temporarily stop work Temporarily relocate work to an area with potentially lower emission levels Apply water to area of activity or haul roads to minimize dust levels Reschedule work activities Cover all or part of the excavation area Apply VOC emission suppressant foam over open excavation areas Slow the pace of construction activities Change construction process or equipment that minimize air emissions Install a perimeter barrier fence Apply water on haul roads* Wet equipment and excavation faces* Spray water on buckets during excavation and dumping* Haul materials in properly tarped or watertight containers* Restrict vehicle speeds to 10 mph* Cover excavated areas and material after excavation ceases* Reduce the excavation size and/or number of excavations*
Site Condition 3	Halt work Encapsulate construction area and treat air exhaust Perform work during cold weather Cease construction activities Re-evaluate air monitoring work plan

Table Notes:

1. The control measures specified under each Site condition can be implemented in any order that is most appropriate under the existing Site conditions.

* - Control measures suggested in the New York State Department of Environmental Conservation DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC 2010)
VOC - volatile organic compound

mph - miles per hour

In addition to measured PM-10 levels, the CAMP requires monitoring of visible dust conditions. If visible airborne dust were observed leaving the work area, dust suppression techniques are to be employed. Additionally, the CAMP requires that odors be monitored at the perimeter of the Site periodically throughout the day, or in response to odor complaints. If odors were detected, the CAMP requires that an on-Site odor survey be performed using a supplemental PID. Further information regarding the Elmira Water Street MGP Site CAMP program details can be found in Appendix F of The GEI Remedial Design Work Plan.

A figure showing the location of air sampling stations based on generally prevailing wind conditions is shown in Figure 10. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

B-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-Site. Specific odor control methods to be used on a routine basis will include:

- Use odor controls such as Rusmar™ foam or other odor suppressants such as BioSolve spray or hydromulch,
- Minimize the amount of time that impacted material is exposed to ambient air at the Site,
- Cover excavated material as soon as practical, and/or
- Limit potential odor-producing Site activities to times when specific meteorological conditions prevail, such as when winds are blowing away from a specific receptor.

If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will

be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

B-15 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the Community Air Monitoring Plan (CAMP) provided in Section B-13. If particulate levels at the Site exceed the thresholds listed in the CAMP or if airborne dust is observed on the Site or leaving the Site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the Site.

A dust suppression plan that addresses dust management during invasive on-Site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved using a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Installation of a wind screen on the perimeter face.

B-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX C - RESPONSIBILITIES OF OWNER AND REMEDIAL PARTY

Reponsibilities for implementing the Site Management Plan ("SMP") for the Elmira Water St. MGP Site (the "Site"), number 808025 are divided between the Site owner and a Remedial Party, as defined below. The owner is currently listed as:

New York State Electric & Gas (NYSEG)
John Ruspantini, Manager - Programs/Projects, Environmental Remediation, Electric Capital Delivery
18 Link Drive
Binghamton, NY 13904
(the "owner")

Solely for the purposes of this document and based upon the facts related to a particular Site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or Site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

NYSEG (the "Remedial Party")
John Ruspantini, Manager - Programs/Projects, Environmental Remediation, Electric Capital Delivery
18 Link Drive
Binghamton, NY 13902

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

Site Owner's Responsibilities:

1. The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the Site.

2. In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in an Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the Site's Periodic Review Report (PRR) certification to the NYSDEC.

3. In the event the Site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4. The owner shall grant access to the Site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5. The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. If damage to the remedial components or vandalism is evident, the owner shall notify the Site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.

6. If some action or inaction by the owner adversely impacts the Site, the owner must notify the Site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3- Notifications and coordinate the performance of necessary corrective actions with the RP.

7. The owner must notify the RP and the NYSDEC of any change in ownership of the Site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty

days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A change of use includes, but is not limited to, any activity that may increase direct human or environmental exposure (e.g., day care, school or park). A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8. The owner will conduct mowing and general property maintenance on behalf of the RP. The RP remains ultimately responsible for maintaining the engineering controls.

9. In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the Site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the Site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the Site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new

party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3- Notifications of the SMP.

7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in Site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the NYSDEC project manager to discuss the need to update such documents.

Change in RP ownership and/or control and/or Site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future Site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

APPENDIX D – ENVIRONMENTAL EASEMENT

The Environmental Easement Survey figure will be included by NYSEG under separate cover at a later date.

Tables

Table 6. **Elmira Water Street MGP Site**
Detected Remedial Performance/Documentation Sampling Results
NYSEG
Elmira, NY

Analyte	Units	CAS No.	Unrestricted SCO	Commercial SCO	Task Code Sample Name Sample Date Drummed UST Soil CS (BOTTOM) 5/30/2023	Drummed UST Soil CS (SW-1) 5/30/2023	Drummed UST Soil CS (SW-2) 5/30/2023	Drummed UST Soil CS (SW-3) 5/30/2023	Drummed UST Soil CS (SW-4) 5/30/2023	Gasholder *CS1 (30) 4/25/2023	Gasholder *CS2 (30) 4/25/2023	Gasholder *CS3 (30) 4/25/2023	Gasholder *CS4 (30) 4/25/2023	Gasholder *CS5 (30) 4/25/2023	Gasholder CS (BOTTOM) 6/8/2023	Gasholder CS (SW-1) 6/8/2023	Gasholder CS (SW-2) 6/8/2023	Gasholder CS (SW-3) 6/8/2023	Gasholder CS (SW-4) 6/8/2023		Number of Results
BTEX	mg/kg																				
Toluene		108-88-3	0.7	500	0.0018 U	0.0013 U	0.001 U	**0.0012**	**0.0015**												5
Total Xylene		1330-20-7	0.26	500	0.0018 U	0.0013 U	0.001 U	0.0011 U	**0.0014**												5
Total BTEX (ND=0)		TBTEX_ND0	NE	NE	ND	ND	ND	**0.0012**	**0.0029**												5
Other VOCs	mg/kg																				
Methylcyclohexane		108-87-2	NE	NE	**0.0026**	**0.0029**	0.001 U	**0.0027**	**0.0013**												5
Total VOCs (ND=0)		TVOC_ND0	NE	NE	**0.0026**	**0.0029**	ND	**0.0039**	**0.0042**												5
PAH17	mg/kg																				
Acenaphthene		83-32-9	20	500	0.19 U	0.19 U	0.2 U	0.2 U	**0.33**	0.18 U	0.17 U	0.19 U	0.17 U	0.18 U							10
Acenaphthylene		208-96-8	100	500	0.19 U	0.19 U	0.2 U	0.2 U	**0.92**	0.18 U	0.17 U	0.19 U	0.17 U	0.18 U							10
Anthracene		120-12-7	100	500	0.19 U	0.19 U	0.2 U	0.2 U	**1.9**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Benzo(a)anthracene		56-55-3	1	5.6	**0.4**	0.19 U	**0.21**	0.2 U	**3.5**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Benzo(b)fluoranthene		205-99-2	1	5.6	**0.47**	**0.21**	**0.26**	0.2 U	**2.9**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Benzo(k)fluoranthene		207-08-9	0.8	56	**0.22**	0.19 U	0.2 U	0.2 U	**1.2**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Benzo(g,h,i)perylene		191-24-2	100	500	**0.22**	0.19 U	0.2 U	0.2 U	**1.2**	0.18 U	0.17 U	0.19 U	0.17 U	0.18 U							10
Benzo(a)pyrene		50-32-8	1	1	**0.43**	0.19 U	**0.23**	0.2 U	**2.6**	0.18 U	0.17 U	0.19 U	0.17 U	0.18 U							10
Chrysene		218-01-9	1	56	**0.34**	0.19 U	0.2 U	0.2 U	**3.2**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Dibenz(a,h)anthracene		53-70-3	0.33	0.56	0.19 U	0.19 U	0.2 U	0.2 U	**0.45**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Fluoranthene		206-44-0	100	500	**0.47**	**0.41**	**0.3**	0.2 U	**7.9**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Fluorene		86-73-7	30	500	0.19 U	0.19 U	0.2 U	0.2 U	**2.1**	0.23 U	0.21 U	0.24 U	0.22 U	0.23 U							10
Indeno(1,2,3-cd)pyrene		193-39-5	0.5	5.6	**0.25**	0.19 U	0.2 U	0.2 U	**1.4**	0.18 U	0.17 U	0.19 U	0.17 U	0.18 U							10
2-Methylnaphthalene		91-57-6	NE	NE	0.19 U	0.19 U	0.2 U	0.2 U	**1.9**	0.28 U	0.25 U	0.28 U	0.26 U	0.28 U							10
Naphthalene		91-20-3	12	500	0.19 U	0.19 U	0.2 U	0.2 U	**1.7**	0.23 U	0.21 U	0.24 U	0.22 U	0.23 U							10
Phenanthrene		85-01-8	100	500	0.19 U	**0.28**	0.2 U	0.2 U	**12**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Pyrene		129-00-0	100	500	**0.44**	**0.3**	**0.26**	0.2 U	**6**	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U							10
Total PAH (17) (ND=0)		TPAH17_ND0	NE	NE	**3.24**	**1.2**	**1.26**	ND	**51.2**	ND	ND	ND	ND	ND							10
PAH17 Other SVOCs	mg/kg																				
Carbazole		86-74-8	NE	NE	0.19 U	0.19 U	0.2 U	0.2 U	**0.98**												5
Dibenzofuran		132-64-9	7	350	0.39 U	0.39 U	0.4 U	0.39 U	**1.3**												5
3,4-Methylphenol (m,p-Cresol)		108394/106445	NE	NE	0.39 U	0.39 U	0.4 U	0.39 U	**0.79**												5
Total SVOCs (ND=0)		TSVOC_ND0	NE	NE	**3.24**	**1.2**	**1.26**	ND	**54.27**	ND	ND	ND	ND	ND							10
PFAS-Soil	mg/kg																				
Perfluorohexanoic acid (PFHxA)		307-24-4	NE	NE											**1.6E-05 J**	**1.9E-05 J**	**1.4E-05 J**	**1.4E-05 J**	0.0002 U		5
Total PFAS (ND=0)	ng/L	TPFAS_ND0	NE	NE											**0.000016**	**0.000019**	**0.000014**	**0.000014**	ND		5
PCB Aroclors	mg/kg																				
No detects																					
Pesticides	mg/kg																				
No detects																					
Herbicides	mg/kg																				
No detects																					
Metals	mg/kg																				
Aluminum		7429-90-5	NE	NE	**9000**	**10000**	**9800**	**10000**	**7500**												5
Arsenic		7440-38-2	13	16	**5.1**	**5.1**	**6.5**	**5.5**	**4.1**												5
Barium		7440-39-3	350	400	**86 J**	**76 J**	**95 J**	**90 J**	**74 J**												5
Beryllium		7440-41-7	7.2	590	**0.41**	**0.44**	**0.48**	**0.48**	**0.35**												5
Calcium		7440-70-2	NE	NE	**8700 J**	**1700 J**	**8800 J**	**3500 J**	**5700 J**												5
Chromium		7440-47-3	30	1500	**11**	**12**	**11**	**12**	**9**												5
Cobalt		7440-48-4	NE	NE	**6.9**	**7**	**6.9**	**7.2**	**5.6**												5
Copper		7440-50-8	50	270	**28 J**	**25 J**	**27 J**	**25 J**	**21 J**												5
Iron		7439-89-6	NE	NE	**22000**	**24000**	**23000**	**25000**	**18000**												5
Lead		7439-92-1	63	1000	**26 J**	**10 J**	**30 J**	**14 J**	**17 J**												5
Magnesium		7439-95-4	NE	NE	**4400**	**2600**	**5000**	**3400**	**3500**												5
Manganese		7439-96-5	1600	10000	**600**	**520**	**690**	**640**	**470**												5
Mercury		7439-97-6	0.18	2.8	**0.049 J**	0.028 U	**0.086 J**	**0.055 J**	**0.053 J**												5
Nickel		7440-02-0	30	310	**17**	**17**	**16**	**17**	**13**												5
Potassium		7440-09-7	NE	NE	**1000**	**970**	**1100**	**1100**	**920**												5
Vanadium		7440-62-2	NE	NE	**14**	**15**	**15**	**15**	**11**												5
Zinc		7440-66-6	109	10000	**78**	**57**	**76**	**66**	**61**												5
Other																					
Percent Solids	%	SOLIDS	NE	NE						**72**	**78.2**	**68.9**	**75.6**	**71.8**							5
Percent Solids	% OF DRY	SOLIDS	NE	NE											**92.2**	**88**	**90.3**	**90.3**	**80.3**		5

Table 6. **Elmira Water Street MGP Site**
Detected Remedial Performance/Documentation Sampling Results
NYSEG
Elmira, NY

					Task Code													
					Sample Name													
					Sample Date	Summary Statistics												
Analyte	Units	CAS No.	Unrestricted SCO	Commercial SCO	Number of Nondetects	Number of Detects	Number of Rejects	Minimum Nondetect	Average Nondetect	Maximum Nondetect	Minimum Detect ID	Minimum Detect	Average Detect	Maximum Detect	Maximum Detect ID	Average Detect or 1/2 Nondetect	Number of Exceedances Unrestricted SCO	Number of Exceedances Commercial SCO
BTEX	mg/kg																	
Toluene		108-88-3	0.7	500	3	2	0	0.001	0.0013667	0.0018	CS (SW-3)	0.0012	0.00135	0.0015	CS (SW-4)	0.00095	0	0
Total Xylene		1330-20-7	0.26	500	4	1	0	0.001	0.0013	0.0018	CS (SW-4)	0.0014	0.0014	0.0014	CS (SW-4)	0.0008	0	0
Total BTEX (ND=0)		TBTEX_ND0	NE	NE	3	2	0	-	-	-	CS (SW-3)	0.0012	0.00205	0.0029	CS (SW-4)	0.00082	0	0
Other VOCs	mg/kg																	
Methylcyclohexane		108-87-2	NE	NE	1	4	0	0.001	0.001	0.001	CS (SW-4)	0.0013	0.002375	0.0029	CS (SW-1)	0.002	0	0
Total VOCs (ND=0)		TVOC_ND0	NE	NE	1	4	0	-	-	-	CS (BOTTOM)	0.0026	0.0034	0.0042	CS (SW-4)	0.00272	0	0
PAH17	mg/kg																	
Acenaphthene		83-32-9	20	500	9	1	0	0.17	0.18556	0.2	CS (SW-4)	0.33	0.33	0.33	CS (SW-4)	0.1165	0	0
Acenaphthylene		208-96-8	100	500	9	1	0	0.17	0.18556	0.2	CS (SW-4)	0.92	0.92	0.92	CS (SW-4)	0.1755	0	0
Anthracene		120-12-7	100	500	9	1	0	0.12	0.16111	0.2	CS (SW-4)	1.9	1.9	1.9	CS (SW-4)	0.2625	0	0
Benzo(a)anthracene		56-55-3	1	5.6	7	3	0	0.12	0.15143	0.2	CS (SW-2)	0.21	1.37	3.5	CS (SW-4)	0.464	1	0
Benzo(b)fluoranthene		205-99-2	1	5.6	6	4	0	0.12	0.145	0.2	CS (SW-1)	0.21	0.96	2.9	CS (SW-4)	0.4275	1	0
Benzo(k)fluoranthene		207-08-9	0.8	56	8	2	0	0.12	0.1575	0.2	CS (BOTTOM)	0.22	0.71	1.2	CS (SW-4)	0.205	1	0
Benzo(g,h,i)perylene		191-24-2	100	500	8	2	0	0.17	0.185	0.2	CS (BOTTOM)	0.22	0.71	1.2	CS (SW-4)	0.216	0	0
Benzo(a)pyrene		50-32-8	1	1	7	3	0	0.17	0.18286	0.2	CS (SW-2)	0.23	1.0867	2.6	CS (SW-4)	0.39	1	1
Chrysene		218-01-9	1	56	8	2	0	0.12	0.1575	0.2	CS (BOTTOM)	0.34	1.77	3.2	CS (SW-4)	0.417	1	0
Dibenz(a,h)anthracene		53-70-3	0.33	0.56	9	1	0	0.12	0.16111	0.2	CS (SW-4)	0.45	0.45	0.45	CS (SW-4)	0.1175	1	0
Fluoranthene		206-44-0	100	500	6	4	0	0.12	0.145	0.2	CS (SW-2)	0.3	2.27	7.9	CS (SW-4)	0.9515	0	0
Fluorene		86-73-7	30	500	9	1	0	0.19	0.21222	0.24	CS (SW-4)	2.1	2.1	2.1	CS (SW-4)	0.3055	0	0
Indeno(1,2,3-cd)pyrene		193-39-5	0.5	5.6	8	2	0	0.17	0.185	0.2	CS (BOTTOM)	0.25	0.825	1.4	CS (SW-4)	0.239	1	0
2-Methylnaphthalene		91-57-6	NE	NE	9	1	0	0.19	0.23667	0.28	CS (SW-4)	1.9	1.9	1.9	CS (SW-4)	0.2965	0	0
Naphthalene		91-20-3	12	500	9	1	0	0.19	0.21222	0.24	CS (SW-4)	1.7	1.7	1.7	CS (SW-4)	0.2655	0	0
Phenanthrene		85-01-8	100	500	8	2	0	0.12	0.1575	0.2	CS (SW-1)	0.28	6.14	12	CS (SW-4)	1.291	0	0
Pyrene		129-00-0	100	500	6	4	0	0.12	0.145	0.2	CS (SW-2)	0.26	1.75	6	CS (SW-4)	0.7435	0	0
Total PAH (17) (ND=0)		TPAH17_ND0	NE	NE	6	4	0	-	-	-	CS (SW-1)	1.2	14.225	51.2	CS (SW-4)	5.69	0	0
PAH17 Other SVOCs	mg/kg																	
Carbazole		86-74-8	NE	NE	4	1	0	0.19	0.195	0.2	CS (SW-4)	0.98	0.98	0.98	CS (SW-4)	0.274	0	0
Dibenzofuran		132-64-9	7	350	4	1	0	0.39	0.3925	0.4	CS (SW-4)	1.3	1.3	1.3	CS (SW-4)	0.417	0	0
3,4-Methylphenol (m,p-Cresol)		108394/106445	NE	NE	4	1	0	0.39	0.3925	0.4	CS (SW-4)	0.79	0.79	0.79	CS (SW-4)	0.315	0	0
Total SVOCs (ND=0)		TSVOC_ND0	NE	NE	6	4	0	-	-	-	CS (SW-1)	1.2	14.993	54.27	CS (SW-4)	5.997	0	0
PFAS-Soil	mg/kg																	
Perfluorohexanoic acid (PFHxA)		307-24-4	NE	NE	1	4	0	0.0002	0.0002	0.0002	CS (SW-3)	0.000014	0.00001575	0.000019	CS (SW-1)	0.0000326	0	0
Total PFAS (ND=0)	ng/L	TPFAS_ND0	NE	NE	1	4	0	-	-	-	CS (SW-3)	0.000014	0.00001575	0.000019	CS (SW-1)	0.0000126	0	0
PCB Aroclors	mg/kg																	
No detects																		
Pesticides	mg/kg																	
No detects																		
Herbicides	mg/kg																	
No detects																		
Metals	mg/kg																	
Aluminum		7429-90-5	NE	NE	0	5	0	-	-	-	CS (SW-4)	7500	9260	10000	CS (SW-3)	9260	0	0
Arsenic		7440-38-2	13	16	0	5	0	-	-	-	CS (SW-4)	4.1	5.26	6.5	CS (SW-2)	5.26	0	0
Barium		7440-39-3	350	400	0	5	0	-	-	-	CS (SW-4)	74	84.2	95	CS (SW-2)	84.2	0	0
Beryllium		7440-41-7	7.2	590	0	5	0	-	-	-	CS (SW-4)	0.35	0.432	0.48	CS (SW-3)	0.432	0	0
Calcium		7440-70-2	NE	NE	0	5	0	-	-	-	CS (SW-1)	1700	5680	8800	CS (SW-2)	5680	0	0
Chromium		7440-47-3	30	1500	0	5	0	-	-	-	CS (SW-4)	9	11	12	CS (SW-3)	11	0	0
Cobalt		7440-48-4	NE	NE	0	5	0	-	-	-	CS (SW-4)	5.6	6.72	7.2	CS (SW-3)	6.72	0	0
Copper		7440-50-8	50	270	0	5	0	-	-	-	CS (SW-4)	21	25.2	28	CS (BOTTOM)	25.2	0	0
Iron		7439-89-6	NE	NE	0	5	0	-	-	-	CS (SW-4)	18000	22400	25000	CS (SW-3)	22400	0	0
Lead		7439-92-1	63	1000	0	5	0	-	-	-	CS (SW-1)	10	19.4	30	CS (SW-2)	19.4	0	0
Magnesium		7439-95-4	NE	NE	0	5	0	-	-	-	CS (SW-1)	2600	3780	5000	CS (SW-2)	3780	0	0
Manganese		7439-96-5	1600	10000	0	5	0	-	-	-	CS (SW-4)	470	584	690	CS (SW-2)	584	0	0
Mercury		7439-97-6	0.18	2.8	1	4	0	0.028	0.028	0.028	CS (BOTTOM)	0.049	0.06075	0.086	CS (SW-2)	0.0514	0	0
Nickel		7440-02-0	30	310	0	5	0	-	-	-	CS (SW-4)	13	16	17	CS (SW-3)	16	0	0
Potassium		7440-09-7	NE	NE	0	5	0	-	-	-	CS (SW-4)	920	1018	1100	CS (SW-3)	1018	0	0
Vanadium		7440-62-2	NE	NE	0	5	0	-	-	-	CS (SW-4)	11	14	15	CS (SW-3)	14	0	0
Zinc		7440-66-6	109	10000	0	5	0	-	-	-	CS (SW-1)	57	67.6	78	CS (BOTTOM)	67.6	0	0
Other																		
Percent Solids	%	SOLIDS	NE	NE	0	5	0	-	-	-	CS3 (30)	68.9	73.3	78.2	CS2 (30)	73.3	0	0
Percent Solids	% OF DRY	SOLIDS	NE	NE	0	5	0	-	-	-	CS (SW-4)	80.3	88.22	92.2	CS (BOTTOM)	88.22	0	0

Table 6. **Elmira Water Street MGP Site**
Remedial Performance/Documentation Sampling Results
NYSEG
Elmira, NY

Notes:
***Data for these sampling events have not been validated. Qualifiers are Lab Qualifiers.**
Analytes in blue are not detected in any sample

Only analytes that were detected at least once in each dataset were included in Table 7. For more information and/or a list of the full dataset, please refer to Appendix J.1 Raw Analytical Lab Data - Confirmation Samples

mg/kg = milligrams/kilogram or parts per million (ppm)
ng/L = nanogram per liter (ppt)
% = Percent

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
PAH = Polycyclic Aromatic Hydrocarbon
PCB = Polychlorinated Biphenyl
PFAS = Per- and polyfluoroalkyl substances
SVOC = Semi-Volatile Organic Compound
VOC = Volatile Organic Compound

Total PFAS_NY2 are calculated using detects only and summed by the 2 compounds: PFOA and PFOS
Total PFAS are calculated using detects only
Total BTEX, Total VOCs, Total PAHs, Total SVOCs, Total PCBs, Total Pesticides, and Total Herbicides are calculated using detects only.
Total PAH17 is calculated using the list of analytes: Acenaphthene, Acenaphthylene, Anthracene, Benz[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenz[a,h]anthracene, Fluoranthene, Fluorene, Indeno[1,2,3-cd]pyrene, Naphthalene, 2-Methylnaphthalene, Phenanthrene, and Pyrene

6 NYCRR = New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York
Comparison of detected results are performed against one or more of the following NYCRR, Chapter IV, Part 375-6 Soil Cleanup Objectives (SCO)s: Unrestricted Use, Residential, Restricted-Residential, Commercial, Industrial, Protection of Ecological Resources, or Protection of Groundwater

CAS No. = Chemical Abstracts Service Number
MGP = Manufactured Gas Plant
ND = Not Detected
NE = Not Established

Bolding indicates a detected result concentration
Shading and bolding indicates that the detected concentration is above the NYSDOH guidance it was compared to

Data Qualifiers:
J = The result is an estimated value.
R = The result is rejected.
U = The result was not detected above the reporting limit.
UJ = The results was not detected at or above the reporting limit shown and the reporting limit is estimated.

Table 7A - Remaining Contamination
Surface Soil SVOC Results
Elmira Water Street MGP Site

			Location Name	SS-1	SS-2	SS-3	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Sample Name	SS-1	SS-2	SS-3	Duplicate SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Start Depth	0	0	0	0	0	0	0	0	0	0	0	0	0
			End Depth	2	2	2	2	2	2	2	2	2	2	2	2	2
			Depth Unit	in	in	in	in	in	in	in	in	in	in	in	in	in
			Sample Date	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Analyte	**CAS no.**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**													
PAHs (mg/kg)																
Acenaphthene	83-32-9	20	500	1.1 U	0.96 U	0.93 U	0.93 U	**0.05 J**	0.95 U	0.96 U	**0.019 J**	0.92 U	0.95 U	1 U	1 U	1 U
Acenaphthylene	208-96-8	100	500	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Anthracene	120-12-7	100	500	1.1 U	**0.03 J**	0.93 U	0.93 U	**0.23 J**	0.95 U	0.96 U	**0.048 J**	**0.042 J**	0.95 U	1 U	1 U	**0.17 J**
Benzo(a)anthracene	56-55-3	1	5.6	**0.2 J**	**0.35 J**	**0.13 J**	**0.16 J**	**0.71 J**	**0.23 J**	**0.22 J**	**0.27 J**	**0.3 J**	**0.24 J**	**0.18 J**	**0.2 J**	**0.34 J**
Benzo(b)fluoranthene	205-99-2	1	5.6	**0.76 J**	**0.99**	**0.65 J**	**0.63 J**	**1.1**	**0.76 J**	**0.75 J**	**0.79 J**	**0.77 J**	**0.7 J**	**0.66 J**	**0.69 J**	**0.85 J**
Benzo(k)fluoranthene	207-08-9	0.8	56	**0.11 J**	**0.24 J**	**0.11 J**	**0.09 J**	**0.4 J**	**0.13 J**	**0.14 J**	**0.15 J**	**0.22 J**	**0.18 J**	**0.12 J**	**0.11 J**	**0.19 J**
Benzo(g,h,i)perylene	191-24-2	100	500	**0.12 J**	**0.28 J**	**0.1 J**	**0.14 J**	**0.24 J**	**0.12 J**	**0.11 J**	**0.11 J**	**0.17 J**	**0.22 J**	**0.13 J**	**0.15 J**	**0.2 J**
Benzo(a)pyrene	50-32-8	1	1	**0.18 J**	**0.39 J**	**0.15 J**	**0.12 J**	**0.51 J**	**0.21 J**	**0.17 J**	**0.23 J**	**0.27 J**	**0.19 J**	**0.16 J**	**0.17 J**	**0.27 J**
Chrysene	218-01-9	1	56	**0.2 J**	**0.4 J**	**0.16 J**	**0.14 J**	**0.66 J**	**0.23 J**	**0.24 J**	**0.25 J**	**0.31 J**	**0.26 J**	**0.19 J**	**0.2 J**	**0.34 J**
Dibenz(a,h)anthracene	53-70-3	0.33	0.56	1.1 U	**0.72 J**	0.93 U	0.93 U	**0.7 J**	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Fluoranthene	206-44-0	100	500	**0.3 J**	**0.51 J**	**0.22 J**	**0.22 J**	**1.4**	**0.38 J**	**0.38 J**	**0.46 J**	**0.5 J**	**0.37 J**	**0.26 J**	**0.27 J**	**0.44 J**
Fluorene	86-73-7	30	500	1.1 U	0.96 U	0.93 U	0.93 U	**0.071 J**	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	5.6	**0.79 J**	**0.83 J**	**0.69 J**	**0.71 J**	**0.8 J**	**0.72 J**	**0.72 J**	**0.72 J**	**0.73 J**	**0.76 J**	**0.77 J**	**0.79 J**	**0.83 J**
2-Methylnaphthalene	91-57-6	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Naphthalene	91-20-3	12	500	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Phenanthrene	85-01-8	100	500	**0.16 J**	**0.18 J**	**0.096 J**	**0.1 J**	**1.1**	**0.18 J**	**0.2 J**	**0.3 J**	**0.26 J**	**0.16 J**	**0.14 J**	**0.14 J**	**0.25 J**
Pyrene	129-00-0	100	500	**0.28 J**	**0.49 J**	**0.18 J**	**0.21 J**	**1.1**	**0.32 J**	**0.34 J**	**0.38 J**	**0.42 J**	**0.35 J**	**0.27 J**	**0.29 J**	**0.5 J**
Total PAH17 (mg/kg)	**NA**	**NE**	**500**	**3.1**	**5.41**	**2.486**	**2.52**	**9.071**	**3.28**	**3.27**	**3.727**	**3.992**	**3.43**	**2.88**	**3.01**	**4.38**
SVOCs (mg/kg)																
Acetophenone	98-86-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Atrazine	1912-24-9	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Benzaldehyde	100-52-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Biphenyl (1,1-Biphenyl)	92-52-4	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Bis(2-chloroethoxy)methane	111-91-1	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Bis(2-chloroethyl)ether	111-44-4	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Bis(chloroisopropyl)ether	108-60-1	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4-Bromophenyl phenyl ether	101-55-3	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Butyl benzyl phthalate	85-68-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Caprolactam	105-60-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Carbazole	86-74-8	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	**0.13 J**	0.95 U	0.96 U	**0.03 J**	0.92 U	0.95 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	59-50-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4-Chloroaniline	106-47-8	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2-Chloronaphthalene	91-58-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2-Chlorophenol	95-57-8	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Dibenzofuran	132-64-9	7	350	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
3,3-Dichlorobenzidine	91-94-1	NE	NE	1.1 UJ	0.96 UJ	0.93 UJ	0.93 U	0.93 UJ	0.95 UJ	0.96 UJ	0.93 UJ	0.92 UJ	0.95 U	1 U	1 U	1 U
2,4-Dichlorophenol	120-83-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Diethyl phthalate	84-66-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Dimethyl phthalate	131-11-3	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2,4-Dimethylphenol	105-67-9	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Di-n-butyl phthalate	84-74-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
2,4-Dinitrophenol	51-28-5	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
2,4-Dinitrotoluene	121-14-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2,6-Dinitrotoluene	606-20-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Di-n-octyl phthalate	117-84-0	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Hexachlorobenzene	118-74-1	0.33	6	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	77-47-4	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Hexachloroethane	67-72-1	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Isophorone	78-59-1	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2-Methylphenol (o-Cresol)	95-48-7	0.33	500	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4-Methylphenol (p-Cresol)	106-44-5	0.33	500	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	**0.11 J**	1.8 U	**0.073 J**	1.9 U	2 U	2 U	2 U
2-Nitroaniline	88-74-4	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
3-Nitroaniline	99-09-2	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
4-Nitroaniline	100-01-6	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
Nitrobenzene	98-95-3	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2-Nitrophenol	88-75-5	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
4-Nitrophenol	100-02-7	NE	NE	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
N-Nitrosodi-n-propylamine	621-64-7	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
N-Nitrosodiphenylamine	86-30-6	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Pentachlorophenol	87-86-5	0.8	6.7	2.1 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	2 U	2 U	2 U
Phenol	108-95-2	0.33	500	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
2,4,5-Trichlorophenol	95-95-4	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U

Table 7A - Remaining Contamination
Surface Soil SVOC Results
Elmira Water Street MGP Site

			Location Name	SS-1	SS-2	SS-3	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Sample Name	SS-1	SS-2	SS-3	Duplicate SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Start Depth	0	0	0	0	0	0	0	0	0	0	0	0	0
			End Depth	2	2	2	2	2	2	2	2	2	2	2	2	2
			Depth Unit	in	in	in	in	in	in	in	in	in	in	in	in	in
			Sample Date	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Analyte	**CAS no.**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**													
2,4,6-Trichlorophenol	88-06-2	NE	NE	1.1 U	0.96 U	0.93 U	0.93 U	0.93 U	0.95 U	0.96 U	0.93 U	0.92 U	0.95 U	1 U	1 U	1 U
Total SVOCs (mg/kg)	**NA**	**NE**	**NE**	**3.1**	**5.41**	**2.486**	**2.52**	**9.201**	**3.28**	**3.38**	**3.757**	**4.065**	**3.43**	**2.88**	**3.01**	**4.38**

Table 7B - Remaining Contamination
Surface Soil PCB, Pesticides, Herbicides, Metals, Total Cyanide Results
Elmira Water Street MGP Site

			Location Name	SS-1	SS-2	SS-3	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Sample Name	SS-1	SS-2	SS-3	Duplicate SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Start Depth	0	0	0	0	0	0	0	0	0	0	0	0	0
			End Depth	2	2	2	2	2	2	2	2	2	2	2	2	2
			Depth Unit	in	in	in	in	in	in	in	in	in	in	in	in	in
			Sample Date	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**													
PCB Aroclors (mg/kg)																
Aroclor 1016	12674-11-2	NE	NE	NA	NA	0.25 UJ	0.25 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	11104-28-2	NE	NE	NA	NA	0.25 UJ	0.25 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	11141-16-5	NE	NE	NA	NA	0.25 UJ	0.25 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	53469-21-9	NE	NE	NA	NA	0.25 UJ	0.25 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	12672-29-6	NE	NE	NA	NA	0.25 UJ	0.25 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	11097-69-1	NE	NE	NA	NA	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	11096-82-5	NE	NE	NA	NA	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	37324-23-5	NE	NE	NA	NA	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	11100-14-4	NE	NE	NA	NA	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCB Aroclors	1336-36-3	0.1	1.0	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (mg/kg)																
Aldrin	309-00-2	0.005	0.68	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	319-84-6	0.02	3.4	NA	NA	0.018 UJ	**0.0074 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA
beta-BHC	319-85-7	0.036	3	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC	58-89-9	0.1	9.2	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	319-86-8	0.04	500	NA	NA	**0.0033 J**	**0.006 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (Alpha & Gamma)	57-74-9	NE	NE	NA	NA	0.18 U	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-chlordane	5103-71-9	0.094	24	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	NE	NE	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDD	72-54-8	0.0033	92	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	0.0033	62	NA	NA	**0.0029 J**	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	0.0033	47	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.005	1.4	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	2.4	200	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	2.4	200	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	1031-07-8	2.4	200	NA	NA	0.018 U	**0.01 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	0.014	89	NA	NA	**0.0046 J**	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	7421-93-4	NE	NE	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	53494-70-5	NE	NE	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.042	15	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	1024-57-3	NE	NE	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	NE	NE	NA	NA	0.018 U	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	NE	NE	NA	NA	0.18 U	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Pesticides	NA	NE	NE	NA	NA	**0.0108**	**0.0234**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (mg/kg)																
2,4-D	94-75-7	NE	NE	NA	NA	0.018 U	0.018 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenoxyacetic Acid	93-76-5	NE	NE	NA	NA	0.018 U	0.018 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silvex	93-72-1	3.8	500	NA	NA	0.018 U	0.018 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Herbicides	NA	NE	NE	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)																
Aluminum	7429-90-5	NE	NE	**7570 J**	**6160 J**	**6050 J**	**6480 J**	**5890 J**	**6820 J**	**6670 J**	**6780 J**	**6380 J**	**6270 J**	**8340 J**	**8020 J**	**7680 J**
Antimony	7440-36-0	NE	NE	20 U	**2.6 J**	17.3 U	14.9 U	17.6 U	17.3 U	17.8 U	16.7 U	16.5 U	16.2 U	19.9 U	20.4 U	17.7 U
Arsenic	7440-38-2	13	16	**6.1**	**5.5**	**6.2**	**6.7**	**5.9**	**5.7**	**5.4**	**6**	**5.6**	**6**	**6.4**	**6.1**	**7.4**
Barium	7440-39-3	350	400	**93.1 J**	**83.8 J**	**73.1 J**	**96.1 J**	**80.9 J**	**78.2 J**	**76.9 J**	**77.8 J**	**74.4 J**	**81.5 J**	**94.9 J**	**91.4 J**	**92.2 J**
Beryllium	7440-41-7	7.2	590	**0.51**	**0.43**	**0.42**	**0.45**	**0.43**	**0.5**	**0.49**	**0.5**	**0.48**	**0.46**	**0.48**	**0.46**	**0.49**
Cadmium	7440-43-9	2.5	9.3	**0.23 J**	**0.21 J**	**0.17 J**	**0.2**	**0.22 J**	**0.24**	**0.21 J**	**0.22**	**0.21 J**	**0.21 J**	**0.19 J**	**0.17 J**	**0.19 J**
Calcium	7440-70-2	NE	NE	**2120 J**	**2030 J**	**1570 J**	**1760 J**	**1900 J**	**1490 J**	**2480 J**	**1520 J**	**1710 J**	**2210 J**	**2860 J**	**2650 J**	**2090 J**
Chromium	7440-47-3	NE	NE	**10.2**	**8.9**	**8.5**	**9.1**	**8.7**	**9.6**	**9.2**	**9.4**	**9**	**8.6**	**10.5**	**9.8**	**13.5**
Cobalt	7440-48-4	NE	NE	**14.1**	**12.8**	**14**	**14.9**	**13.6**	**15.2**	**14.4**	**14.6**	**13.9**	**13.3**	**11.6**	**10.8**	**12.4**
Copper	7440-50-8	50	270	**17.3 J**	**26.1 J**	**21.9 J**	**16.6 J**	**18.8 J**	**16.3 J**	**17.6 J**	**16.8 J**	**16.7 J**	**16.5 J**	**16.3 J**	**14.6 J**	**19.2 J**
Iron	7439-89-6	NE	NE	**16500**	**14300**	**17700**	**17500**	**15400**	**15000**	**15100**	**15100**	**14500**	**17300**	**17700**	**16900**	**23300**
Lead	7439-92-1	63	1000	**23.6**	**35.7**	**24.5 J**	**75 J**	**33.7**	**30.7**	**30.6**	**32.3**	**30.8**	**38.6**	**26.3**	**48.5**	**22.3**
Magnesium	7439-95-4	NE	NE	**2450 J**	**1950 J**	**1950 J**	**1940 J**	**1880 J**	**1990 J**	**2070 J**	**2010 J**	**1880 J**	**1820 J**	**2840 J**	**2730 J**	**2410 J**
Manganese	7439-96-5	1600	10000	**853**	**697**	**727**	**819**	**729**	**677**	**628**	**656**	**604**	**662**	**660**	**633**	**713**
Mercury	7439-97-6	0.18	2.8	**0.049**	**0.048**	**0.032**	**0.031**	**0.04**	**0.049**	**0.1**	**0.047**	**0.059**	**0.057**	**0.034**	**0.038**	**0.048**
Nickel	7440-02-0	30	310	**23.5**	**20.7**	**23.1**	**24.2**	**22.1**	**24.1**	**23.5**	**26.3**	**22.7**	**24.9**	**21.3**	**20**	**21.8**
Potassium	7440-09-7	NE	NE	**1210**	**1020**	**690**	**794**	**853**	**1080**	**1170**	**994**	**916**	**930**	**1180**	**1270**	**1190**
Selenium	7782-49-2	3.9	1500	5.3 U	**0.53 J**	**0.47 J**	**0.4 J**	**0.79 J**	**0.57 J**	4.7 U	4.5 U	**0.44 J**	**0.48 J**	5.3 U	5.4 U	**0.52 J**
Silver	7440-22-4	2	1500	0.67 U	0.61 U	0.58 U	0.5 U	0.59 U	0.58 U	0.59 U	0.56 U	0.55 U	0.54 U	0.66 U	0.68 U	0.59 U
Sodium	7440-23-5	NE	NE	**35.6 J**	**39.3 J**	**35.1 J**	**39 J**	**32.2 J**	**38.9 J**	**37.9 J**	**39.8 J**	**45 J**	**45.1 J**	**43.2 J**	**38.9 J**	**43.5 J**
Thallium	7440-28-0	NE	NE	8 U	7.3 U	6.9 U	6 U	7 U	6.9 U	7.1 U	6.7 U	6.6 U	6.5 U	8 U	8.1 U	7.1 U
Vanadium	7440-62-2	NE	NE	**10.5**	**9.5**	**9.3**	**9.8**	**9**	**10**	**9.6**	**9.7**	**9.3**	**9.4**	**11.8**	**11.1**	**11**
Zinc	7440-66-6	109	10000	**94.6 J**	**127 J**	**92.3 J**	**96.1 J**	**95 J**	**104 J**	**102 J**	**101 J**	**96.6 J**	**94.1 J**	**77.1 J**	**72.3 J**	**79.9 J**
Total Cyanide (mg/kg)																

Table 7B - Remaining Contamination
Surface Soil PCB, Pesticides, Herbicides, Metals, Total Cyanide Results
Elmira Water Street MGP Site

			Location Name	SS-1	SS-2	SS-3	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Sample Name	SS-1	SS-2	SS-3	Duplicate SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
			Start Depth	0	0	0	0	0	0	0	0	0	0	0	0	0
			End Depth	2	2	2	2	2	2	2	2	2	2	2	2	2
			Depth Unit	in	in	in	in	in	in	in	in	in	in	in	in	in
			Sample Date	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013	4/30/2013
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**													
Total Cyanide	57-12-5	27	27	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.54 J**	1.1 U	1.2 U	**1.5**	1.2 U

Table 7C - Remaining Contamination
Subsurface Soil VOC Results 0-15ft bgs
Elmira Water Street MGP Site

				Location Name	**MW-1**	**MW-5**	**SB-6**	**SB-10**	**SB-12**	**SB-14**	**SB18/TW-1**	**SB19/TW-2**	**SB20/TW-3**	**SB21/TW-4**	**SB22/TW-5**
				Sample Name	MW-1 (14-15)	MW-5 (14-15)	SB-6 (14-15)	SB-10 (9)	SB-12 (14-15)	SB-14 (14-15)	SB18/TW-1 (12-13)	SB19/TW-2 (11-12)	SB20/TW-3 (10-11)	SB21/TW-4 (12-13)	SB22/TW-5
				Start Depth	14	14	14	9	14	14	12	11	10	12	11
				End Depth	15	15	15	9	15	15	13	12	11	13	12
				Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
				Sample Date	5/22/2013	5/20/2013	5/16/2013	5/14/2013	5/20/2013	5/20/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013
				Parent Sample Code											
Analyte	CAS number	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**												
BTEX (mg/kg)															
Benzene	71-43-2	0.06	44		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Toluene	108-88-3	0.7	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	**0.00044 J**	**0.00043 J**	**0.0087 J**	0.0054 UJ	**0.00051 J**
Ethylbenzene	100-41-4	1	390		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	**0.019 J**	0.0054 UJ	0.0061 UJ
Total Xylene	1330-20-7	0.26	500		0.011 UJ	0.011 UJ	0.011 UJ	0.012 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 UJ	**0.02 J**	0.011 UJ	0.012 UJ
Total BTEX (mg/kg)	NA	NE	NE		ND	ND	ND	ND	ND	ND	**0.00044**	**0.00043**	**0.0477**	ND	**0.00051**
Other VOCs (mg/kg)															
Acetone	67-64-1	0.05	500		0.028 UJ	0.028 UJ	0.028 UJ	0.03 U	0.027 UJ	0.029 UJ	**0.016 J**	**0.0073 J**	0.27 UJ	**0.0091 J**	**0.019 J**
Bromodichloromethane	75-27-4	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Bromoform	75-25-2	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Bromomethane	74-83-9	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Carbon disulfide	75-15-0	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Carbon tetrachloride	56-23-5	0.76	22		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Chlorobenzene	108-90-7	1.1	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Chloroethane	75-00-3	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Chloroform	67-66-3	0.37	350		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Chloromethane	74-87-3	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Cyclohexane	110-82-7	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2-Dibromo-3-chloropropane	96-12-8	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Dibromochloromethane	124-48-1	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2-Dibromoethane (EDB)	106-93-4	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2-Dichlorobenzene	95-50-1	1.1	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	**0.094 J**	0.0054 UJ	0.0061 UJ
1,3-Dichlorobenzene	541-73-1	2.4	280		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,4-Dichlorobenzene	106-46-7	1.8	130		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,1-Dichloroethane	75-34-3	0.27	240		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2-Dichloroethane	107-06-2	0.02	30		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,1-Dichloroethene	75-35-4	0.33	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
cis-1,2-Dichloroethene	156-59-2	0.25	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
trans-1,2-Dichloroethene	156-60-5	0.19	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2-Dichloropropane	78-87-5	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
cis-1,3-Dichloropropene	10061-01-5	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
trans-1,3-Dichloropropene	10061-02-6	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
2-Hexanone	591-78-6	NE	NE		0.028 UJ	0.028 UJ	0.028 UJ	0.03 U	0.027 UJ	0.029 UJ	0.027 UJ	0.027 UJ	0.27 UJ	0.027 UJ	0.031 UJ
Isopropyl benzene	98-82-8	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	**0.016 J**	0.0054 UJ	0.0061 UJ
Methyl acetate	79-20-9	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Methyl ethyl ketone (2-Butanone)	78-93-3	0.12	500		0.028 UJ	0.028 UJ	0.028 UJ	0.03 U	0.027 UJ	0.029 UJ	**0.0078 J**	0.027 UJ	0.27 UJ	0.027 UJ	0.031 UJ
Methyl tert-butyl ether (MTBE)	1634-04-4	0.93	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE		0.028 UJ	0.028 UJ	0.028 UJ	0.03 U	0.027 UJ	0.029 UJ	0.027 UJ	0.027 UJ	0.27 UJ	0.027 UJ	0.031 UJ
Methylcyclohexane	108-87-2	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Methylene chloride	75-09-2	0.05	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	**0.0031 J**	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Styrene	100-42-5	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	**0.0064 J**	0.0054 UJ	0.0061 UJ
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Tetrachloroethene (PCE)	127-18-4	1.3	150		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	76-13-1	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,2,4-Trichlorobenzene	120-82-1	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,1,1-Trichloroethane	71-55-6	0.68	500		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
1,1,2-Trichloroethane	79-00-5	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Trichloroethene (TCE)	79-01-6	0.47	200		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Vinyl chloride	75-01-4	0.02	13		0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0059 U	0.0054 UJ	0.0057 UJ	0.0054 UJ	0.0054 UJ	0.054 UJ	0.0054 UJ	0.0061 UJ
Total VOCs (mg/kg)	NA	NE	NE		ND	ND	ND	ND	ND	ND	**0.02734**	**0.00773**	**0.1641**	**0.0091**	**0.01951**

Table 7C - Remaining Contamination
Subsurface Soil VOC Results 0-15ft bgs
Elmira Water Street MGP Site

			Location Name	TP-1	TP-4	TP-4	TP-5	TP-5	TP-5	TP-5	TP-6	TP-6
			Sample Name	TP-1 Outside E. Well (12'-13')	TP-4 Bottom (8')	TP-4 Side (3')	TP-5 E.Bottom (7')	TP-5 E.Side (3')	TP-5 W.Bottom (7')	TP-5 W.Side (3')	TP-6 Bottom (6')	TP-6 E.Side (3')
			Start Depth	12	8	3	7	3	7	3	6	3
			End Depth	13	8	3	7	3	7	3	6	3
			Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft
			Sample Date	5/1/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013
			Parent Sample Code									
Analyte	CAS number	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**									
BTEX (mg/kg)												
Benzene	71-43-2	0.06	44	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Toluene	108-88-3	0.7	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Ethylbenzene	100-41-4	1	390	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Total Xylene	1330-20-7	0.26	500	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U
Total BTEX (mg/kg)	NA	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other VOCs (mg/kg)												
Acetone	67-64-1	0.05	500	0.03 U	0.027 U	0.03 U	0.03 U	0.028 U	0.026 U	0.029 U	0.028 U	0.029 U
Bromodichloromethane	75-27-4	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Bromoform	75-25-2	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Bromomethane	74-83-9	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Carbon disulfide	75-15-0	NE	NE	0.006 UJ	0.0055 UJ	0.006 UJ	0.0061 UJ	0.0056 UJ	0.0053 UJ	0.0059 UJ	0.0057 UJ	0.0058 UJ
Carbon tetrachloride	56-23-5	0.76	22	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Chlorobenzene	108-90-7	1.1	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Chloroethane	75-00-3	NE	NE	0.006 UJ	0.0055 UJ	0.006 UJ	0.0061 UJ	0.0056 UJ	0.0053 UJ	0.0059 UJ	0.0057 UJ	0.0058 UJ
Chloroform	67-66-3	0.37	350	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Chloromethane	74-87-3	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Cyclohexane	110-82-7	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2-Dibromo-3-chloropropane	96-12-8	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Dibromochloromethane	124-48-1	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2-Dibromoethane (EDB)	106-93-4	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2-Dichlorobenzene	95-50-1	1.1	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,3-Dichlorobenzene	541-73-1	2.4	280	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,4-Dichlorobenzene	106-46-7	1.8	130	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1-Dichloroethane	75-34-3	0.27	240	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2-Dichloroethane	107-06-2	0.02	30	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1-Dichloroethene	75-35-4	0.33	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
cis-1,2-Dichloroethene	156-59-2	0.25	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
trans-1,2-Dichloroethene	156-60-5	0.19	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2-Dichloropropane	78-87-5	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
cis-1,3-Dichloropropene	10061-01-5	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
trans-1,3-Dichloropropene	10061-02-6	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
2-Hexanone	591-78-6	NE	NE	0.03 U	0.027 U	0.03 U	0.03 U	0.028 U	0.026 U	0.029 U	0.028 U	0.029 U
Isopropyl benzene	98-82-8	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Methyl acetate	79-20-9	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Methyl ethyl ketone (2-Butanone)	78-93-3	0.12	500	0.03 U	0.027 U	0.03 U	0.03 U	0.028 U	0.026 U	0.029 U	0.028 U	0.029 U
Methyl tert-butyl ether (MTBE)	1634-04-4	0.93	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE	0.03 U	0.027 U	0.03 U	0.03 U	0.028 U	0.026 U	0.029 U	0.028 U	0.029 U
Methylcyclohexane	108-87-2	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Methylene chloride	75-09-2	0.05	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Styrene	100-42-5	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Tetrachloroethene (PCE)	127-18-4	1.3	150	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	76-13-1	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,2,4-Trichlorobenzene	120-82-1	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1,1-Trichloroethane	71-55-6	0.68	500	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
1,1,2-Trichloroethane	79-00-5	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Trichloroethene (TCE)	79-01-6	0.47	200	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Vinyl chloride	75-01-4	0.02	13	0.006 U	0.0055 U	0.006 U	0.0061 U	0.0056 U	0.0053 U	0.0059 U	0.0057 U	0.0058 U
Total VOCs (mg/kg)	NA	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 7D - Remaining Contamination
Subsurface Soil SVOC Results 0 - 15 Feet bgs
Elmira Water Street MGP Site

			Location Name	MW-1	MW-5	SB-6	SB-10	SB-12	SB-14	SB18/TW-1	SB19/TW-2	SB20/TW-3	SB21/TW-4	SB22/TW-5
			Sample Name	MW-1 (14-15)	MW-5 (14-15)	SB-6 (14-15)	SB-10 (9)	SB-12 (14-15)	SB-14 (14-15)	SB18/TW-1 (12-13)	SB19/TW-2 (11-12)	SB20/TW-3 (10-11)	SB21/TW-4 (12-13)	SB22/TW-5
			Start Depth	14	14	14	9	14	14	12	11	10	12	11
			End Depth	15	15	15	9	15	15	13	12	11	13	12
			Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
			Sample Date	5/22/2013	5/20/2013	5/16/2013	5/14/2013	5/20/2013	5/20/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013
			Parent Sample Code											
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**											
PAHs (mg/kg)														
Acenaphthene	83-32-9	20	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**50**	**0.057 J**	**0.4**
Acenaphthylene	208-96-8	100	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**42**	**0.009 J**	**0.055 J**
Anthracene	120-12-7	100	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**83**	**0.024 J**	**0.96**
Benzo(a)anthracene	56-55-3	1	5.6	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**66**	0.18 U	**2**
Benzo(b)fluoranthene	205-99-2	1	5.6	0.19 U	**0.0076 J**	0.19 U	0.2 U	0.18 U	**0.022 J**	0.18 U	0.18 U	**63**	0.18 U	**3.2**
Benzo(k)fluoranthene	207-08-9	0.8	56	0.19 U	**0.0037 J**	0.19 U	0.2 U	0.18 U	**0.012 J**	0.18 U	0.18 U	**32**	0.18 U	**1.2**
Benzo(g,h,i)perylene	191-24-2	100	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	**0.011 J**	0.18 U	0.18 U	**7**	0.18 U	**0.54**
Benzo(a)pyrene	50-32-8	1	1	0.19 U	**0.0051 J**	0.19 U	0.2 U	0.18 U	**0.011 J**	0.18 U	0.18 U	**47**	0.18 U	**2**
Chrysene	218-01-9	1	56	0.19 U	**0.0072 J**	0.19 U	0.2 U	0.18 U	**0.016 J**	0.18 U	0.18 U	**56**	0.18 U	**2.1**
Dibenz(a,h)anthracene	53-70-3	0.33	0.56	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Fluoranthene	206-44-0	100	500	0.19 U	**0.01 J**	0.19 U	0.2 U	0.18 U	**0.021 J**	0.18 U	0.18 U	**160**	**0.29**	**4.5**
Fluorene	86-73-7	30	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**87**	**0.088 J**	**0.54**
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	5.6	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	**0.0063 J**	0.18 U	0.18 U	**7.7**	0.18 U	**0.48**
2-Methylnaphthalene	91-57-6	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**2.6 J**	0.18 U	**0.051 J**
Naphthalene	91-20-3	12	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**7.8**	0.18 U	**0.12 J**
Phenanthrene	85-01-8	100	500	0.19 U	**0.011 J**	0.19 U	0.2 U	0.18 U	**0.01 J**	**0.0054 J**	**0.006 J**	**260**	**0.013 J**	**3.8**
Pyrene	129-00-0	100	500	0.19 U	**0.0082 J**	0.19 U	0.2 U	0.18 U	**0.018 J**	**0.0025 J**	**0.0022 J**	**91**	**0.19**	**3.1**
TPAH17 (mg/kg)	NA	NE	500	ND	**0.0528**	ND	ND	ND	**0.1273**	**0.0079**	**0.0082**	**1062.1**	**0.671**	**25.046**
Other SVOCs (mg/kg)														
Acetophenone	98-86-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**0.25 J**	0.18 U	0.21 U
Atrazine	1912-24-9	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Benzaldehyde	100-52-7	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Biphenyl (1,1-Biphenyl)	92-52-4	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**18**	0.18 U	**0.026 J**
Bis(2-chloroethoxy)methane	111-91-1	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Bis(2-chloroethyl)ether	111-44-4	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Bis(chloroisopropyl)ether	108-60-1	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	NE	**0.18 J**	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4-Bromophenyl phenyl ether	101-55-3	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Butyl benzyl phthalate	85-68-7	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Caprolactam	105-60-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Carbazole	86-74-8	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**10**	0.18 U	**0.46**
4-Chloro-3-methylphenol	59-50-7	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4-Chloroaniline	106-47-8	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2-Chloronaphthalene	91-58-7	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2-Chlorophenol	95-57-8	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Dibenzofuran	132-64-9	7	350	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**58**	0.18 U	**0.35**
3,3-Dichlorobenzidine	91-94-1	NE	NE	0.19 U	0.2 U	0.19 UJ	0.2 UJ	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2,4-Dichlorophenol	120-83-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Diethyl phthalate	84-66-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Dimethyl phthalate	131-11-3	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2,4-Dimethylphenol	105-67-9	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Di-n-butyl phthalate	84-74-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
2,4-Dinitrophenol	51-28-5	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
2,4-Dinitrotoluene	121-14-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2,6-Dinitrotoluene	606-20-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Di-n-octyl phthalate	117-84-0	NE	NE	**0.062 J**	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Hexachlorobenzene	118-74-1	0.33	6	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Hexachlorobutadiene	87-68-3	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Hexachlorocyclopentadiene	77-47-4	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Hexachloroethane	67-72-1	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Isophorone	78-59-1	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2-Methylphenol (o-Cresol)	95-48-7	0.33	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4-Methylphenol (p-Cresol)	106-44-5	0.33	500	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	**0.76 J**	0.36 U	0.41 U
2-Nitroaniline	88-74-4	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
3-Nitroaniline	99-09-2	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
4-Nitroaniline	100-01-6	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
Nitrobenzene	98-95-3	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2-Nitrophenol	88-75-5	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
4-Nitrophenol	100-02-7	NE	NE	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
N-Nitrosodi-n-propylamine	621-64-7	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
N-Nitrosodiphenylamine	86-30-6	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Pentachlorophenol	87-86-5	0.8	6.7	0.38 U	0.38 U	0.37 U	0.38 U	0.36 U	0.38 U	0.36 U	0.36 U	7.9 U	0.36 U	0.41 U
Phenol	108-95-2	0.33	500	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	**0.45 J**	0.18 U	0.21 U
2,4,5-Trichlorophenol	95-95-4	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
2,4,6-Trichlorophenol	88-06-2	NE	NE	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U	0.18 U	0.18 U	4.1 U	0.18 U	0.21 U
Total SVOCs (mg/kg)	NA	NE	NE	**0.242**	**0.0528**	ND	ND	ND	**0.1273**	**0.0079**	**0.0082**	**1149.56**	**0.671**	**25.882**

Table 7D - Remaining Contamination
Subsurface Soil SVOC Results 0 - 15 Feet bgs
Elmira Water Street MGP Site

			Location Name	**TP-1**	**TP-4**	**TP-4**	**TP-5**	**TP-5**	**TP-5**	**TP-5**	**TP-6**	**TP-6**
			Sample Name	TP-1 Outside E. Well (12'-13')	TP-4 Bottom (8')	TP-4 Side (3')	TP-5 E.Bottom (7')	TP-5 E.Side (3')	TP-5 W.Bottom (7')	TP-5 W.Side (3')	TP-6 Bottom (6')	TP-6 E.Side (3')
			Start Depth	12	8	3	7	3	7	3	6	3
			End Depth	13	8	3	7	3	7	3	6	3
			Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft
			Sample Date	5/1/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013
			Parent Sample Code									
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**									
PAHs (mg/kg)												
Acenaphthene	83-32-9	20	500	0.21 U	0.19 U	0.2 U	**0.11 J**	2 U	0.19 U	2 U	**0.0046 J**	0.2 U
Acenaphthylene	208-96-8	100	500	0.21 U	0.19 U	0.2 U	**1.6 J**	**0.12 J**	0.19 U	**0.12 J**	**0.0088 J**	0.2 U
Anthracene	120-12-7	100	500	0.21 U	0.19 U	0.2 U	**2.3 J**	**0.19 J**	0.19 U	**0.3 J**	**0.044 J**	**0.012 J**
Benzo(a)anthracene	56-55-3	1	5.6	0.21 U	0.19 U	0.2 U	**14**	**2.1**	0.19 U	**1.7 J**	**0.27**	**0.088 J**
Benzo(b)fluoranthene	205-99-2	1	5.6	0.21 U	0.19 U	**0.11 J**	**14**	**2.6**	0.19 U	**2**	**0.4**	**0.19 J**
Benzo(k)fluoranthene	207-08-9	0.8	56	0.21 U	0.19 U	0.2 U	**6.8**	**1.3 J**	0.19 U	**0.75 J**	**0.15 J**	**0.054 J**
Benzo(g,h,i)perylene	191-24-2	100	500	0.21 U	0.19 U	0.2 U	**3.7 J**	**0.85 J**	0.19 U	**0.48 J**	**0.11 J**	**0.064 J**
Benzo(a)pyrene	50-32-8	1	1	0.21 U	0.19 U	0.2 U	**11**	**1.7 J**	0.19 U	**1.1 J**	**0.25**	**0.082 J**
Chrysene	218-01-9	1	56	**0.023 J**	0.19 U	0.2 U	**13**	**2**	0.19 U	**1.5 J**	**0.26**	**0.077 J**
Dibenz(a,h)anthracene	53-70-3	0.33	0.56	0.21 U	0.19 U	0.2 U	**4.2**	**1.6 J**	0.19 U	**1.5 J**	**0.16 J**	**0.15 J**
Fluoranthene	206-44-0	100	500	**0.026 J**	0.19 U	**0.0054 J**	**13**	**2.3**	0.19 U	**2.1**	**0.34**	**0.088 J**
Fluorene	86-73-7	30	500	0.21 U	0.19 U	0.2 U	**0.64 J**	2 U	0.19 U	2 U	0.2 U	0.2 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	5.6	0.21 U	0.19 U	**0.14 J**	**6**	**2**	0.19 U	**1.7 J**	**0.22**	**0.18 J**
2-Methylnaphthalene	91-57-6	NE	NE	0.21 U	0.19 U	0.2 U	**0.26 J**	2 U	0.19 U	2 U	**0.0063 J**	0.2 U
Naphthalene	91-20-3	12	500	0.21 U	0.19 U	0.2 U	**0.29 J**	2 U	0.19 U	2 U	0.2 U	0.2 U
Phenanthrene	85-01-8	100	500	0.21 U	0.19 U	0.2 U	**6.5**	2 U	0.19 U	2 U	0.2 U	0.2 U
Pyrene	129-00-0	100	500	0.21 U	0.19 U	0.2 U	**13**	**2.2**	0.19 U	**2**	**0.31**	**0.093 J**
TPAH17 (mg/kg)	NA	NE	500	**0.049**	ND	**0.2554**	**110.4**	**18.96**	ND	**15.25**	**2.7337**	**1.078**
Other SVOCs (mg/kg)												
Acetophenone	98-86-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Atrazine	1912-24-9	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Benzaldehyde	100-52-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Biphenyl (1,1-Biphenyl)	92-52-4	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Bis(2-chloroethoxy)methane	111-91-1	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Bis(2-chloroethyl)ether	111-44-4	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Bis(chloroisopropyl)ether	108-60-1	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4-Bromophenyl phenyl ether	101-55-3	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Butyl benzyl phthalate	85-68-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Caprolactam	105-60-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Carbazole	86-74-8	NE	NE	0.21 U	0.19 U	0.2 U	**0.42 J**	2 U	0.19 U	**0.061 J**	**0.016 J**	0.2 U
4-Chloro-3-methylphenol	59-50-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4-Chloroaniline	106-47-8	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2-Chloronaphthalene	91-58-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2-Chlorophenol	95-57-8	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Dibenzofuran	132-64-9	7	350	0.21 U	0.19 U	0.2 U	**0.38 J**	2 U	0.19 U	**0.039 J**	0.2 U	0.2 U
3,3-Dichlorobenzidine	91-94-1	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2,4-Dichlorophenol	120-83-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Diethyl phthalate	84-66-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Dimethyl phthalate	131-11-3	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2,4-Dimethylphenol	105-67-9	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Di-n-butyl phthalate	84-74-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
2,4-Dinitrophenol	51-28-5	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
2,4-Dinitrotoluene	121-14-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2,6-Dinitrotoluene	606-20-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Di-n-octyl phthalate	117-84-0	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Hexachlorobenzene	118-74-1	0.33	6	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Hexachlorobutadiene	87-68-3	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Hexachlorocyclopentadiene	77-47-4	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Hexachloroethane	67-72-1	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Isophorone	78-59-1	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2-Methylphenol (o-Cresol)	95-48-7	0.33	500	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4-Methylphenol (p-Cresol)	106-44-5	0.33	500	0.4 U	0.37 U	0.4 U	**0.28 J**	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
2-Nitroaniline	88-74-4	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
3-Nitroaniline	99-09-2	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
4-Nitroaniline	100-01-6	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
Nitrobenzene	98-95-3	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2-Nitrophenol	88-75-5	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
4-Nitrophenol	100-02-7	NE	NE	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
N-Nitrosodi-n-propylamine	621-64-7	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
N-Nitrosodiphenylamine	86-30-6	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Pentachlorophenol	87-86-5	0.8	6.7	0.4 U	0.37 U	0.4 U	8.1 U	3.9 U	0.36 U	3.8 U	0.38 U	0.39 U
Phenol	108-95-2	0.33	500	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2,4,5-Trichlorophenol	95-95-4	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
2,4,6-Trichlorophenol	88-06-2	NE	NE	0.21 U	0.19 U	0.2 U	4.2 U	2 U	0.19 U	2 U	0.2 U	0.2 U
Total SVOCs (mg/kg)	NA	NE	NE	**0.049**	ND	**0.2554**	**111.48**	**18.96**	ND	**15.35**	**2.7497**	**1.078**

Table 7E - Remaining Contamination
Subsurface Soil PCBs, Metals, and Total Cyanide Results 0-15ft bgs
Elmira Water Street MGP Site

			Location Name	**MW-1**	**MW-5**	**SB-6**	**SB-10**	**SB-12**	**SB-14**	**SB18/TW-1**	**SB19/TW-2**	**SB20/TW-3**	**SB21/TW-4**	**SB22/TW-5**
			Sample Name	MW-1 (14-15)	MW-5 (14-15)	SB-6 (14-15)	SB-10 (9)	SB-12 (14-15)	SB-14 (14-15)	SB18/TW-1 (12-13)	SB19/TW-2 (11-12)	SB20/TW-3 (10-11)	SB21/TW-4 (12-13)	SB22/TW-5
			Start Depth	14	14	14	9	14	14	12	11	10	12	11
			End Depth	15	15	15	9	15	15	13	12	11	13	12
			Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
			Sample Date	5/22/2013	5/20/2013	5/16/2013	5/14/2013	5/20/2013	5/20/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013	5/22/2013
			Parent Sample Code											
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**											
PCB Aroclors (mg/kg)														
Aroclor 1016	12674-11-2	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	11104-28-2	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	11141-16-5	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	53469-21-9	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	12672-29-6	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	11097-69-1	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	11096-82-5	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	37324-23-5	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	11100-14-4	NE	NE	NA	NA	NA	0.25 UJ	NA	NA	NA	NA	NA	NA	NA
Total PCBs (mg/kg)	1336-36-3	0.1	1	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
Pesticides (mg/kg)														
Aldrin	309-00-2	0.005	0.68	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	319-84-6	0.02	3.4	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
beta-BHC	319-85-7	0.036	3	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
gamma-BHC	58-89-9	0.1	9.2	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
delta-BHC	319-86-8	0.04	500	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Chlordane (Alpha & Gamma)	57-74-9	NE	NE	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA
alpha-chlordane	5103-71-9	0.094	24	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
4,4-DDD	72-54-8	0.0033	92	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	0.0033	62	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	0.0033	47	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.005	1.4	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	2.4	200	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	2.4	200	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	1031-07-8	2.4	200	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	0.014	89	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	7421-93-4	NE	NE	NA	NA	NA	0.002 UJ	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	53494-70-5	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.042	15	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	1024-57-3	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	NE	NE	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA
Total Pesticides (mg/kg)	NA	NE	NE	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
Herbicides (mg/kg)														
2,4-D	94-75-7	NE	NE	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenoxyacetic Acid	93-76-5	NE	NE	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA
Silvex	93-72-1	3.8	500	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA
Total Herbicides (mg/kg)	NA	NE	NE	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)														
Aluminum	7429-90-5	NE	NE	**9370 J**	**5070**	**6350 J**	**8170 J**	**5710**	**7710**	**7540 J**	**6320 J**	**7900 J**	**3520 J**	**7650 J**
Antimony	7440-36-0	NE	NE	17.6 U	17 UJ	17 U	19.8 UJ	15.9 UJ	15.6 UJ	17.3 U	16.7 U	17.7 U	15 U	18 U
Arsenic	7440-38-2	13	16	**11.3**	**5.3 J**	**6.1**	**5.2**	**6.3 J**	**7.7 J**	**3.2**	**3.6**	**9.1**	**4.3**	**6.7**
Barium	7440-39-3	350	400	**144**	**50.8 J**	**47.1 J**	**151**	**51.7 J**	**76.9 J**	**54.8**	**65.6**	**191**	**78.2**	**90.4**
Beryllium	7440-41-7	7.2	590	**0.59**	**0.32**	**0.34**	**0.43**	**0.3**	**0.41**	**0.32**	**0.26**	**0.39**	**0.18 J**	**0.38**
Cadmium	7440-43-9	2.5	9.3	**0.18 J**	**0.097 J**	**0.22 J**	0.26 U	**0.15 J**	**0.24**	**0.14 J**	**0.097 J**	**0.1 J**	**0.1 J**	**0.2 J**
Calcium	7440-70-2	NE	NE	**1990 J**	**1190**	**1790**	**4420**	**19800**	**7300**	**43200 J**	**56200 J**	**12900 J**	**34600 J**	**12100 J**
Chromium	7440-47-3	NE	NE	**10.3**	**6.4**	**9.3**	**9.6**	**6.7**	**9.4**	**12.5**	**8.1**	**11.2**	**5.1**	**44.5**
Cobalt	7440-48-4	NE	NE	**8**	**4.5**	**8.6**	**7.1**	**5.2**	**7.4**	**6.4**	**5.7**	**7.5**	**3.2**	**8.2**
Copper	7440-50-8	50	270	**30.3 J**	**16.7**	**26.5**	**12**	**19.3**	**22.2**	**23.7 J**	**20.7 J**	**31.7 J**	**14.7 J**	**35.7 J**
Iron	7439-89-6	NE	NE	**22700**	**11300**	**15400**	**15200**	**13500**	**17400**	**16400**	**13700**	**20100**	**7590**	**26900**
Lead	7439-92-1	63	1000	**20 J**	**8.9**	**14.3**	11.8 U	**9.5**	**22.7**	**6.5 J**	**7.2 J**	**56.5 J**	**4.8 J**	**93.6 J**
Magnesium	7439-95-4	NE	NE	**2610 J**	**1510 J**	**2810 J**	**2980**	**11500 J**	**4570 J**	**7080 J**	**6450 J**	**4480 J**	**6060 J**	**3700 J**
Manganese	7439-96-5	1600	10000	**950**	**469**	**612**	**610**	**610**	**1330**	**430**	**365**	**1450**	**422**	**366**
Mercury	7439-97-6	0.18	2.8	**0.036**	**0.024**	**0.021 J**	**0.029**	**0.01 J**	**0.024**	0.022 U	0.021 U	**0.3**	0.022 U	**0.17**
Nickel	7440-02-0	30	310	**20.2**	**11.3**	**18.5**	**14**	**13**	**18.5**	**15.8**	**14**	**16.7**	**9.1**	**35.2**
Potassium	7440-09-7	NE	NE	**1330 J**	**854 J**	**842**	**1710 J**	**1020 J**	**971 J**	**849 J**	**816 J**	**830 J**	**508 J**	**743 J**
Selenium	7782-49-2	3.9	1500	4.7 U	4.5 U	4.5 U	**0.87 J**	4.2 U	4.2 U	4.6 U	4.5 U	**0.6 J**	4 U	**0.49 J**
Silver	7440-22-4	2	1500	0.59 U	0.57 U	0.57 U	0.66 U	0.53 U	0.52 U	0.58 U	0.56 U	0.59 U	0.5 U	0.6 U
Sodium	7440-23-5	NE	NE	**125 J**	**33.4 J**	**52.2 J**	185 U	**56.8 J**	**61.9 J**	**89.2 J**	**82.9 J**	**136 J**	**102 J**	**95.5 J**
Thallium	7440-28-0	NE	NE	7 U	6.8 U	6.8 U	7.9 U	6.4 U	**0.79 J**	6.9 U	6.7 U	**0.93 J**	6 U	7.2 U
Vanadium	7440-62-2	NE	NE	**16.4**	**7.8**	**10.8**	**13.5 J**	**9.3**	**11.8**	**11.9**	**8.9**	**11.5**	**6.3**	**13.3**
Zinc	7440-66-6	109	10000	**96.9 J**	**46.8**	**72.3 J**	**50.2 J**	**50.4**	**69.9**	**54.5 J**	**47.3 J**	**97.8 J**	**43.5 J**	**89 J**
Cyanide														
Total Cyanide (mg/kg)	57-12-5	27	27	1.1 U	1.1 U	1.1 U	1.1 U	0.95 U	0.98 U	1.1 U	1 U	**1.4**	1.1 U	1.1 U

Table 7E - Remaining Contamination
Subsurface Soil PCBs, Metals, and Total Cyanide Results 0-15ft bgs
Elmira Water Street MGP Site

			Location Name	TP-1	TP-4	TP-4	TP-5	TP-5	TP-5	TP-5	TP-6	TP-6
			Sample Name	TP-1 Outside E. Well (12'-13')	TP-4 Bottom (8')	TP-4 Side (3')	TP-5 E.Bottom (7')	TP-5 E.Side (3')	TP-5 W.Bottom (7')	TP-5 W.Side (3')	TP-6 Bottom (6')	TP-6 E.Side (3')
			Start Depth	12	8	3	7	3	7	3	6	3
			End Depth	13	8	3	7	3	7	3	6	3
			Depth Unit	ft	ft	ft	ft	ft	ft	ft	ft	ft
			Sample Date	5/1/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013	5/2/2013
			Parent Sample Code									
Analyte	**CAS number**	**6 NYCRR 375 SCO UNRESTRICTED USE**	**6 NYCRR 375 SCO COMMERCIAL USE**									
PCB Aroclors (mg/kg)												
Aroclor 1016	12674-11-2	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	11104-28-2	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	11141-16-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	53469-21-9	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	12672-29-6	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	11097-69-1	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	11096-82-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	37324-23-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	11100-14-4	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs (mg/kg)	1336-36-3	0.1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (mg/kg)												
Aldrin	309-00-2	0.005	0.68	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	319-84-6	0.02	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
beta-BHC	319-85-7	0.036	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC	58-89-9	0.1	9.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	319-86-8	0.04	500	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (Alpha & Gamma)	57-74-9	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
alpha-chlordane	5103-71-9	0.094	24	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	5103-74-2	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4-DDD	72-54-8	0.0033	92	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	0.0033	62	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	0.0033	47	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	959-98-8	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	33213-65-9	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	1031-07-8	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	0.014	89	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	7421-93-4	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	53494-70-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.042	15	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	1024-57-3	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Pesticides (mg/kg)	NA	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (mg/kg)												
2,4-D	94-75-7	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenoxyacetic Acid	93-76-5	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silvex	93-72-1	3.8	500	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Herbicides (mg/kg)	NA	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)												
Aluminum	7429-90-5	NE	NE	**7640**	**5530**	**7270**	**9190**	**11000**	**8720**	**7660**	**9560**	**7250**
Antimony	7440-36-0	NE	NE	19 U	15.7 U	16.7 U	20.2 U	18 U	17.8 U	18.4 U	18.3 U	19.1 U
Arsenic	7440-38-2	13	16	**4.5**	**4.8**	**4.3**	**8.6**	**8.8**	**8**	**12.4**	**8**	**7.1**
Barium	7440-39-3	350	400	**121 J**	**39.4 J**	**94.3 J**	**120 J**	**141 J**	**60.6 J**	**78.8 J**	**95.3 J**	**127 J**
Beryllium	7440-41-7	7.2	590	**0.44**	**0.3**	**0.4**	**0.48**	**0.63**	**0.47**	**0.46**	**0.54**	**0.44**
Cadmium	7440-43-9	2.5	9.3	**0.083 J**	**0.11 J**	**0.073 J**	**0.22 J**	**0.16 J**	**0.12 J**	**0.11 J**	**0.31**	**0.12 J**
Calcium	7440-70-2	NE	NE	**1920**	**17400**	**1190**	**52200**	**21400**	**1390**	**32500**	**2020**	**3930**
Chromium	7440-47-3	NE	NE	**9.3**	**6.6**	**9**	**11.7**	**14.1**	**11.1**	**10.4**	**11.8**	**9.1**
Cobalt	7440-48-4	NE	NE	**6.8**	**4.4**	**7**	**7.5**	**8.5**	**8.6**	**7.1**	**7.4**	**6.7**
Copper	7440-50-8	50	270	**11.6**	**16.6**	**9.9**	**27.7**	**31.6**	**21.9**	**20.2**	**18.6**	**75.2**
Iron	7439-89-6	NE	NE	**16000**	**12500**	**15200**	**19600**	**20300**	**22300**	**17900**	**22500**	**16700**
Lead	7439-92-1	63	1000	**11.3 J**	**7.1 J**	**12.8 J**	**178 J**	**60.9 J**	**218 J**	**71 J**	**48.9 J**	**98.3 J**
Magnesium	7439-95-4	NE	NE	**2180 J**	**4360 J**	**2110 J**	**4320 J**	**3400 J**	**2660 J**	**2810 J**	**2410 J**	**2150 J**
Manganese	7439-96-5	1600	10000	**420 J**	**553 J**	**527 J**	**393 J**	**558 J**	**816 J**	**385 J**	**464 J**	**565 J**
Mercury	7439-97-6	0.18	2.8	**0.026**	**0.012 J**	**0.057**	**0.33**	**0.15**	**0.019 J**	**0.22**	**0.067**	**0.11**
Nickel	7440-02-0	30	310	**15.1**	**11.5**	**15.1**	**18.3**	**20.8**	**19.4**	**16.4**	**16.5**	**15.3**
Potassium	7440-09-7	NE	NE	**1310**	**1040**	**1640**	**1590**	**1970**	**1020**	**1410**	**1170**	**1210**
Selenium	7782-49-2	3.9	1500	5.1 U	**0.59 J**	**0.76 J**	**1.5 J**	**1.1 J**	**2 J**	**1.3 J**	**0.74 J**	**1.2 J**
Silver	7440-22-4	2	1500	0.63 U	0.52 U	0.56 U	0.67 U	0.6 U	0.59 U	0.61 U	0.61 U	0.64 U
Sodium	7440-23-5	NE	NE	**58.4 J**	**94.3 J**	**54.9 J**	**137 J**	**211**	**53.4 J**	**131 J**	**100 J**	**72 J**
Thallium	7440-28-0	NE	NE	7.6 U	6.3 U	6.7 U	8.1 U	7.2 U	7.1 U	7.4 U	7.3 U	7.6 U
Vanadium	7440-62-2	NE	NE	**10.7**	**9.2**	**10.3**	**15.2**	**18.2**	**14.3**	**16.4**	**14.9**	**10.7**
Zinc	7440-66-6	109	10000	**50.1 J**	**50.2 J**	**47.1 J**	**110 J**	**107 J**	**198 J**	**63.1 J**	**91.2 J**	**73.9 J**
Cyanide												
Total Cyanide (mg/kg)	57-12-5	27	27	1.1 U	1 U	1.2 U	**0.89 J**	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U

Table 7F - Remaining Contamination
Sediment VOC Results
Elmira Water Street MGP Site

				Location Name	C1	C2	C3	C4	C5	C6	SD4	SD5	SD6	SD7	SD8	SD9	SD10	SD10	SD13	SD15	SD17	SD19	SD21	SD22	SD23	SD24
				Sample Name	C1 (1.5-2)	C2 (1.5-2.0)	C3 (1-1.5)	C4 (1.5-2)	C5 (3.5-4)	C6 (1-1.5)	SD4 (0-6)	SD5 (0-6)	SD6 (0-6)	SD7 (0-6)	SD8 (0-6)	SD9 (0-6)	SD10 (0-6)	SD10(-06) Duplicate	SD13 (0-6)	SD15 (0-6)	SD17 (0-6)	SD19 (0-6)	SD21 (0-6)	SD22 (0-6)	SD23 (0-6)	SD24 (0-6)
				Sample Date	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	**CAS number**	**NYSDEC ER-L**	**NYSDEC ER-M**																							
BTEX (mg/kg)																										
Benzene	71-43-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Toluene	108-88-3	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	**0.00085 J**	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	**0.0012 J**	**0.0013 J**	0.0065 UJ	0.0062 UJ	0.0064 UJ	**0.001 J**	0.0059 UJ	**0.00089 J**	0.0056 UJ	**0.001 J**	0.0055 UJ
Ethylbenzene	100-41-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Total Xylene	1330-20-7	NE	NE		0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.013 UJ	0.013 UJ	0.012 UJ	0.013 UJ	0.013 UJ	0.013 UJ	0.013 UJ	0.012 UJ	0.013 UJ	0.013 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.011 UJ
Total BTEX (mg/kg)	NA	NE	NE		ND	ND	ND	ND	ND	ND	**0.00085**	ND	ND	ND	ND	**0.0012**	**0.0013**	ND	ND	ND	**0.001**	ND	**0.00089**	ND	**0.001**	ND
Other VOCs (mg/kg)																										
Acetone	67-64-1	NE	NE		0.031 UJ	0.031 UJ	0.029 UJ	0.03 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.032 UJ	0.034 UJ	0.031 UJ	0.032 UJ	0.033 UJ	0.032 UJ	0.032 UJ	0.031 UJ	0.032 UJ	0.032 UJ	0.03 UJ	0.03 UJ	0.028 UJ	0.028 UJ	0.028 UJ
Bromodichloromethane	75-27-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Bromoform	75-25-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Bromomethane	74-83-9	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Carbon disulfide	75-15-0	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Carbon tetrachloride	56-23-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Chlorobenzene	108-90-7	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Chloroethane	75-00-3	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Chloroform	67-66-3	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Chloromethane	74-87-3	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Cyclohexane	110-82-7	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2-Dibromo-3-chloropropane	96-12-8	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Dibromochloromethane	124-48-1	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2-Dibromoethane (EDB)	106-93-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2-Dichlorobenzene	95-50-1	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,3-Dichlorobenzene	541-73-1	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,4-Dichlorobenzene	106-46-7	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1-Dichloroethane	75-34-3	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2-Dichloroethane	107-06-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1-Dichloroethene	75-35-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
cis-1,2-Dichloroethene	156-59-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
trans-1,2-Dichloroethene	156-60-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2-Dichloropropane	78-87-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
cis-1,3-Dichloropropene	10061-01-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
trans-1,3-Dichloropropene	10061-02-6	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
2-Hexanone	591-78-6	NE	NE		0.031 UJ	0.031 UJ	0.029 UJ	0.03 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.032 UJ	0.034 UJ	0.031 UJ	0.032 UJ	0.033 UJ	0.032 UJ	0.032 UJ	0.031 UJ	0.032 UJ	0.032 UJ	0.03 UJ	0.03 UJ	0.028 UJ	0.028 UJ	0.028 UJ
Isopropyl benzene	98-82-8	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Methyl acetate	79-20-9	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Methyl ethyl ketone (2-Butanone)	78-93-3	NE	NE		0.031 UJ	0.031 UJ	0.029 UJ	0.03 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.032 UJ	0.034 UJ	0.031 UJ	0.032 UJ	0.033 UJ	0.032 UJ	0.032 UJ	0.031 UJ	0.032 UJ	0.032 UJ	0.03 UJ	0.03 UJ	0.028 UJ	0.028 UJ	0.028 UJ
Methyl tert-butyl ether (MTBE)	1634-04-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE		0.031 UJ	0.031 UJ	0.029 UJ	0.03 UJ	0.031 UJ	0.031 UJ	0.031 UJ	0.032 UJ	0.034 UJ	0.031 UJ	0.032 UJ	0.033 UJ	0.032 UJ	0.032 UJ	0.031 UJ	0.032 UJ	0.032 UJ	0.03 UJ	0.03 UJ	0.028 UJ	0.028 UJ	0.028 UJ
Methylcyclohexane	108-87-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Methylene chloride	75-09-2	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Styrene	100-42-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Tetrachloroethene (PCE)	127-18-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	76-13-1	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,2,4-Trichlorobenzene	120-82-1	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1,1-Trichloroethane	71-55-6	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
1,1,2-Trichloroethane	79-00-5	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Trichloroethene (TCE)	79-01-6	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Vinyl chloride	75-01-4	NE	NE		0.0061 UJ	0.0062 UJ	0.0058 UJ	0.0061 UJ	0.0061 UJ	0.0061 UJ	0.0062 UJ	0.0063 UJ	0.0067 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0064 UJ	0.0065 UJ	0.0062 UJ	0.0064 UJ	0.0065 UJ	0.0059 UJ	0.006 UJ	0.0056 UJ	0.0055 UJ	0.0055 UJ
Total VOCs (mg/kg)	NA	NE	NE		ND	ND	ND	ND	ND	ND	**0.00085**	ND	ND	ND	ND	**0.0012**	**0.0013**	ND	ND	ND	**0.001**	ND	**0.00089**	ND	**0.001**	ND

Table 7G - Remaining Contamination
Sediment PAH Results
Elmira Water Street MGP Site

				Location Name	C1	C2	C3	C4	C5	C6	SD1	SD2	SD3	SD4	SD5	SD6	SD7	SD8	SD9	SD10	SD10
				Sample Name	C1 (1.5-2)	C2 (1.5-2.0)	C3 (1-1.5)	C4 (1.5-2)	C5 (3.5-4)	C6 (1-1.5)	SD1 (0-6)	SD2 (0-6)	SD3 (0-6)	SD4 (0-6)	SD5 (0-6)	SD6 (0-6)	SD7 (0-6)	SD8 (0-6)	SD9 (0-6)	SD10 (0-6)	SD10(0-6) Duplicate
				Sample Date	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	**CAS number**	**NYSDEC ER-L**	**NYSDEC ER-M**																		
PAHs (mg/kg)																					
Acenaphthene	83-32-9	0.016	0.5	0.066 U	**0.038 J**	**0.17**	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.05 J**	**0.085**	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
Acenaphthylene	208-96-8	0.044	0.64	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.061 J**	**0.1**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.047 J**
Anthracene	120-12-7	0.0853	1.1	0.066 U	**0.094**	**0.47**	0.066 U	**0.087**	**0.047 J**	0.066 U	0.066 U	0.066 U	0.066 U	**0.11**	**0.23**	**0.097**	**0.06 J**	**0.78**	0.066 U	0.066 U	**0.13**
Benzo(a)anthracene	56-55-3	0.261	1.6	0.066 U	**0.23**	**0.83**	**0.083**	**0.47**	**0.14**	**0.044 J**	**0.12**	**0.11**	**0.42**	**0.79**	**0.38**	**0.12**	**0.14**	**0.14**	**0.23 J**	**0.43 J**
Benzo(g,h,i)perylene	191-24-2	NE	NE	0.066 U	**0.12**	**0.42**	**0.046 J**	**0.23**	**0.079**	**0.04 J**	**0.086**	**0.064 J**	**0.18**	**0.3**	**0.24**	**0.052 J**	**0.065 J**	**0.07**	**0.095**	**0.2**
Benzo(a)pyrene	50-32-8	0.43	1.6	0.066 U	**0.16**	**0.57**	**0.06 J**	**0.32**	**0.098**	**0.037 J**	**0.097**	**0.081**	**0.29**	**0.53**	**0.29**	**0.081**	**0.094**	**0.1**	**0.16 J**	**0.33 J**
Chrysene	218-01-9	0.384	2.8	0.066 U	**0.23**	**0.8**	**0.078**	**0.46**	**0.13**	**0.058 J**	**0.12**	**0.097**	**0.36**	**0.68**	**0.42**	**0.11**	**0.34**	**0.16**	**0.19 J**	**0.41 J**
Dibenz(a,h)anthracene	53-70-3	0.0634	0.26	0.066 U	0.067 U	**0.089**	0.066 U	**0.056 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.055 J**	**0.091**	**0.052 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.051 J**
Fluoranthene	206-44-0	0.6	5.1	**0.062 J**	**0.56**	**2**	**0.16**	**0.72**	**0.3**	**0.11**	**0.23**	**0.2**	**0.66**	**1.2**	**1.1**	**0.28**	**0.24**	**0.28**	**0.42**	**0.69**
Fluorene	86-73-7	0.019	0.54	0.066 U	**0.062 J**	**0.22**	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.066**	**0.1**	**0.096**	0.067 U	**0.062 J**	0.066 U	0.066 U	0.067 U
2-Methylnaphthalene	91-57-6	0.07	0.67	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
Naphthalene	91-20-3	0.16	2.1	0.066 U	**0.084**	**0.062 J**	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.055 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
Phenanthrene	85-01-8	0.24	1.5	0.066 U	**0.55**	**1.6**	**0.079**	**0.35**	**0.22**	**0.068**	**0.098**	**0.093**	**0.37**	**0.73**	**0.9**	**0.21**	**0.2**	**0.11**	**0.069 J**	**0.37 J**
Pyrene	129-00-0	0.665	2.6	**0.065 J**	**0.48**	**1.7**	**0.15**	**0.78**	**0.27**	**0.09**	**0.18**	**0.16**	**0.58**	**1**	**0.85**	**0.22**	**0.19**	**0.23**	**0.37 J**	**0.65 J**
TPAH14 (mg/kg)	NA	4	45	**0.127**	**2.608**	**8.931**	**0.656**	**3.473**	**1.284**	**0.447**	**0.931**	**0.805**	**3.152**	**5.856**	**4.51**	**1.133**	**2.111**	**1.09**	**1.534**	**3.308**
Benzo(b)fluoranthene	205-99-2	NE	NE	**0.044 J**	**0.23**	**0.8**	**0.091**	**0.46**	**0.14**	**0.063 J**	**0.14**	**0.12**	**0.38**	**0.66**	**0.46**	**0.12**	**0.14**	**0.14**	**0.25 J**	**0.44 J**
Benzo(k)fluoranthene	207-08-9	NE	NE	0.066 U	**0.094**	**0.3**	0.066 U	**0.17**	0.067 U	0.066 U	**0.057 J**	0.066 U	**0.15**	**0.27**	**0.16**	0.067 U	**0.066**	**0.067**	**0.11**	**0.17**
Indeno(1,2,3-cd)pyrene	193-39-5	NE	NE	0.066 U	**0.12**	**0.39**	**0.048 J**	**0.23**	**0.078**	0.066 U	**0.081**	**0.063 J**	**0.18**	**0.29**	**0.23**	**0.056 J**	**0.062 J**	**0.067**	**0.11**	**0.2**
TPAH17 (mg/kg)	NA	NE	NE	**0.171**	**3.052**	**10.421**	**0.795**	**4.333**	**1.502**	**0.51**	**1.209**	**0.988**	**3.862**	**7.076**	**5.36**	**1.309**	**2.379**	**1.364**	**2.004**	**4.118**
Additional PAHs (mg/kg)																					
Benzo(e)pyrene	192-97-2	NE	NE	**0.022 J**	**0.11**	**0.41**	**0.047 J**	**0.24**	**0.074**	**0.03 J**	**0.078**	**0.062 J**	**0.2**	**0.33**	**0.22**	**0.056 J**	**0.075**	**0.078**	**0.11**	**0.22**
C1-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC1	NE	NE	0.066 U	**0.13 J**	**0.37 J**	0.066 U	**0.33 J**	**0.083 J**	0.066 U	**0.074 J**	**0.07 J**	**0.41 J**	**0.85 J**	**0.18 J**	**0.076 J**	**0.1 J**	**0.13 J**	**0.15 J**	**0.41 J**
C2-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC2	NE	NE	0.066 U	0.067 U	**0.13 J**	0.066 U	**0.15 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.21 J**	**0.47 J**	**0.077 J**	0.067 U	0.066 U	0.066 U	**0.076 J**	**0.2 J**
C3-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC3	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	**0.07 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.12 J**	**0.23 J**	0.066 U	0.067 U	0.066 U	**0.071 J**	0.066 U	**0.12 J**
C4-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC4	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.1 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C1-Fluoranthenes/pyrenes	FLUORTHPYRC1	NE	NE	0.066 U	**0.2 J**	**0.71 J**	**0.084 J**	**0.51 J**	**0.13 J**	0.066 U	**0.1 J**	**0.097 J**	**0.6 J**	**1.1 J**	**0.29 J**	**0.14 J**	**0.16 J**	**0.19 J**	**0.2 J**	**0.49 J**
C1-Fluorenes	FLUORC1	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.077 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C2-Fluorenes	FLUORC2	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.099 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C3-Fluorenes	FLUORC3	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.11 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C1-Naphthalenes	NAPHC1	NE	NE	ND	**0.025**	**0.024**	ND	ND	ND	ND	ND	ND	**0.018**	**0.033**	**0.013**	ND	ND	ND	ND	ND
C2-Naphthalenes	NAPHC2	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.12 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C3-Naphthalenes	NAPHC3	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.094 J**	**0.2 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
C4-Naphthalenes	NAPHC4	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	**0.14 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
Perylene	198-55-0	NE	NE	**0.011 J**	**0.048 J**	**0.17 J**	**0.021 J**	**0.095 J**	**0.037 J**	**0.014 J**	**0.03 J**	**0.026 J**	**0.09**	**0.14**	**0.089**	**0.026 J**	**0.03 J**	**0.04 J**	**0.048 J**	**0.091**
C1-Phenanthrenes/anthracenes	PHENANTHC1	NE	NE	0.066 U	**0.18 J**	**0.48 J**	0.066 U	**0.33 J**	**0.093 J**	0.066 U	0.066 U	0.066 U	**0.35 J**	**0.75 J**	**0.17 J**	**0.086 J**	**0.089 J**	**0.1 J**	**0.066 J**	**0.26 J**
C2-Phenanthrenes/anthracenes	PHENANTHC2	NE	NE	0.066 U	**0.089 J**	**0.22 J**	0.066 U	**0.25 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.3 J**	**0.63 J**	**0.082 J**	0.067 U	0.066 U	**0.096 J**	0.066 UJ	**0.22 J**
C3-Phenanthrenes/anthracenes	PHENANTHC3	NE	NE	0.066 U	0.067 U	**0.089 J**	0.066 U	**0.12 J**	0.067 U	0.066 U	0.066 U	0.066 U	**0.2 J**	**0.33 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.14 J**
C4-Phenanthrenes/anthracenes	PHENANTHC4	NE	NE	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.086 J**	**0.15 J**	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
TPAH34 (mg/kg)	NA	NE	NE	**0.204**	**3.834**	**13.024**	**0.947**	**6.428**	**1.919**	**0.554**	**1.491**	**1.243**	**6.54**	**12.935**	**6.481**	**1.693**	**2.833**	**2.069**	**2.654**	**6.269**

Table 7G - Remaining Contamination
Sediment PAH Results
Elmira Water Street MGP Site

				Location Name	SD11	SD12	SD13	SD14	SD15	SD16	SD17	SD18	SD19	SD20	SD21	SD22	SD23	SD24
				Sample Name	SD11 (0-6)	SD12 (0-6)	SD13 (0-6)	SD14 (0-6)	SD15 (0-6)	SD16 (0-6)	SD17 (0-6)	SD18 (0-6)	SD19 (0-6)	SD20 (0-6)	SD21 (0-6)	SD22 (0-6)	SD23 (0-6)	SD24 (0-6)
				Sample Date	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	**CAS number**	**NYSDEC ER-L**	**NYSDEC ER-M**															
PAHs (mg/kg)																		
Acenaphthene	83-32-9	0.016	0.5	0.066 U	**0.046 J**	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.067 U	0.067 U	0.067 U	0.067 U
Acenaphthylene	208-96-8	0.044	0.64	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.067 U	**0.074**	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.17**	0.067 U	0.067 U
Anthracene	120-12-7	0.0853	1.1	0.066 U	**0.097**	0.067 U	**0.054 J**	0.067 U	**0.15**	0.066 U	0.067 U	0.066 U	0.067 U	**0.044 J**	**0.48**	0.067 U	0.067 U	
Benzo(a)anthracene	56-55-3	0.261	1.6	**0.19**	**0.3**	**0.12**	**0.16**	**0.081**	**0.31**	**0.046 J**	0.067 U	**0.072**	**0.059 J**	**0.23**	**0.96**	0.067 U	**0.041 J**	
Benzo(g,h,i)perylene	191-24-2	NE	NE	**0.082**	**0.16**	**0.068**	**0.079**	**0.051 J**	**0.14**	0.066 U	0.067 U	**0.042 J**	0.067 U	**0.097**	**0.31**	0.067 U	0.067 U	
Benzo(a)pyrene	50-32-8	0.43	1.6	**0.13**	**0.24**	**0.089**	**0.11**	**0.065 J**	**0.21**	**0.033 J**	0.067 U	**0.051 J**	**0.04 J**	**0.15**	**0.6**	0.067 U	**0.032 J**	
Chrysene	218-01-9	0.384	2.8	**0.19**	**0.28**	**0.12**	**0.14**	**0.079**	**0.26**	0.066 U	0.067 U	**0.069**	**0.05 J**	**0.2**	**0.83**	0.067 U	0.067 U	
Dibenz(a,h)anthracene	53-70-3	0.0634	0.26	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.09**	0.067 U	0.067 U	
Fluoranthene	206-44-0	0.6	5.1	**0.33**	**0.51**	**0.22**	**0.36**	**0.16**	**0.73**	**0.083**	**0.065 J**	**0.15**	**0.1**	**0.37**	**1.7**	0.067 U	**0.074**	
Fluorene	86-73-7	0.019	0.54	0.066 U	**0.055 J**	0.067 U	0.067 U	0.067 U	**0.078**	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.16**	0.067 U	0.067 U	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.067 U	0.067 U	0.067 U	
Naphthalene	91-20-3	0.16	2.1	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.067 U	0.067 U	0.067 U	
Phenanthrene	85-01-8	0.24	1.5	**0.15**	**0.32**	**0.1**	**0.3**	**0.068**	**0.79**	0.066 U	**0.047 J**	**0.06 J**	**0.073**	**0.13**	**1.1**	0.067 U	0.067 U	
Pyrene	129-00-0	0.665	2.6	**0.27**	**0.43**	**0.18**	**0.3**	**0.13**	**0.57**	**0.066**	**0.053 J**	**0.14**	**0.093**	**0.33**	**1.3**	0.067 U	**0.068**	
TPAH14 (mg/kg)	NA	4	45	**1.342**	**2.438**	**0.897**	**1.503**	**0.634**	**3.312**	**0.228**	**0.165**	**0.584**	**0.415**	**1.551**	**7.7**	ND	**0.215**	
Benzo(b)fluoranthene	205-99-2	NE	NE	**0.19**	**0.31**	**0.14**	**0.15**	**0.094**	**0.28**	**0.054 J**	0.067 U	**0.07**	**0.057 J**	**0.22**	**0.79**	0.067 U	**0.046 J**	
Benzo(k)fluoranthene	207-08-9	NE	NE	**0.073**	**0.14**	**0.05 J**	**0.057 J**	0.067 U	**0.11**	0.066 U	0.067 U	0.066 U	0.067 U	**0.079**	**0.3**	0.067 U	0.067 U	
Indeno(1,2,3-cd)pyrene	193-39-5	NE	NE	**0.081**	**0.15**	**0.072**	**0.077**	**0.052 J**	**0.14**	0.066 U	0.067 U	0.066 U	0.067 U	**0.099**	**0.32**	0.067 U	0.067 U	
TPAH17 (mg/kg)	NA	NE	NE	**1.686**	**3.038**	**1.159**	**1.787**	**0.78**	**3.842**	**0.282**	**0.165**	**0.654**	**0.472**	**1.949**	**9.11**	ND	**0.261**	
Additional PAHs (mg/kg)																		
Benzo(e)pyrene	192-97-2	NE	NE	**0.095**	**0.17**	**0.068**	**0.071**	**0.05 J**	**0.14**	**0.025 J**	**0.02 J**	**0.036 J**	**0.029 J**	**0.11**	**0.36**	**0.023 J**	**0.025 J**	
C1-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC1	NE	NE	**0.11 J**	**0.23 J**	**0.082 J**	**0.085 J**	0.067 U	**0.15 J**	0.066 U	0.067 U	0.066 U	0.067 U	**0.16 J**	**0.64 J**	0.067 U	0.067 U	
C2-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC2	NE	NE	0.066 U	**0.13 J**	0.067 U	0.067 U	0.067 U	**0.076 J**	0.066 U	0.067 U	0.066 U	0.067 U	**0.074 J**	**0.29 J**	0.067 U	0.067 U	
C3-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC3	NE	NE	0.066 U	**0.087 J**	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.13 J**	0.067 U	0.067 U	
C4-Chrysenes/benz(a)anthracenes	CHRYBENaANTHC4	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.067 U	0.067 U	0.067 U	
C1-Fluoranthenes/pyrenes	FLUORTHPYRC1	NE	NE	**0.2 J**	**0.34 J**	**0.11 J**	**0.1 J**	**0.075 J**	**0.21 J**	0.066 U	**0.078 J**	0.066 U	0.067 U	**0.23 J**	**1.3 J**	0.067 U	0.067 U	
C1-Fluorenes	FLUORC1	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.087 J**	0.067 U	0.067 U	
C2-Fluorenes	FLUORC2	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.079 J**	0.067 U	0.067 U	
C3-Fluorenes	FLUORC3	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.075 J**	0.067 U	0.067 U	
C1-Naphthalenes	NAPHC1	NE	NE	ND	**0.015**	ND	ND	ND	**0.013**	ND	ND	ND	ND	ND	**0.0098**	ND	ND	
C2-Naphthalenes	NAPHC2	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.1 J**	0.067 U	0.067 U	
C3-Naphthalenes	NAPHC3	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.2 J**	0.067 U	0.067 U	
C4-Naphthalenes	NAPHC4	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.12 J**	0.067 U	0.067 U	
Perylene	198-55-0	NE	NE	**0.034 J**	**0.072**	**0.033 J**	**0.032 J**	**0.023 J**	**0.065 J**	**0.012 J**	**0.0091 J**	**0.022 J**	**0.015 J**	**0.047 J**	**0.17**	**0.0092 J**	**0.016 J**	
C1-Phenanthrenes/anthracenes	PHENANTHC1	NE	NE	**0.067 J**	**0.17 J**	0.067 U	**0.1 J**	0.067 U	**0.22 J**	0.066 U	0.067 U	0.066 U	0.067 U	**0.12 J**	**0.9 J**	0.067 U	0.067 U	
C2-Phenanthrenes/anthracenes	PHENANTHC2	NE	NE	0.066 U	**0.13 J**	0.067 U	0.067 U	0.067 U	**0.1 J**	0.066 U	0.067 U	0.066 U	0.067 U	**0.097 J**	**0.58 J**	0.067 U	0.067 U	
C3-Phenanthrenes/anthracenes	PHENANTHC3	NE	NE	0.066 U	**0.084 J**	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.3 J**	0.067 U	0.067 U	
C4-Phenanthrenes/anthracenes	PHENANTHC4	NE	NE	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.12 J**	0.067 U	0.067 U	
TPAH34 (mg/kg)	NA	NE	NE	**2.192**	**4.466**	**1.452**	**2.175**	**0.928**	**4.816**	**0.319**	**0.2721**	**0.712**	**0.516**	**2.787**	**14.5708**	**0.0322**	**0.302**	

Table 7H - Remaining Contamination
Sediment SVOC Results
Elmira Water Street MGP Site

			Location Name	C1	C2	C3	C4	C5	C6	SD1	SD2	SD3	SD4	SD5	SD6	SD7	SD8	SD9	SD10	SD10
			Sample Name	C1 (1.5-2)	C2 (1.5-2.0)	C3 (1-1.5)	C4 (1.5-2)	C5 (3.5-4)	C6 (1-1.5)	SD1 (0-6)	SD2 (0-6)	SD3 (0-6)	SD4 (0-6)	SD5 (0-6)	SD6 (0-6)	SD7 (0-6)	SD8 (0-6)	SD9 (0-6)	SD10 (0-6)	SD10(0-6) Duplicate
			Sample Date	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	CAS Number	NYSDEC ER-L	NYSDEC ER-M																	
Other SVOCs (mg/kg)																				
Acetophenone	98-86-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Atrazine	1912-24-9	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Benzaldehyde	100-52-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Biphenyl (1,1-Biphenyl)	92-52-4	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-chloroethoxy)methane	111-91-1	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-chloroethyl)ether	111-44-4	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(chloroisopropyl)ether	108-60-1	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	**0.092 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Bromophenyl phenyl ether	101-55-3	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Butyl benzyl phthalate	85-68-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	**5.9**	0.33 U	0.33 U	0.33 U
Caprolactam	105-60-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Carbazole	86-74-8	NE	NE	0.33 U	**0.061 J**	**0.2 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	**0.048 J**	**0.09 J**	0.33 U	**0.16 J**	0.33 U	0.33 U	0.33 U
4-Chloro-3-methylphenol	59-50-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Chloroaniline	106-47-8	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Chloronaphthalene	91-58-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Chlorophenol	95-57-8	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Dibenzofuran	132-64-9	NE	NE	0.33 U	**0.049 J**	**0.11 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	**0.059 J**	**0.063 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
3,3-Dichlorobenzidine	91-94-1	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dichlorophenol	120-83-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Diethyl phthalate	84-66-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Dimethyl phthalate	131-11-3	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4-Dimethylphenol	105-67-9	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Di-n-butyl phthalate	84-74-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dinitrophenol	51-28-5	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dinitrotoluene	121-14-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,6-Dinitrotoluene	606-20-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Di-n-octyl phthalate	117-84-0	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorobenzene	118-74-1	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorobutadiene	87-68-3	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorocyclopentadiene	77-47-4	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Hexachloroethane	67-72-1	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Isophorone	78-59-1	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1-Methylnaphthalene	90-12-0	NE	NE	0.066 U	**0.025 J**	**0.024 J**	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	**0.018 J**	**0.033 J**	**0.013 J**	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
2-Methylnaphthalene	91-57-6	0.07	0.67	0.066 U	0.067 U	0.067 U	0.066 U	0.067 U	0.067 U	0.066 U	0.066 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.066 U	0.066 U	0.067 U
2-Methylphenol (o-Cresol)	95-48-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Methylphenol (p-Cresol)	106-44-5	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	**0.16 J**	0.33 U	**0.15 J**	0.33 U	0.33 U	0.33 U	0.33 U
2-Nitroaniline	88-74-4	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
3-Nitroaniline	99-09-2	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
4-Nitroaniline	100-01-6	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Nitrobenzene	98-95-3	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Nitrophenol	88-75-5	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Nitrophenol	100-02-7	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
N-Nitrosodi-n-propylamine	621-64-7	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
N-Nitrosodiphenylamine	86-30-6	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Pentachlorophenol	87-86-5	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Phenol	108-95-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4,5-Trichlorophenol	95-95-4	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4,6-Trichlorophenol	88-06-2	NE	NE	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Total SVOCs (mg/kg)	NA	NE	NE	**0.204**	**3.944**	**13.334**	**0.947**	**6.428**	**1.919**	**0.554**	**1.491**	**1.243**	**6.632**	**13.202**	**6.634**	**1.843**	**8.893**	**2.069**	**2.654**	**6.269**

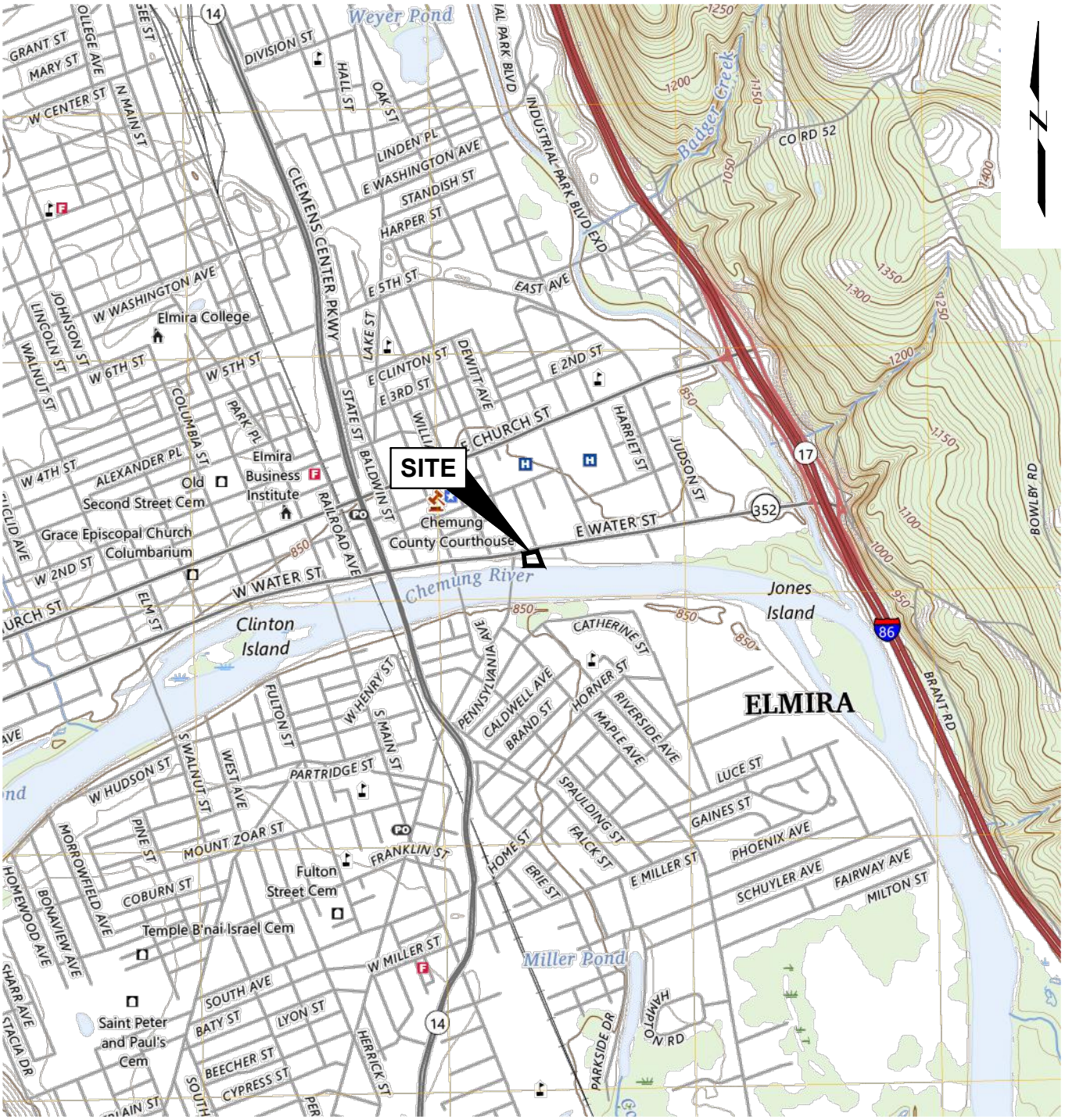
Table 7H - Remaining Contamination
Sediment SVOC Results
Elmira Water Street MGP Site

			Location Name	SD11	SD12	SD13	SD14	SD15	SD16	SD17	SD18	SD19	SD20	SD21	SD22	SD23	SD24
			Sample Name	SD11 (0-6)	SD12 (0-6)	SD13 (0-6)	SD14 (0-6)	SD15 (0-6)	SD16 (0-6)	SD17 (0-6)	SD18 (0-6)	SD19 (0-6)	SD20 (0-6)	SD21 (0-6)	SD22 (0-6)	SD23 (0-6)	SD24 (0-6)
			Sample Date	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	**CAS Number**	**NYSDEC ER-L**	**NYSDEC ER-M**														
Other SVOCs (mg/kg)																	
Acetophenone	98-86-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Atrazine	1912-24-9	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Benzaldehyde	100-52-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Biphenyl (1,1-Biphenyl)	92-52-4	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-chloroethoxy)methane	111-91-1	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-chloroethyl)ether	111-44-4	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(chloroisopropyl)ether	108-60-1	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Bromophenyl phenyl ether	101-55-3	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Butyl benzyl phthalate	85-68-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Caprolactam	105-60-2	NE	NE	0.33 U	0.32 U	0.33 U	**0.045 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Carbazole	86-74-8	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	**0.056 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Chloro-3-methylphenol	59-50-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Chloroaniline	106-47-8	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Chloronaphthalene	91-58-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Chlorophenol	95-57-8	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Chlorophenyl phenyl ether	7005-72-3	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Dibenzofuran	132-64-9	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	**0.071 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	**0.059 J**	0.33 U	0.33 U
3,3-Dichlorobenzidine	91-94-1	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dichlorophenol	120-83-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Diethyl phthalate	84-66-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Dimethyl phthalate	131-11-3	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4-Dimethylphenol	105-67-9	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Di-n-butyl phthalate	84-74-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4,6-Dinitro-2-methylphenol	534-52-1	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dinitrophenol	51-28-5	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
2,4-Dinitrotoluene	121-14-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,6-Dinitrotoluene	606-20-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Di-n-octyl phthalate	117-84-0	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorobenzene	118-74-1	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorobutadiene	87-68-3	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Hexachlorocyclopentadiene	77-47-4	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Hexachloroethane	67-72-1	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Isophorone	78-59-1	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1-Methylnaphthalene	90-12-0	NE	NE	0.066 U	**0.015 J**	0.067 U	0.067 U	0.067 U	**0.013 J**	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	**0.0098 J**	0.067 U	0.067 U
2-Methylnaphthalene	91-57-6	0.07	0.67	0.066 U	0.066 U	0.067 U	0.067 U	0.067 U	0.066 U	0.066 U	0.067 U	0.066 U	0.067 U	0.066 U	0.067 U	0.067 U	0.067 U
2-Methylphenol (o-Cresol)	95-48-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Methylphenol (p-Cresol)	106-44-5	NE	NE	0.33 U	0.32 U	0.33 U	**0.11 J**	0.33 U	0.33 U	0.33 U	**0.1 J**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Nitroaniline	88-74-4	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
3-Nitroaniline	99-09-2	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
4-Nitroaniline	100-01-6	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Nitrobenzene	98-95-3	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2-Nitrophenol	88-75-5	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
4-Nitrophenol	100-02-7	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
N-Nitrosodi-n-propylamine	621-64-7	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
N-Nitrosodiphenylamine	86-30-6	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Pentachlorophenol	87-86-5	NE	NE	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Phenol	108-95-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4,5-Trichlorophenol	95-95-4	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
2,4,6-Trichlorophenol	88-06-2	NE	NE	0.33 U	0.32 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Total SVOCs (mg/kg)	NA	NE	NE	**2.192**	**4.466**	**1.452**	**2.33**	**0.928**	**4.943**	**0.319**	**0.3721**	**0.712**	**0.516**	**2.787**	**14.6298**	**0.0322**	**0.302**

Table 7I - Remaining Contamination
Sediment PCBs, Herbicides, Pesticides, Metals, and Cyanide Results
Elmira Water Street MGP Site

				Location Name	C1	C2	C3	C4	C5	C6	SD4	SD5	SD6	SD7	SD8	SD9	SD10	SD10	SD13	SD15	SD17	SD19	SD21	SD22	SD23	SD24
				Sample Name	C1 (1.5-2)	C2 (1.5-2.0)	C3 (1-1.5)	C4 (1.5-2)	C5 (3.5-4)	C6 (1-1.5)	SD4 (0-6)	SD5 (0-6)	SD6 (0-6)	SD7 (0-6)	SD8 (0-6)	SD9 (0-6)	SD10 (0-6)	SD10(0-6) Duplicate	SD13 (0-6)	SD15 (0-6)	SD17 (0-6)	SD19 (0-6)	SD21 (0-6)	SD22 (0-6)	SD23 (0-6)	SD24 (0-6)
				Sample Date	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/12/2013	9/12/2013	9/12/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013	9/13/2013
Analyte	**CAS number**	**NYSDEC ER-L**	**NYSDEC ER-M**																							
PCB Aroclors (mg/kg)																										
Aroclor 1016	12674-11-2	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1221	11104-28-2	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1232	11141-16-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1242	53469-21-9	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1248	12672-29-6	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1254	11097-69-1	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1260	11096-82-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1262	37324-23-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Aroclor 1268	11100-14-4	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	0.26 U	NA	NA	NA
Total PCB Aroclors (mg/kg)	1336-36-3	22.7	180		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Pesticides (mg/kg)																										
Aldrin	309-00-2	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
alpha-BHC (Hexachlorocyclohexane)	319-84-6	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 UJ	NA	NA	NA	NA	NA	NA	0.041 UJ	NA	NA	NA
beta-BHC (beta-Hexachlorocyclohexane)	319-85-7	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
gamma-BHC (gamma-Hexachlorocyclohexane) (Lindane)	58-89-9	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
delta-BHC (delta-Hexachlorocyclohexane)	319-86-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
alpha-Chlordane/gamma-Chlordane	57-74-9	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA	0.41 U	NA	NA	NA
alpha-chlordane	5103-71-9	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
gamma-Chlordane	5103-74-2	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
4,4'-DDT (p,p'-DDT)	50-29-3	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
4,4'-DDE (p,p'-DDE)	72-55-9	0.0022	0.027		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	**0.0064 J**	NA	NA	NA
4,4-DDD (p,p-DDD)	72-54-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Dieldrin	60-57-1	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
alpha-Endosulfan (I)	959-98-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
beta-Endosulfan (II)	33213-65-9	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Endosulfan sulfate	1031-07-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Endrin	72-20-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Endrin aldehyde	7421-93-4	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Endrin ketone	53494-70-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Heptachlor	76-44-8	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Heptachlor epoxide	1024-57-3	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Methoxychlor	72-43-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	NA	NA	NA	NA	NA	NA	0.041 U	NA	NA	NA
Toxaphene	8001-35-2	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.43 U	NA	NA	NA	NA	NA	NA	0.41 U	NA	NA	NA
Total Pesticides (mg/kg)	NA	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	**0.0064**	NA	NA	NA
Herbicides (mg/kg)																										
2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	NA	NA	NA	NA	NA	NA	0.02 U	NA	NA	NA
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	93-76-5	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	NA	NA	NA	NA	NA	NA	0.02 U	NA	NA	NA
2,4,5-TP (Silvex)	93-72-1	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 UJ	NA	NA	NA	NA	NA	NA	0.02 UJ	NA	NA	NA
Total Herbicides (mg/kg)	NA	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Total Metals (mg/kg)																										
Aluminum	7429-90-5	NE	NE		**5350**	**4660**	**3750**	**4000**	**3750**	**6000**	**5010 J**	**4340 J**	**4000 J**	**5580 J**	**5010 J**	**5420 J**	**3630 J**	**5620 J**	**5410 J**	**4540 J**	**3710 J**	**3230 J**	**4060 J**	**4800 J**	**4570 J**	**3750 J**
Antimony	7440-36-0	NE	NE		**0.65 J**	**10.9 J**	**0.54 J**	17 U	17.7 U	19.7 U	18.7 U	19 U	18.8 U	19.3 U	**1.1 J**	**443**	20.5 U	18 U	17.7 U	18.9 U	19.7 U	18.1 U	17.8 U	**2.3 J**	17.4 U	**1.9 J**
Arsenic	7440-38-2	8.2	70		**7.4**	**30.5**	**4.8**	**4.2**	**7**	**6.8**	**7.1**	**6.2**	**5.3**	**6.1**	**8.5**	**18.6**	**4.2**	**6**	**6.6**	**7.3**	**6.3**	**3.8**	**4.8**	**4.7**	**6.5**	**3.7**
Barium	7440-39-3	NE	NE		**52.4 J**	**52.3 J**	**35.1 J**	**49.3 J**	**72.7 J**	**67 J**	**55.5 J**	**43.2 J**	**63.4 J**	**126 J**	**133 J**	**71.8 J**	**56.2 J**	**49 J**	**78.8 J**	**120 J**	**60.4 J**	**38**	**40.7 J**	**39.9 J**	**54.1 J**	**51.7 J**
Beryllium	7440-41-7	NE	NE		**0.28**	**0.26**	**0.22 J**	**0.19 J**	**0.2 J**	**0.29**	**0.26**	**0.26**	**0.25**	**0.31**	**0.28**	**0.32**	**0.21 J**	**0.31**	**0.26**	**0.27**	**0.24 J**	**0.26**	**0.25**	**0.26**	**0.25**	**0.22**
Cadmium	7440-43-9	1.2	9.6		0.27 U	0.23 U	0.24 U	0.23 U	**0.043 J**	0.26 U	0.25 U	0.25 U	**0.053 J**	0.26 U	0.27 U	0.25 U	0.27 U	0.24 U	0.24 U	0.25 U	0.26 U	0.24 U	**0.037 J**	0.24 U	0.23 U	0.21 U
Calcium	7440-70-2	NE	NE		**2030**	**5180**	**5460**	**10000**	**2110**	**13200**	**7570 J**	**6580 J**	**83400 J**	**3150 J**	**4840 J**	**14300 J**	**28300 J**	**4520 J**	**9450 J**	**1510 J**	**1420 J**	**736 J**	**1380 J**	**11500 J**	**6730 J**	**1160**
Chromium	7440-47-3	81	370		**7.7**	**11.1**	**6.2**	**5.3**	**3.5**	**8.1**	**7.3**	**6.1**	**6.2**	**12**	**7.1**	**8.3**	**4.9 J**	**8.9 J**	**6.5**	**6.8**	**6**	**4.8**	**5.4**	**7.5**	**9.1**	**5.5**
Cobalt	7440-48-4	NE	NE		**7.8**	**14**	**6**	**5**	**5.2**	**8.9**	**9.8**	**7.1**	**7.9**	**10**	**10.4**	**10.4**	**6.4**	**9.4**	**7.9**	**9.6**	**6.3**	**6.1**	**6.8**	**7.5**	**8.2**	**7.1**
Copper	7440-50-8	34	270		**52.1**	**194**	**13.8**	**27.6**	**17.5**	**50.2**	**59.1 J**	**15.8 J**	**14.6 J**	**19.2 J**	**23.1 J**	**247 J**	**14.6 J**	**32.2 J**	**36.4 J**	**35.7 J**	**9.7 J**	**24.5 J**	**20.7 J**	**23.9 J**	**54.7 J**	**9.1**
Iron	7439-89-6	NE	NE		**20700**	**41900**	**12700**	**11300**	**12600**	**16500**	**16400**	**14700**	**11800**	**17400**	**16700**	**17900**	**10400 J**	**18200 J**	**14300**	**16300**	**11500**	**9380**	**14100**	**19400**	**27500**	**11000**
Lead	7439-92-1	47	218		**150**	**130**	**41.4**	**56.2**	**45.5**	**99.7**	**46.9 J**	**53.4 J**	**24.1 J**	**35.6 J**	**54.9 J**	**95.2 J**	**25.5 J**	**54.8 J**	**87.3 J**	**52.1 J**	**17.7 J**	**17.5**	**53.5 J**	**389 J**	**24.8 J**	**118 J**
Magnesium	7439-95-4	NE	NE		**2110**	**1890**	**3940**	**2560**	**1120**	**4580**	**1860 J**	**1670 J**	**2560 J**	**2920 J**	**2040 J**	**7480 J**	**1620 J**	**3500 J**	**1990 J**	**1800 J**	**1290 J**	**1030 J**	**1420 J**	**5370 J**	**2620 J**	**1490**
Manganese	7439-96-5	NE	NE		**312 J**	**381 J**	**197 J**	**252 J**	**442 J**	**588 J**	**458 J**	**415 J**	**691 J**	**803 J**	**1090 J**	**555 J**	**313 J**	**347 J**	**534 J**	**981 J**	**461 J**	**184 J**	**247 J**	**298 J**	**558 J**	**397**
Mercury	7439-97-6	0.15	0.71		**0.053**	**0.025**	**0.026**	**0.042**	**0.066**	**0.016 J**	**0.034**	**0.03**	**0.036**	**0.013 J**	**0.027**	0.027 U	**0.019 J**	**0.022 J**	**0.2**	**0.014 J**	0.025 U	**0.011 J**	**0.054**	**0.1**	**0.06**	**0.012 J**
Nickel	7440-02-0	21	52		**16**	**19**	**12.9**	**10.9**	**10.2**	**17.4**	**17.9**	**13.8**	**16.2**	**23.6**	**19**	**19.9**	**11.6**	**19.3**	**14.3**	**16.5**	**11.9**	**11.8**	**14.1**	**16.9**	**16.6**	**13.3**
Potassium	7440-09-7	NE	NE		**504**	**448**	**419**	**438**	**284**	**493**	**464**	**446**	**539**	**440**	**404**	**516**	**397**	**446**	**399**	**319**	**369**	**376**	**403**	**377**	**370**	**348**
Selenium	7782-49-2	NE	NE		**1.1 J**	**1.7 J**	**0.96 J**	**0.63 J**	**0.66 J**	5.2 U	**0.79 J**	**0.57 J**	5 U	**0.98 J**	**1 J**	4.9 U	5.5 U	**0.51 J**	4.7 U	**1.2 J**	**1 J**	4.8 U	**0.52 J**	4.8 U	4.6 U	**0.71 J**
Silver	7440-22-4	1	3.7		0.68 U	0.58 U	**0.26 J**	0.57 U	0.59 U	0.66 U	0.62 U	0.63 U	0.63 U	0.64 U	0.68 U	**19.6**	0.68 U	0.6 U	0.59 U	**0.96**	0.66 U	0.6 U	0.59 U	0.6 U	0.58 U	**0.27 J**
Sodium	7440-23-5	NE	NE		191 U	163 U	169 U	159 U	165 U	184 U	**72.7 J**	**47.7 J**	**104 J**	**88.6 J**	**67.8 J**	172 U	**241**	**107 J**	**216**	**55.7 J**	**55 J**	**51.9 J**	**86.1 J**	**66.8 J**	**58.8 J**	**43.9 J**
Thallium	7440-28-0	NE	NE		8.2 U	7 U	7.2 U	6.8 U	7.1 U	7.9 U	7.5 U	7.6 U	7.5 U	**0.4 J**	**0.47 J**	7.4 U	8.2 U	7.2 U	7.1 U	7.5 U	7.9 U	7.2 U	7.1 U	7.2 U	7 U	6.4 U
Vanadium	7440-62-2	NE	NE		**8.8**	**18.9**	**5.7**	**6.3**	**5.5**	**9.8**	**7.6**	**7.8**	**8.2**	**16.1**	**8.7**	**8.2**	**5.8**	**9**	**7.9**	**11**	**6.1**	**5.3**	**6.7**	**10.3**	**7**	**5.6**
Zinc	7440-66-6	150	410		**100 J**	**80.7 J**	**59.8 J**	**57.4 J**	**63.2 J**	**87.3 J**	**70**	**62.9**	**58.9**	**87.8**	**72.8**	**98.6**	**53.6 J**	**90.4 J**	**85.6**	**87**	**48.8**	**47.7**	**73.1**	**115**	**65.4**	**55.7**
Total Cyanide																										
Total Cyanide (mg/kg)	57-12-5	NE	NE		1.2 U	1.2 U	1.2 U	1.2 U	**1.1 J**	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U
Other																										
Total Organic Carbon (mg/kg)	NA	NE	NE		**6700 J**	**4970**	**4910**	**5180**	**4980**	**9880**	**42200 J**	**10300**	**15100 J**	**50600 J**	**4100 J**	1320 U	**1570**	**2320 J**	**6300 J**	**8920 J**	**3770 J**	1190 U	**7760**	**4740 J**	1120 U	**4870 J**

Figures



0 2000 4000

SCALE, FEET

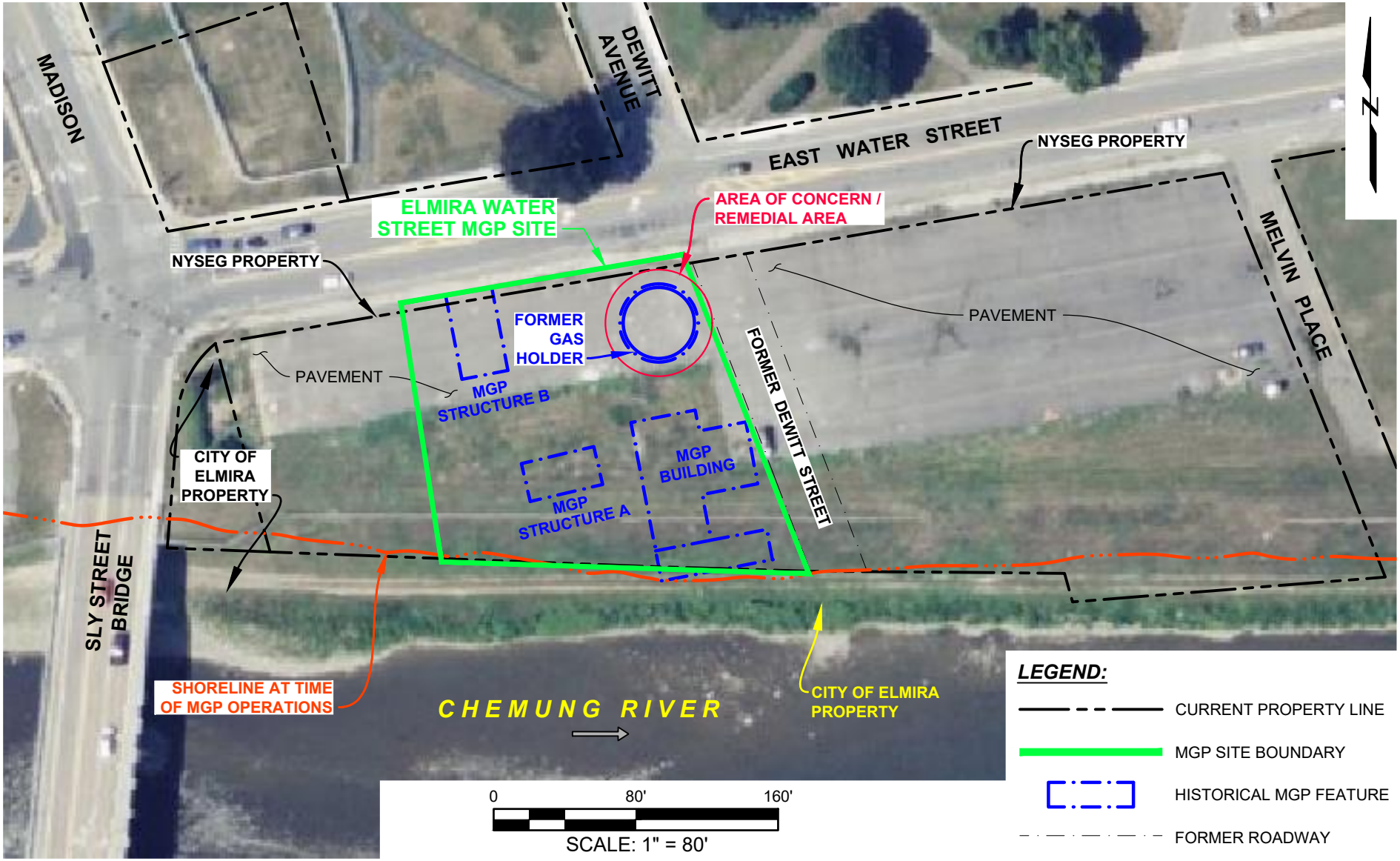
QUADRANGLE LOCATION

SOURCE:

USGS TOPOGRAPHIC QUADRANGLE, 7.5 MINUTE SERIES: ELMIRA, NY, 2023
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
10-FOOT CONTOUR INTERVAL

Site Management Plan Elmira Water Street MGP Site Elmira, New York	GEI Consultants	PROJECT SITE MAP
NYSEG Binghamton, New York	Project 2202959	October 2024 Fig. 1

HERIOT, PAULA B:\Working\NYSEG\2202959 NYSEG Elmira Water MGP\00_CAD\Figures\SMP\1_2202959_SMP_PSM.dwg - 8/9/2024



SOURCES

1. BING AERIAL ©2023 MICROSOFT CORPORATION ©2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS ACCESSED VIA CIVIL3D ON 07/31/2023.
2. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.

Site Management Plan Elmira Water Street MGP Site Elmira, New York	GEI Consultants	FINER SCALE SITE MAP
NYSEG Binghamton, New York	Project 2202959	October 2024 Fig. 2

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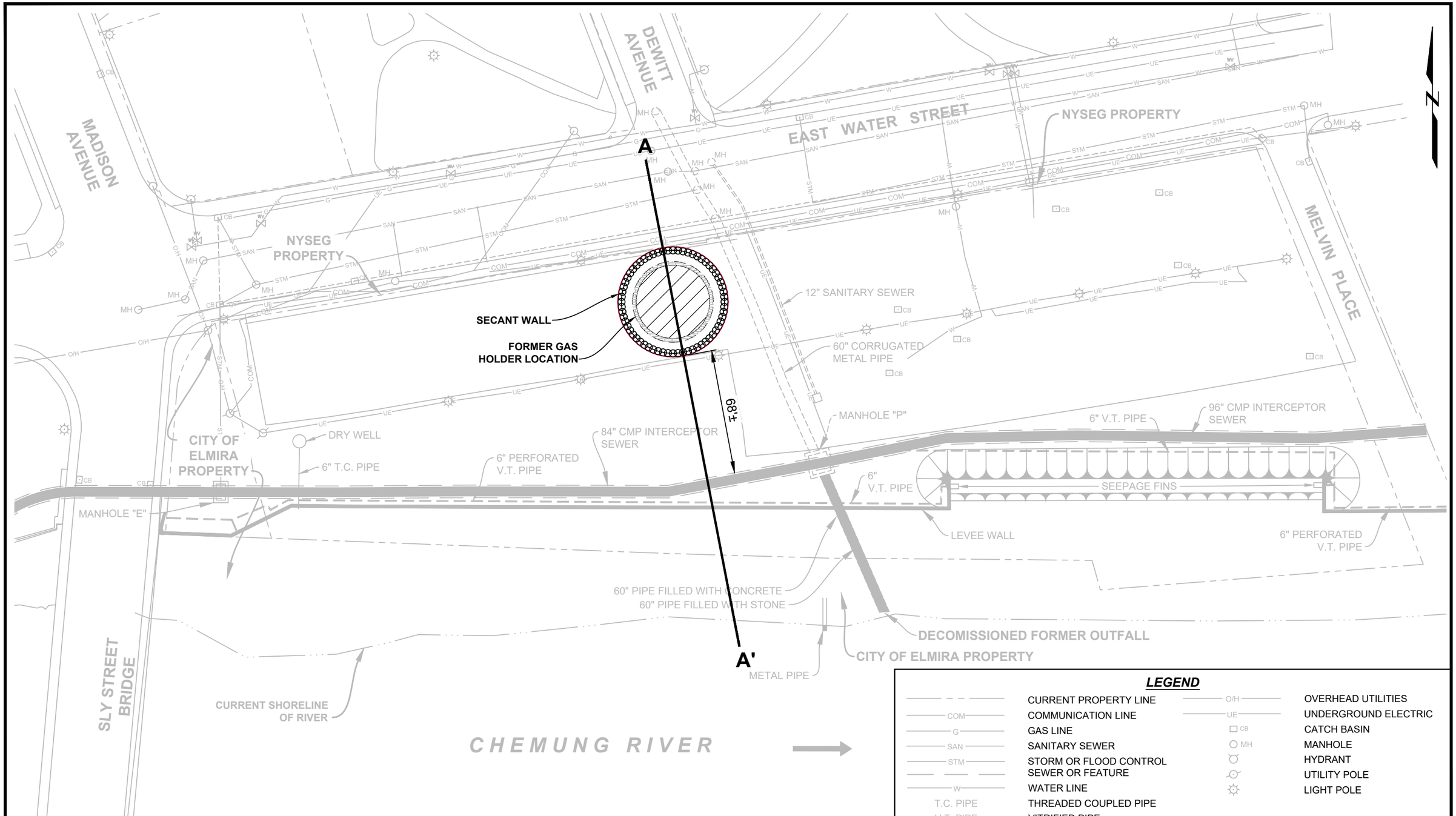

LEGEND

CURRENT PROPERTY LINE	OVERHEAD UTILITIES
COMMUNICATION LINE	UNDERGROUND ELECTRIC
GAS LINE	CATCH BASIN
SANITARY SEWER	MANHOLE
STORM OR FLOOD CONTROL SEWER OR FEATURE	HYDRANT
WATER LINE	UTILITY POLE
THREADED COUPLED PIPE	LIGHT POLE
VITRIFIED PIPE	

SOURCES:

1. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.
2. *ELMIRA, NY SECTION NO. 2, CHEMUNG RIVER, LEFT BANK, PLAN AND PROFILE,* PREPARED BY: ARMY CORPS OF ENGINEERS, 1" = 50', DATE: 1/10/1944.

0 50' 100'

SCALE: 1" = 50'

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

GEOLOGIC CROSS SECTION LOCATION

Project 2202959 | October 2024 | Fig. 3A

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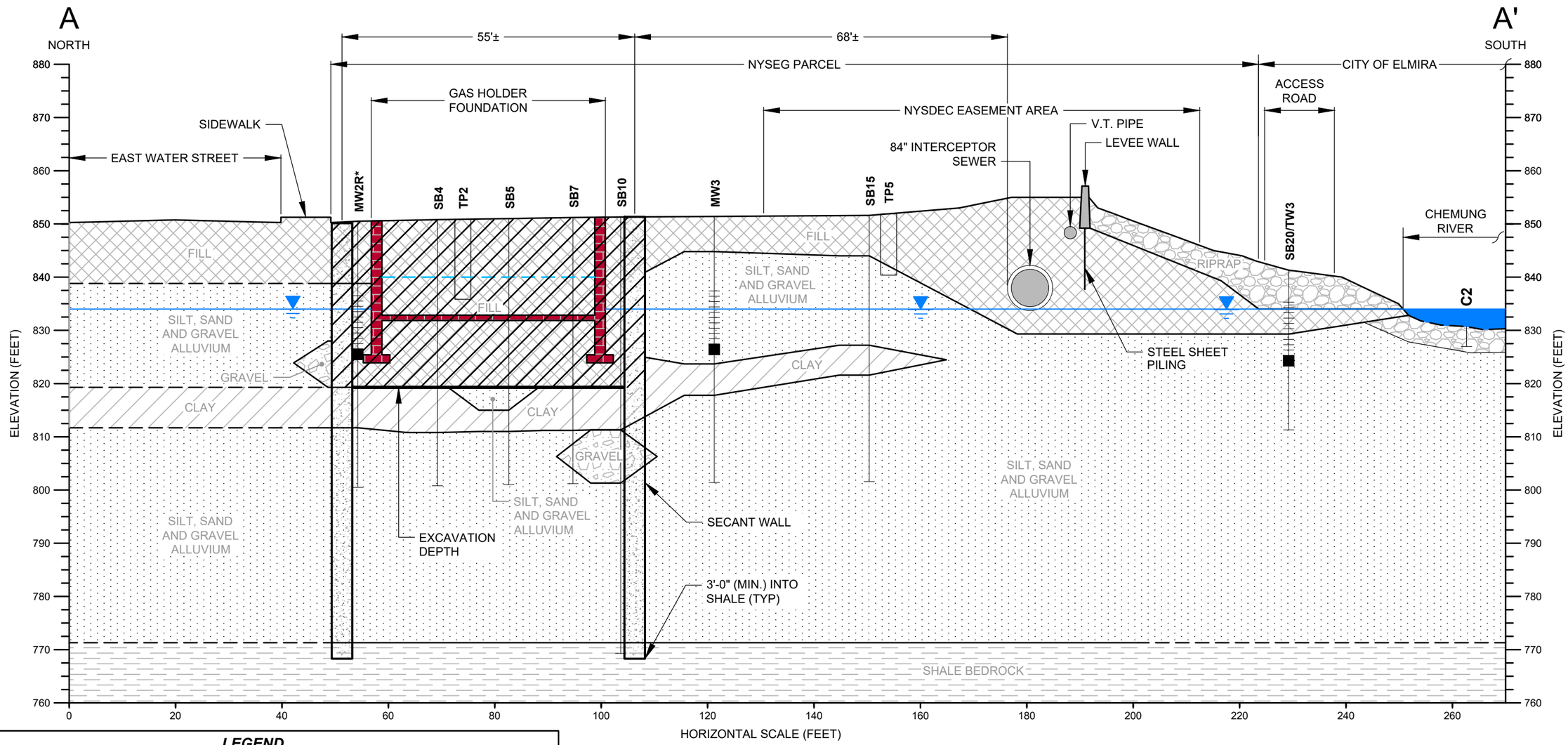

LEGEND

- FORMER WATER LEVEL IN GAS HOLDER FOUNDATION
- GROUNDWATER TABLE (JUNE 18, 2013)
- CONTACT
- INFERRED CONTACT
- MW1 — SOIL BORING/WELL IDENTIFICATION
- SCREEN INTERVAL
- DNAPL SUMP
- BOTTOM OF BORING
- GP2 — GEOPROBE BORING / GROUNDWATER SAMPLE
- V.T. PIPE — VITRIFIED PIPE
- TP2 — TEST PIT
- FILL
- SILT, SAND AND GRAVEL ALLUVIUM
- CLAY
- GRAVEL
- SHALE BEDROCK
- FORMER LOCATION OF GAS HOLDER FOUNDATION

NOTE:

*MW2R IS LOCATED NORTHEAST OUTSIDE SECANT WALL AND FORMER GAS HOLDER AREA.

HORIZONTAL SCALE: 1" = 20'

0 20' 40'

VERTICAL SCALE: 20'

NOTE: 1x VERTICAL EXAGGERATION

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

GEOLOGIC CROSS SECTION

Project 2202959 | October 2024 | Fig. 3B

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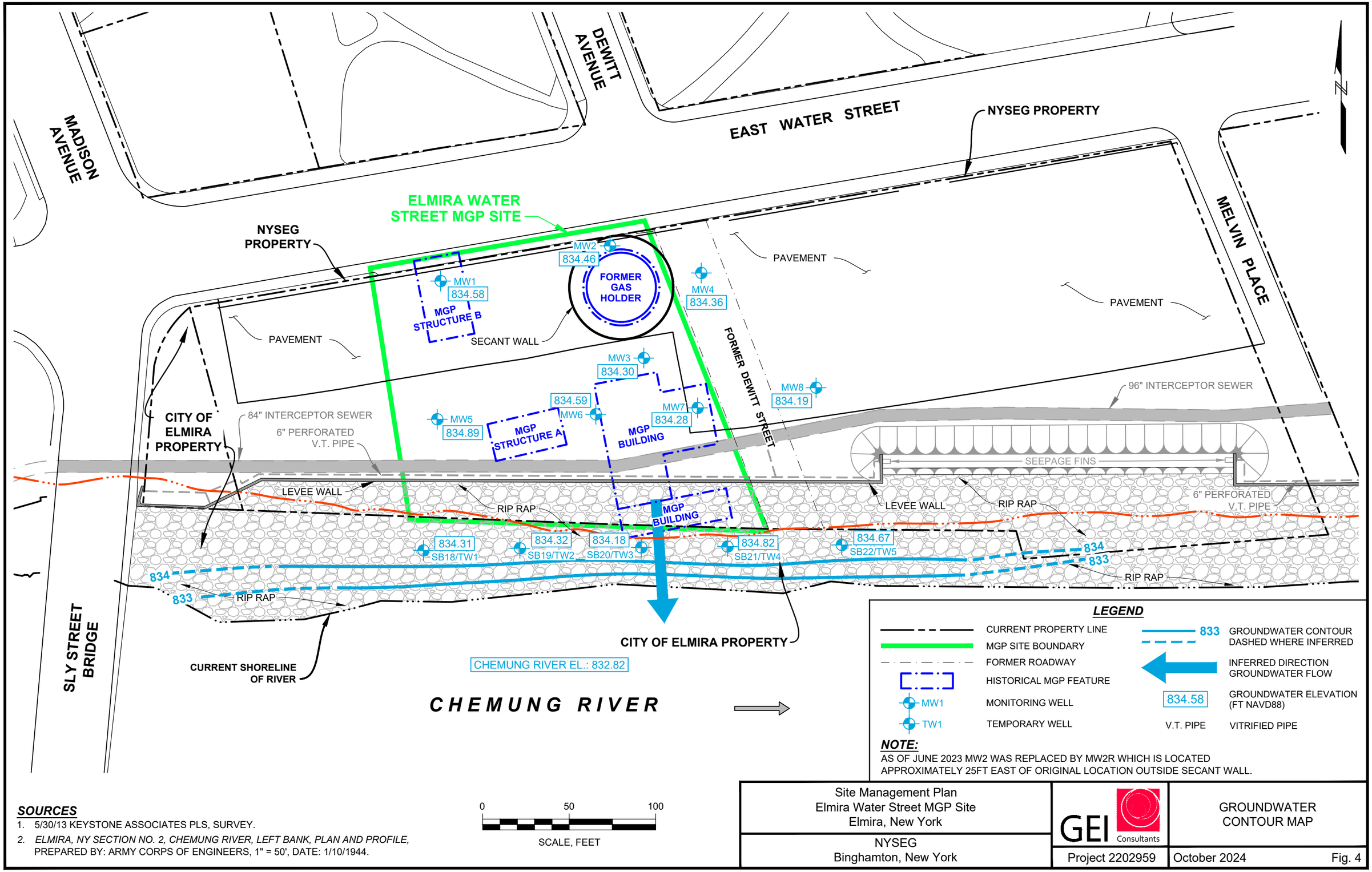

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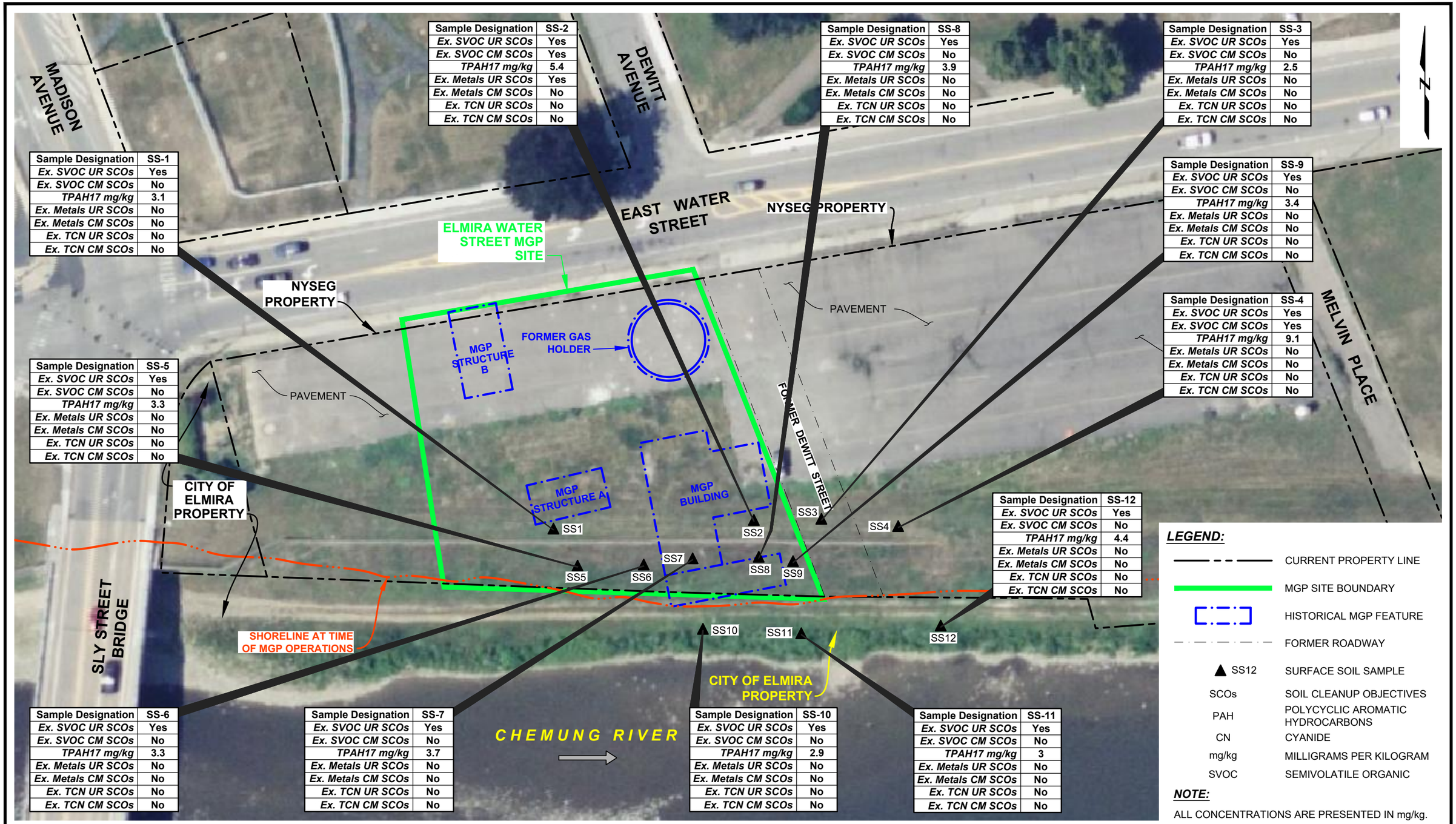

Sample Designation	SS-1
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.1
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-2
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	Yes
TPAH17 mg/kg	5.4
Ex. Metals UR SCOs	Yes
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-3
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	2.5
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-4
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	Yes
TPAH17 mg/kg	9.1
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-5
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.3
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-6
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.3
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-7
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.7
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-8
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.9
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-9
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3.4
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-10
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	2.9
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-11
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	3
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

Sample Designation	SS-12
Ex. SVOC UR SCOs	Yes
Ex. SVOC CM SCOs	No
TPAH17 mg/kg	4.4
Ex. Metals UR SCOs	No
Ex. Metals CM SCOs	No
Ex. TCN UR SCOs	No
Ex. TCN CM SCOs	No

LEGEND:

- CURRENT PROPERTY LINE
- MGP SITE BOUNDARY
- HISTORICAL MGP FEATURE
- FORMER ROADWAY
- ▲ SS12 — SURFACE SOIL SAMPLE
- SCOs — SOIL CLEANUP OBJECTIVES
- PAH — POLYCYCLIC AROMATIC HYDROCARBONS
- CN — CYANIDE
- mg/kg — MILLIGRAMS PER KILOGRAM
- SVOC — SEMIVOLATILE ORGANIC

NOTE:

ALL CONCENTRATIONS ARE PRESENTED IN mg/kg.

SOURCES

1. BING AERIAL ©2023 MICROSOFT CORPORATION ©2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS ACCESSED VIA CIVIL3D ON 07/31/2023.
2. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.

0 50' 100'

SCALE: 1" = 50'

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

Project 2202959

REMAINING SOIL SAMPLE EXCEEDANCES (0-2") - APRIL 2013

October 2024 Fig. 5A

---- B:\Working\NYSEG\2202959 NYSEG Elmira Water MGP\00_CAD\Figures\SMP\5_2202959_SMP_EXCD.dwg - 8/12/2024

Location	TP-6 Bottom (6')	TP-6 E.Side (3')
Ex. UR - VOC	No	No
Ex. CM - VOC	No	No
TBTEX	ND	ND
Ex. UR - SVOC	No	No
Ex. CM - SVOC	No	No
TPAH17	2.74	1.08
Ex. UR - Metals	No	Yes
Ex. CM - Metals	No	No
Ex. UR - TCN	No	No
Ex. CM - TCN	No	No

Location	MW-1 (14'-15')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	ND
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB-6 (14'-15')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	ND
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB-10 (9')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	ND
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	TP-1 Outside E. Well (12'-13')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.05
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	UST CS(SW-4)
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	0.0029
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	51.2
Ex. UR - Metals	Yes
Ex. CM - Metals	Yes
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	TP-4 Bottom (8')	TP-4 Side (3')
Ex. UR - VOC	No	No
Ex. CM - VOC	No	No
TBTEX	ND	ND
Ex. UR - SVOC	No	No
Ex. CM - SVOC	No	No
TPAH17	ND	0.26
Ex. UR - Metals	No	No
Ex. CM - Metals	No	No
Ex. UR - TCN	No	No
Ex. CM - TCN	No	No

Location	SB-14 (14'-15')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.13
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB20/TW-3 (10'-11')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	0.0477
Ex. UR - SVOC	Yes
Ex. CM - SVOC	Yes
TPAH17	1,062.1
Ex. UR - Metals	Yes
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	MW-5 (14'-15')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.05
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB21/TW-4 (12'-13')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.7
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB-12 (14'-15')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	ND
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	ND
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB22/TW-5 (11'-12')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	0.00051
Ex. UR - SVOC	Yes
Ex. CM - SVOC	Yes
TPAH17	25.1
Ex. UR - Metals	Yes
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	TP-5 E.Bottom (7')	TP-5 E.Side (3')	TP-5 W.Bottom (7')	TP-5 W.Side (3')
Ex. UR - VOC	No	No	No	No
Ex. CM - VOC	No	No	No	No
TBTEX	ND	ND	ND	ND
Ex. UR - SVOC	Yes	Yes	No	Yes
Ex. CM - SVOC	Yes	Yes	No	Yes
TPAH17	110.4	18.9	ND	15.3
Ex. UR - Metals	Yes	No	Yes	Yes
Ex. CM - Metals	No	No	No	No
Ex. UR - TCN	No	No	No	No
Ex. CM - TCN	No	No	No	No

Location	SB18/TW-1 (12'-13')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	0.00044
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.008
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

Location	SB19/TW-2 (11'-12')
Ex. UR - VOC	No
Ex. CM - VOC	No
TBTEX	0.00043
Ex. UR - SVOC	No
Ex. CM - SVOC	No
TPAH17	0.008
Ex. UR - Metals	No
Ex. CM - Metals	No
Ex. UR - TCN	No
Ex. CM - TCN	No

ELMIRA WATER STREET MGP SITE
EAST WATER STREET
NYSEG PROPERTY
NYSEG PROPERTY
PAVEMENT
PAVEMENT
MW1
SB6
SB1
SB2
TP1
SB3
MW2
MW4
FORMER GAS HOLDER
MGP STRUCTURE B
TP6
SB9
TP3
SB8
SB11
SB10
SB17
CS (SW-4)
MW3
FORMER DEWITT STREET
TP4
SB16
MW8
MW5
SB12
SB14
MW6
SB15
SB13
TP5
MW7
MGP STRUCTURE A
MGP BUILDING
84" INTERCEPTOR SEWER
6" PERFORATED V.T. PIPE
CITY OF ELMIRA PROPERTY
LEVEE WALL
RIP RAP
SB19/TW2
LEVEE WALL
ACCESS ROAD
SB18/TW1
SB20/TW3
SB21/TW4
SB22/TW5
ACCESS ROAD
SHORELINE AT TIME OF MGP OPERATIONS
RIP RAP
SLY STREET BRIDGE
CITY OF ELMIRA PROPERTY
CURRENT SHORELINE OF RIVER
CHEMUNG RIVER

0 50' 100'

SCALE: 1" = 50'

LEGEND

- MGP SITE BOUNDARY
- HISTORICAL MGP FEATURE
- FORMER GAS HOLDER EXCAVATED TO 30 FT BELOW GRADE
- UST EXCAVATION
- MW1 — MONITORING WELL
- SB2 — SOIL BORING
- TP1 — TEST PIT
- PETROLEUM IMPACTS STAINING & ODOR
- NO OBSERVED IMPACTS
- EX. — EXCEEDANCE
- UR — UNRESTRICTED
- CM — COMMERCIAL

NOTE:

ALL CONCENTRATIONS ARE PRESENTED IN mg/kg.

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

REMAINING SOIL SAMPLE EXCEEDANCES (0-15') - MAY 2013

Project 2202959 | October 2024 | Fig. 5B

---- B:\Working\NYSEG\2202959 NYSEG Elmira Water MGP\00_CAD\Figures\SMP\5_2202959_SMP_EXCD.dwg - 8/12/2024

Sample	SD4 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	0.0009
TPAH14	3.2
TPAH17	3.9
TPAH34	6.5

Sample	SD5 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	ND
TPAH14	5.9
TPAH17	7.1
TPAH34	12.9

Sample	SD6 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	ND
TPAH14	4.5
TPAH17	5.4
TPAH34	6.5

Sample	SD7 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	1.1
TPAH17	1.3
TPAH34	1.7

Sample	C3 (1'-1.5')
Ex. ERL	Yes
Ex. ERM	Yes
BTEX	ND
TPAH14	8.9
TPAH17	10.4
TPAH34	13.0

Sample	SD8 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	ND
TPAH14	2.1
TPAH17	2.4
TPAH34	2.8

Sample	SD9 (0-6')
Ex. ERL	No
Ex. ERM	Yes
BTEX	0.001
TPAH14	1.1
TPAH17	1.4
TPAH34	2.1

Sample	C5 (3.5'-4')
Ex. ERL	Yes
Ex. ERM	No
BTEX	ND
TPAH14	3.5
TPAH17	4.3
TPAH34	6.4

Sample	SD10 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	0.0013
TPAH14	1.5
TPAH17	2.0
TPAH34	2.7

Sample	C6 (1'-1.5')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	1.3
TPAH17	1.5
TPAH34	1.9

Sample	C1 (1.5'-2')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.1
TPAH17	0.2
TPAH34	0.2

Sample	SD3 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	0.8
TPAH17	1.0
TPAH34	1.2

Sample	SD2 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	0.9
TPAH17	1.2
TPAH34	1.5

Sample	SD1 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	0.4
TPAH17	0.5
TPAH34	0.6

Sample	SD11 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	1.3
TPAH17	1.7
TPAH34	2.2

Sample	SD12 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	NA
TPAH14	2.4
TPAH17	3.0
TPAH34	4.5

Sample	SD13 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.9
TPAH17	1.2
TPAH34	1.5

Sample	SD14 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	NA
TPAH14	1.5
TPAH17	1.8
TPAH34	2.2

Sample	SD15 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.6
TPAH17	0.8
TPAH34	0.9

Sample	SD16 (0-6')
Ex. ERL	Yes
Ex. ERM	No
BTEX	NA
TPAH14	3.3
TPAH17	3.8
TPAH34	4.8

Sample	C2 (1.5'-2.0')
Ex. ERL	Yes
Ex. ERM	No
BTEX	ND
TPAH14	2.6
TPAH17	3.1
TPAH34	3.8

Sample	SD17 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	0.0010
TPAH14	0.2
TPAH17	0.3
TPAH34	0.3

Sample	SD18 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	0.2
TPAH17	0.2
TPAH34	0.3

Sample	SD19 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.6
TPAH17	0.7
TPAH34	0.7

Sample	C4 (1.5'-2')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.7
TPAH17	0.8
TPAH34	0.9

Sample	SD20 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	NA
TPAH14	0.4
TPAH17	0.5
TPAH34	0.5

Sample	SD22 (0-6')
Ex. ERL	Yes
Ex. ERM	Yes
BTEX	ND
TPAH14	8
TPAH17	9
TPAH34	15

Sample	SD23 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	0.0010
TPAH14	ND
TPAH17	ND
TPAH34	0.03

Sample	SD24 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	ND
TPAH14	0.2
TPAH17	0.3
TPAH34	0.3

Sample	SD21 (0-6')
Ex. ERL	No
Ex. ERM	No
BTEX	0.0009
TPAH14	1.6
TPAH17	1.9
TPAH34	2.8

LEGEND

- CURRENT PROPERTY LINE
- MGP SITE BOUNDARY
- HISTORICAL MGP FEATURE
- NO OBSERVED IMPACTS
- SW1 SURFACE WATER SAMPLE
- SD9 SEDIMENT SAMPLE
- C1 SEDIMENT CORE
- T1 PROBE TRANSECT

NOTES:

1. ERL EXCEEDANCES FOR METALS ARE NOT REFLECTED IN THIS FIGURE.
2. ALL CONCENTRATIONS ARE PRESENTED IN mg/kg.
3. UPSTREAM SAMPLE BSD7 (0-6') FOUND APPROXIMATELY 550FT TO THE WEST ALSO EXCEEDS ERM.
4. YELLOW HIGHLIGHTED CALLOUT BOXES INDICATE EFFECTS RANGE MEDIAN (ERM) EXCEEDANCES.

RIP RAP
MGP BUILDING
SHORELINE AT TIME OF MGP OPERATIONS
SB18/TW1
SB19/TW2
SB20/TW3
SB21/TW4
SB22/TW5
METAL PIPE
T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22
SW1 SW2 SW3
SD1 SD2 SD3 SD4 SD5 SD6 SD7 SD8 SD9 SD10 SD11 SD12 SD13 SD14 SD15 SD16 SD17 SD18 SD19 SD20 SD21 SD22 SD23 SD24
C1 C2 C3 C4 C5 C6

CHEMUNG RIVER

SOURCES

1. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.
2. *ELMIRA, NY SECTION NO. 2, CHEMUNG RIVER, LEFT BANK, PLAN AND PROFILE,* PREPARED BY: ARMY CORPS OF ENGINEERS, 1" = 50', DATE: 1/10/1944.

0 40' 80'
SCALE: 1" = 40'

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

REMAINING SEDIMENT SAMPLE EXCEEDANCES - SEPTEMBER 2013

Project 2202959 | October 2024 | Fig. 6

---- B:\Working\NYSEG\2202959 NYSEG Elmira Water MGP\00_CAD\Figures\SMP\6_2202959_SMP_SEDM.dwg - 7/12/2024

LEGEND:

- ASPHALT
- VEGETATION
- CURRENT PROPERTY LINE
- MGP SITE BOUNDARY

SOURCES

1. BING AERIAL ©2023 MICROSOFT CORPORATION ©2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS ACCESSED VIA CIVIL3D ON 07/31/2023.
2. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.

0 50' 100'

SCALE: 1" = 50'

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

INSTITUTIONAL CONTROL AND ENGINEERING CONTROLS BOUNDARIES

Project 2202959 | October 2024 | Fig. 7

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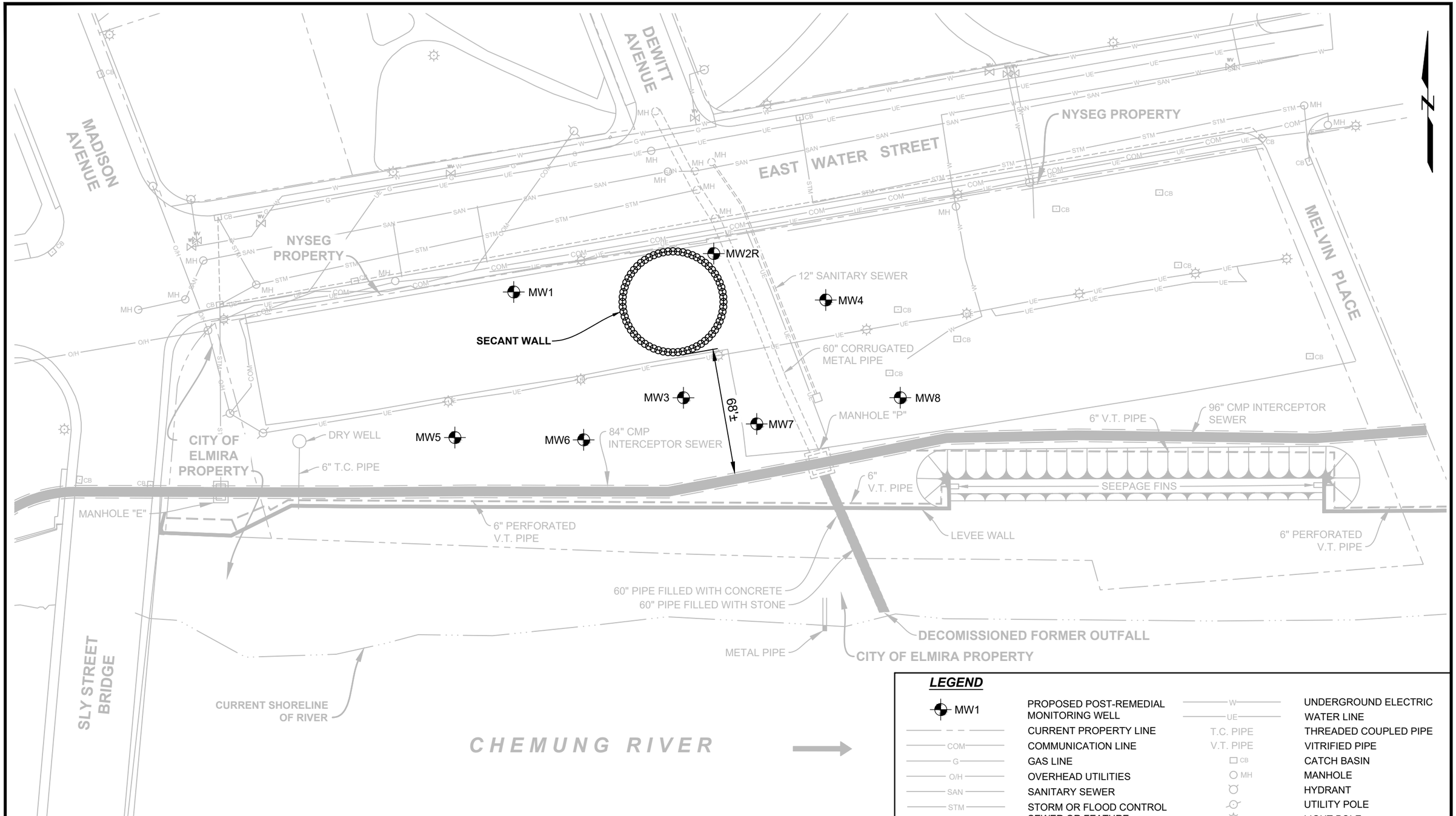

LEGEND

MW1	PROPOSED POST-REMEDIAL MONITORING WELL	W	UNDERGROUND ELECTRIC
	CURRENT PROPERTY LINE	UE	WATER LINE
COM	COMMUNICATION LINE	T.C. PIPE	THREADED COUPLED PIPE
G	GAS LINE	V.T. PIPE	VITRIFIED PIPE
O/H	OVERHEAD UTILITIES	CB	CATCH BASIN
SAN	SANITARY SEWER	MH	MANHOLE
STM	STORM OR FLOOD CONTROL SEWER OR FEATURE		HYDRANT
			UTILITY POLE
			LIGHT POLE

SOURCES:

1. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.
2. *ELMIRA, NY SECTION NO. 2, CHEMUNG RIVER, LEFT BANK, PLAN AND PROFILE,* PREPARED BY: ARMY CORPS OF ENGINEERS, 1" = 50', DATE: 1/10/1944.

0 50' 100'

SCALE: 1" = 50'

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

GROUNDWATER MONITORING WELL LOCATIONS

Project 2202959 | October 2024 | Fig. 8

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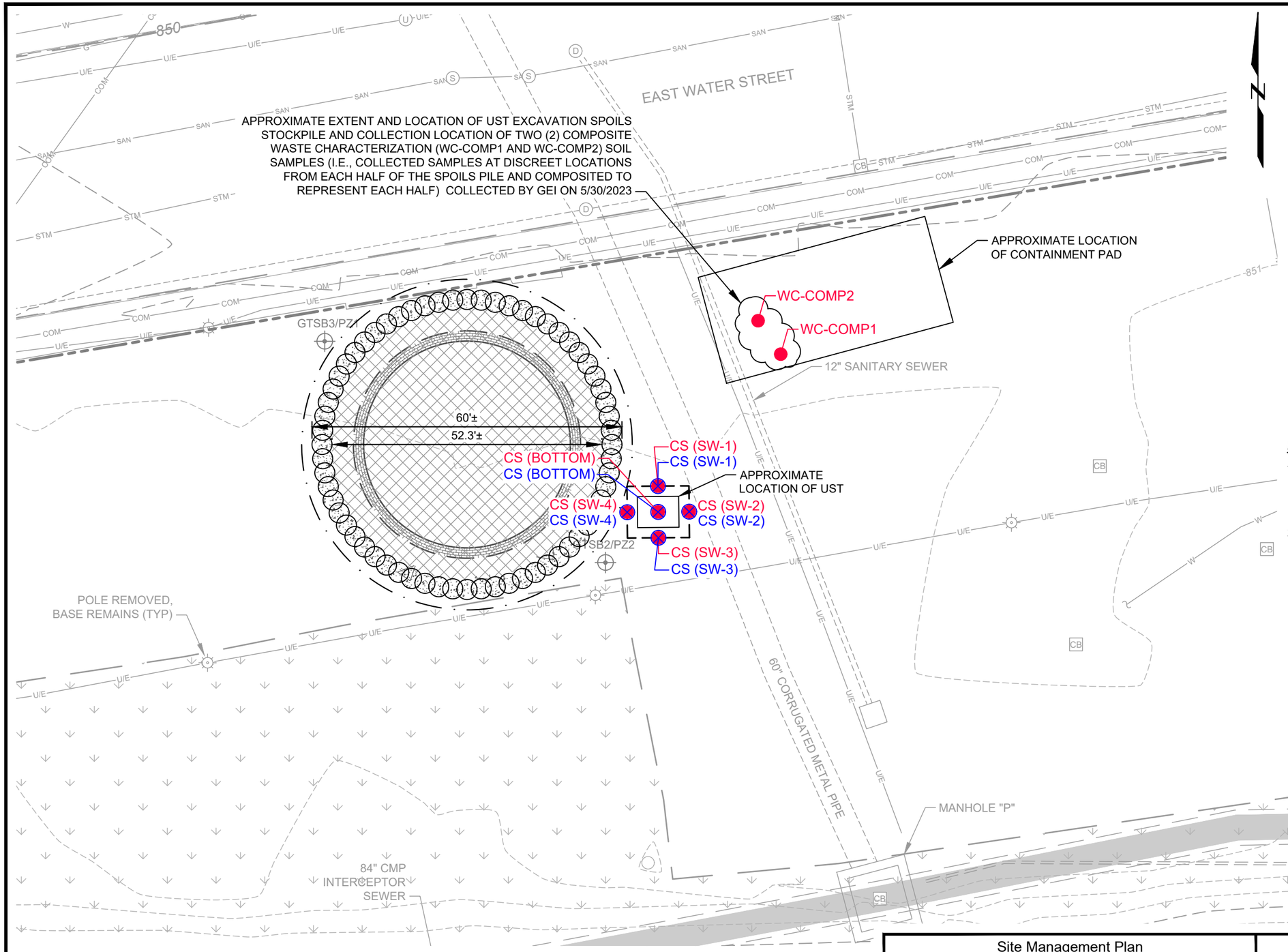


LEGEND:

- CONFIRMATION SOIL SAMPLE [1]
- PFAS DOCUMENTATION CONFIRMATION SOIL SAMPLE [2]
- UST EXCAVATION
- GAS HOLDER EXCAVATION
- SECANT PILE
- TEMPORARY GUIDE WALL
- TAX PARCEL BOUNDARY
- MGP SITE BOUNDARY
- PDI GEOTECHNICAL BORING WITH VWP
- FOUNDATION WALL

NOTES:

1. CONFIRMATION SAMPLES CS (SW-1) THROUGH CS (SW-4) AND CS (BOTTOM) WERE COLLECTED BY GEI ON 5/30/2023 POST SEVENSON PERFORMING UST REMOVAL AND EXCAVATION ACTIVITIES.
2. PFAS DOCUMENTATION CONFIRMATION SAMPLES WERE COLLECTED BY GEI ON 6/8/2023 PRE-BACKFILL.

SOURCES:

1. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.
2. *ELMIRA, NY SECTION NO. 2, CHEMUNG RIVER, LEFT BANK, PLAN AND PROFILE,* PREPARED BY: ARMY CORPS OF ENGINEERS, 1" = 50', DATE: 1/10/1944.

0 20 40
SCALE, FEET

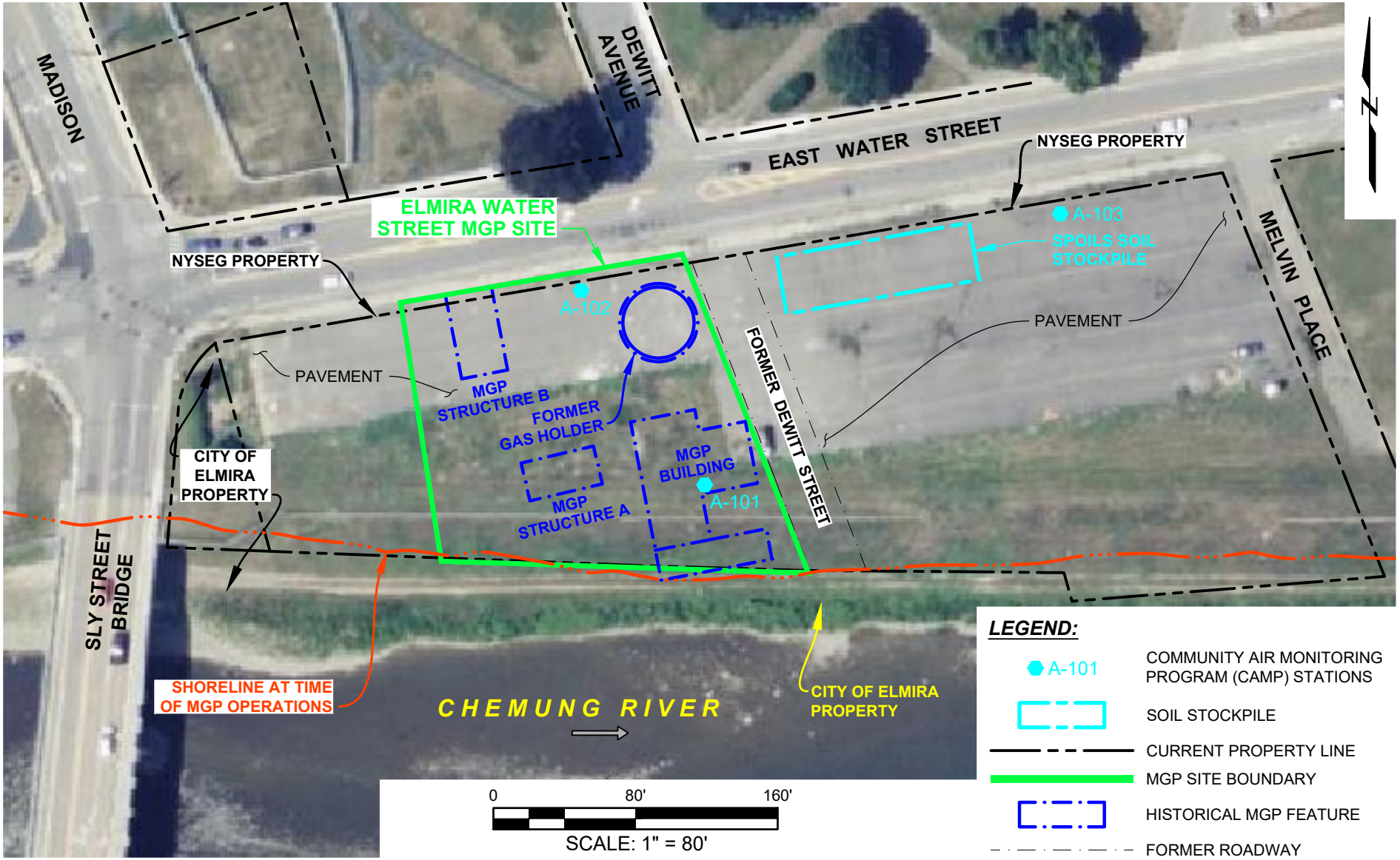
Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

GEI Consultants

UNDERGROUND STORAGE TANK (UST) REMEDIATION AND CONFIRMATION SAMPLING LOCATIONS

Project 2202959 | October 2024 | Fig. 9



SOURCES

1. BING AERIAL ©2023 MICROSOFT CORPORATION ©2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS ACCESSED VIA CIVIL3D ON 07/31/2023.
2. 5/30/13 KEYSTONE ASSOCIATES PLS, SURVEY.

Site Management Plan
Elmira Water Street MGP Site
Elmira, New York

NYSEG
Binghamton, New York

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SOIL STOCKPILE AREAS AND CAMP STATION LOCATIONS

Project 2202959 | October 2024 | Fig. 10

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Appendix A

List of Site Contracts

Appendix B

Excavation Work Plan

Appendix C

Responsibilities of Owner and Remedial Party

Appendix D

Environmental Easement-Notice-Deed Restriction

Appendix E

Monitoring Well Boring and Construction Logs

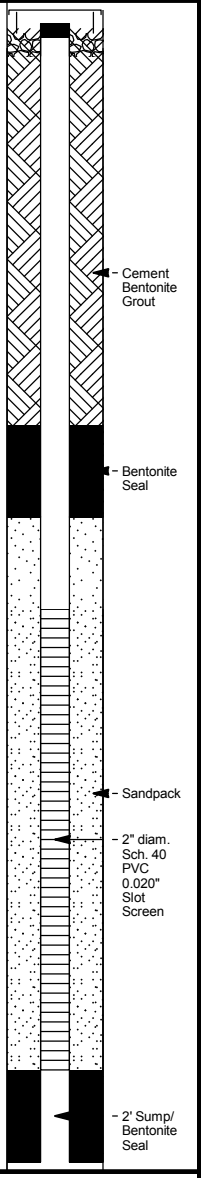
GEI Consultants, Inc.
1301 Trumansburg Road
Suite N
Ithaca, NY 14850
(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 1 of 2
MW1

GROUND SURFACE ELEVATION (FT): 851.1 **LOCATION:** Elmira, NY
NORTHING: 761014.91 **EASTING:** 762162.07 **TOTAL DEPTH (FT):** 50.0
DRILLED BY: Frontz Drilling **DATUM VERT. / HORZ.:** NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt **DATE START / END:** 5/3/2013 - 5/22/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): **RISER ELEVATION (FT):** 850.67

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	4.2			(0.0'- 0.4') ASPHALT. (0.4'- 3.5') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, dry, brown.
	5	S2	5.0	0.4	0.2			(3.5'- 4.5') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, dry, brown. (4.5'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist, light brown.
845					0.0			
					0.0			
					0.0			
	10	S3	5.0	0.4	0.0			(5.0'- 10.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist, light brown. (10.0'- 21.3') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
840					0.0			
					0.0			
	15	S4	5.0	0.1	0.0		Env. Sample ID= MW1 (14-15)	
835					0.0			
					0.0			
	20	S5	10.0	0.4	0.0			(21.3'- 30.0') WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); non plastic, ~85% gravel, subrounded, ~10% sand, fine; 5% silt, wet, light brown.
830					0.0			
	25							



NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

GEI Consultants, Inc.
1301 Trumansburg Road
Suite N
Ithaca, NY 14850
(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW1

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.0				
825					0.0				
					0.0				
	30	S6	10.0	0.8				(30.0'- 40.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.	
820					0.0				
					0.0				
	35				0.0				
815					0.0				~ Bentonite Backfill
					0.0				
	40	S7	10.0	0.8			Env. Sample ID= MW1 (41-42)	(40.0'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist, gray.	
810					0.0				
					3.2				
	45				0.0				
805					0.0				
					0.0				
	50							Bottom of borehole at 50.0 feet.	

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

Boring Location: E Water, Elmira, NY MW2R
Ground El./ Datum: 850.4
Rig Type: Trull mounted rotary drill rig
Groundwater Depth: 16.9' Date: 06/28/23

Date Start/Finish: 06/28 - 06/29
Driller/Company: Nothnagle
Casing Type/Size: 4 ¼" hollow stem augers
Hammer Type/Drive System: autohammer
GEI Rep.: J. DeRoskers Total Depth (ft): 26

MW 2R
Pg. 1 of 1

Depth ft	Sample Type and No.	Sample Blows per 6 in. or RQD	Sample Pen / Rec in.	Drilling Remarks / Field Test Data	Layer Name	Soil and Rock Descriptions
5	Macro Core 1		20"/48 rec			silt 60%, sand 20%, gravel 20% fine reddish brown soil (SP-SM)
10	MC 2		10"/48 rec			60% small gravel, 20% small sand, 20% fine silt wet soil (SP-SM)
15	MC 3		10"/48 rec			60% coarse sand, 20% gravel, 20% coarse silt (SP-SM)
20	MC 4		11"/48 rec			50% small gravel, 30% coarse small sand, 20% fine silt very liquidy / wet (SP-SM)
25	MC 5		11.5"/48 rec			50% small gravel, 20% fine gravel, 20% coarse sand, 10% fine silt very liquidy / wet (GW-GM)
						EOB @ 25' bgs

Project Name:
GEI Project No:
Client:

Blows per 6 in. - 140 lb. Hammer Falling 30 in. to drive a 2.0 in. OD Split Spoon Sampler
Pen - Penetration Length | Rec - Recovery Length | C - Core Sample
S - Split Spoon Sample | Qp - Pocket Penetrometer Strength | RQD - Length of Sound Cores > 4 in./Length Cored, %
U - Undisturbed Sample | Sv - Pocket Torvane Shear Strength | PID - Photo Ionization Detector (Jar Headspace), ppm

Notes:

GEI Consultants

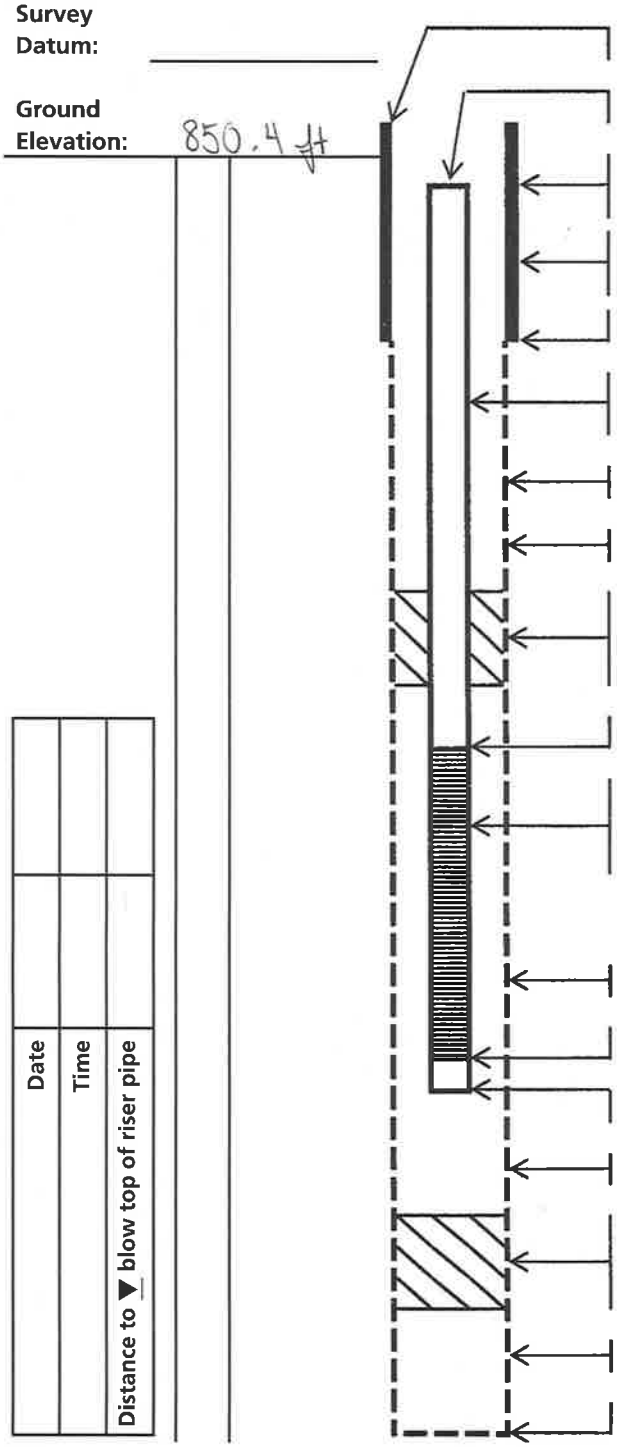
Groundwater Well Installation Log

MW2R

Project Elmira Water Street Former MGP
City/Town Elmira, New York
Client NYSEG
Contractor GEI Consultants
Driller Nothnagle
GEI Rep. J. DeRosiers, B. Coulombe

GEI Proj. No. 2202959
Location Water St., Elmira, NY
Latitude: 42.08867
Longitude: -76.796723 (Decimal format)
Install Date 06/28/23

Survey Datum:
Ground Elevation: 850.4 ft



Length of Surface Casing above Ground	flush
Dist. Top of Surf. Casing to Top of Riser Pipe	3"
Type and Thickness of Seal around Surface Casing	Concrete
ID of Surface Casing	
Type of Surface Casing	Roadbox
Depth of Bottom of Surface Casing	18"
ID and OD of Riser Pipe	2" ID
Type of Riser Pipe	2" Sch 40 PVC
Type of Backfill around Riser Pipe	Cement Bentonite Grout
Diameter of Borehole	approx. 8"
Depth Top of Sea	9 ft
Type of Seal	Bentonite
Depth Bottom of Seal	11 ft
Depth Top of Screened Section	13 ft
Type of Screen	Sch 40 PVC 0.020"
Description of Screen Openings	slot screen
ID and OD of Screened Section	2" ID
Type of Filter Material	Sandpack
Depth Bottom of Screened Section	23 ft
Depth Bottom of ~~Silt Trap~~ DNAPL Sump	25 ft
Depth Bottom of Filter Material	23 ft
Depth Top of Sea	23 ft
Type of Seal	Bentonite
Depth Bottom of Seal	25 ft
Type of Backfill below Filter Material	Bentonite
Bottom of Borehole	25 ft

Notes: Locking expandable well plug on well

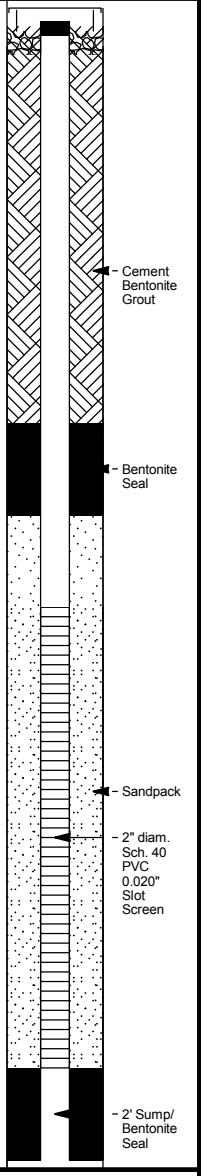
GEI Consultants

GEI Consultants, Inc. 1301 Trumansburg Road Suite N Ithaca, NY 14850 (607) 216-8955	CLIENT: NYSEG PROJECT: Elmira Water Street MGP Site CITY/STATE: Elmira, NY GEI PROJECT NUMBER: 116120	BORING LOG PAGE 1 of 2 MW3

GROUND SURFACE ELEVATION (FT): 851.4 LOCATION: Elmira, NY
NORTHING: 760970.41 EASTING: 762279.49 TOTAL DEPTH (FT): 50.0
DRILLED BY: Frontz Drilling DATUM VERT. / HORZ.: NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt DATE START / END: 5/6/2013 - 5/21/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): RISER ELEVATION (FT): 851.08

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	2.1			(0.0'- 3.5') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% gravel, fine to coarse, subrounded; 5% silt, many brick fragments, dry, brown.
	5	S2	5.0	0.4	0.0			(3.5'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~15% gravel, fine to coarse, subrounded; 5% silt, many brick fragments, dry, brown.
845					0.0			(5.0'- 6.6') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~15% gravel, fine to coarse, subrounded; 5% silt, many brick fragments, dry to moist, brown.
					0.0			
					0.0			(6.6'- 10.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist, light brown.
	10	S3	5.0	0.4	0.5			(10.0'- 27.7') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
840					0.1			
					0.0			
	15	S4	5.0	0.4	0.4		Env. Sample ID= MW3 (49-50)	
835					0.0			
					0.0			
	20	S5	10.0	0.8	0.1			
830					0.0			
	25							

WELL CONSTRUCTION DETAILS



NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

GEI Consultants, Inc.
1301 Trumansburg Road
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(607) 216-8955

CLIENT:	NYSEG
PROJECT:	Elmira Water Street MGP Site
CITY/STATE:	Elmira, NY
GEI PROJECT NUMBER:	116120

BORING LOG

PAGE 2 of 2

MW3

ELEV. FT.	DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.0				
825					0.0				
					0.2			(27.7'- 33.6') LEAN CLAY (CL); medium plasticity, ~10% sand, fine; 90% clay, moist, gray.	
	30	S6	10.0	0.8					
820					0.0				
					0.0			(33.6'- 40.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist to wet, gray.	
	35				0.0				
815					0.0				~ Bentonite Backfill
					1.1				
	40	S7	10.0	0.8				(40.0'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist to wet, gray.	
810					0.2				
					0.0				
	45				0.1				
805					0.0				
	50				0.0		Env. Sample ID= MW3 (49-50)	Bottom of borehole at 50.0 feet.	

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

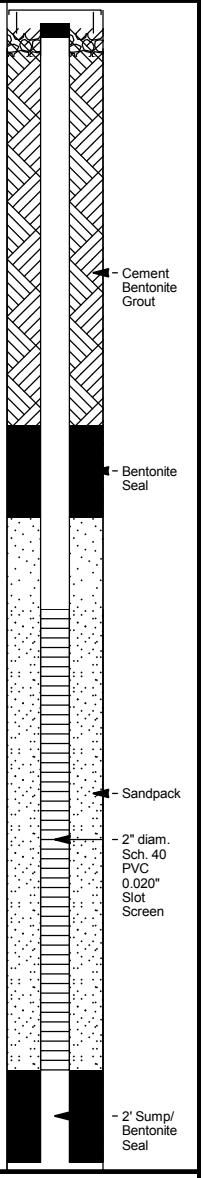
GEI Consultants, Inc.
1301 Trumansburg Road
Suite N
Ithaca, NY 14850
(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 1 of 2
MW4

GROUND SURFACE ELEVATION (FT): 851.0 **LOCATION:** Elmira, NY
NORTHING: 761019.58 **EASTING:** 762312.70 **TOTAL DEPTH (FT):** 50.0
DRILLED BY: Frontz Drilling **DATUM VERT. / HORZ.:** NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt **DATE START / END:** 5/2/2013 - 5/21/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): **RISER ELEVATION (FT):** 850.54

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	1.3			(0.0'- 0.4') ASPHALT. (0.4'- 1.3') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, dry, brown. (1.3'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, many brick fragments, moist, brown, concrete at 1.3' bgs.
					0.0			
					0.0			
					0.0			
845	5	S2	5.0	0.4	0.0			(5.0'- 10.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist, brown.
					0.0			
					0.0			
840	10	S3	5.0	0.4	0.0			(10.0'- 15.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist to wet, light brown.
					0.0			
					0.1			
835	15	S4	5.0	0.4	0.2		Env. Sample ID= MW4 (15-16)	(15.0'- 20.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
					0.0			
					0.0			
830	20	S5	10.0	0.7	0.1			(20.0'- 30.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~20% gravel, fine to coarse, subrounded; 5% silt, wet, light brown.
					0.0			
	25							



NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

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1301 Trumansburg Road
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(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW4

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
825	25				0.0				
					0.0				
					0.0				
	30	S6	10.0	0.8				(30.0'- 31.8') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~20% gravel, fine to coarse, subrounded; 5% silt, wet, light brown.	
820					0.0			(31.8'- 46.2') LEAN CLAY (CL); medium plasticity, ~10% sand, fine; 90% clay, moist, gray.	
					0.0				
	35				0.0				
815					0.0				~ Bentonite Backfill
					0.0				
	40	S7	10.0	0.8					
810					0.0				
					0.0				
	45				0.0				
805					0.0		Env. Sample ID= MW4 (47-48)	(46.2'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist to wet, gray.	
	50							Bottom of borehole at 50.0 feet.	

NOTES:

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PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

GEI Consultants, Inc.
1301 Trumansburg Road
Suite N
Ithaca, NY 14850
(607) 216-8955

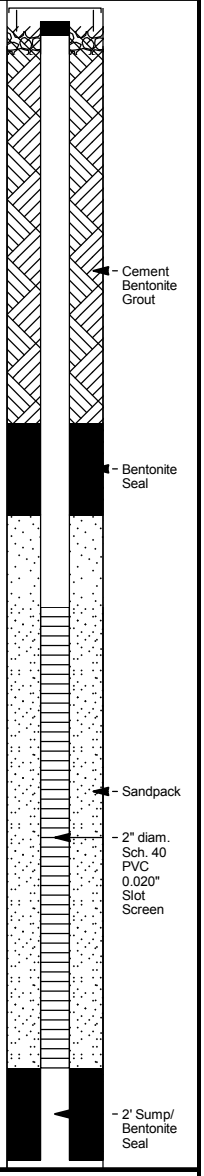
CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 1 of 2
MW5

GROUND SURFACE ELEVATION (FT): 852.3 **LOCATION:** Elmira, NY
NORTHING: 760935.02 **EASTING:** 762160.13 **TOTAL DEPTH (FT):** 50.0
DRILLED BY: Frontz Drilling **DATUM VERT. / HORZ.:** NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt **DATE START / END:** 5/6/2013 - 5/20/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): **RISER ELEVATION (FT):** 851.85

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	2.5			(0.0'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, dry to moist, brown.
845	5	S2	5.0	0.4	0.0 0.0 0.0			(5.0'- 6.6') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, some brick and concrete fragments, dry to moist, brown. (6.6'- 10.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~85% sand, fine, ~5% gravel, fine to coarse, subrounded; 10% silt, moist, light brown.
840	10	S3	5.0	0.4	0.0 0.1 0.0		Env. Sample ID= MW5 (14-15)	(10.0'- 20.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
835	15	S4	5.0	0.4	0.5 0.0 0.0			
830	20	S5	10.0	0.8	0.7 1.2			(20.0'- 30.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist to wet, gray.
	25							

WELL CONSTRUCTION DETAILS



NOTES:

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ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

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CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW5

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.1				
825					0.0				
					0.0				
	30	S6	10.0	0.8				(30.0'- 40.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.	
820					1.0				
					0.1				
	35				0.0				
815					0.0				~ Bentonite Backfill
					1.4				
	40	S7	10.0	0.8				(40.0'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.	
810					0.0				
					0.0				
	45				0.0				
805					0.0				
					0.0		Env. Sample ID= MW5 (49-50)		
	50							Bottom of borehole at 50.0 feet.	

NOTES:

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FT. = FEET

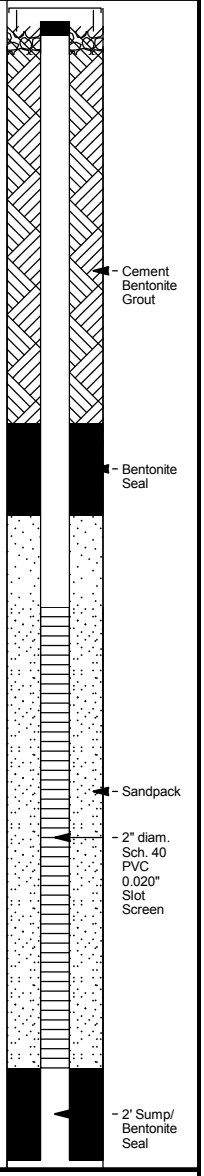
ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

GEI Consultants, Inc. 1301 Trumansburg Road Suite N Ithaca, NY 14850 (607) 216-8955	CLIENT: NYSEG PROJECT: Elmira Water Street MGP Site CITY/STATE: Elmira, NY GEI PROJECT NUMBER: 116120	BORING LOG PAGE 1 of 2 MW6

GROUND SURFACE ELEVATION (FT): 852.1 LOCATION: Elmira, NY
NORTHING: 760937.91 EASTING: 762251.76 TOTAL DEPTH (FT): 50.0
DRILLED BY: Frontz Drilling DATUM VERT. / HORZ.: NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt DATE START / END: 5/6/2013 - 5/20/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): RISER ELEVATION (FT): 851.49

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	3.0			(0.0'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, dry, brown.
845	5	S2	5.0	0.4	0.0 0.0 0.2			(5.0'- 10.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, moist, brown.
840	10	S3	5.0	0.4	0.0 0.3 0.3			(10.0'- 13.8') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, some brick fragments, moist to wet, brown.
835	15	S4	5.0	0.4	0.0 0.0 7.3		Env. Sample ID= MW6 (19-20)	(13.8'- 21.7') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
830	20	S5	10.0	0.8	0.0 0.0			(21.7'- 30.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.
	25							

WELL CONSTRUCTION DETAILS



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FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

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1301 Trumansburg Road
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(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW6

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN FT.	SAMPLE INFO: REC FT.	SAMPLE INFO: PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.0				
825					0.0				
					0.0				
	30	S6	10.0	0.8				(30.0'- 40.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.	
820					0.0				
					0.0				
	35				0.0				
815					0.0				~ Bentonite Backfill
					0.0				
	40	S7	10.0	0.8				(40.0'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, gray.	
810					0.0				
					0.0				
	45				0.0				
805					0.3		Env. Sample ID= MW6 (48-49)		
	50				0.2				

Bottom of borehole at 50.0 feet.

NOTES:

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PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

GEI Consultants, Inc. 1301 Trumansburg Road Suite N Ithaca, NY 14850 (607) 216-8955	CLIENT: NYSEG PROJECT: Elmira Water Street MGP Site CITY/STATE: Elmira, NY GEI PROJECT NUMBER: 116120	BORING LOG PAGE 1 of 2 MW7

GROUND SURFACE ELEVATION (FT): 851.5 LOCATION: Elmira, NY
NORTHING: 760941.59 EASTING: 762310.57 TOTAL DEPTH (FT): 50.0
DRILLED BY: Frontz Drilling DATUM VERT. / HORZ.: NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt DATE START / END: 5/3/2013 - 5/21/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): RISER ELEVATION (FT): 851.14

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	4.8			(0.0'- 0.4') ASPHALT. (0.4'- 2.5') FILL: SILTY SAND (SM); ~75% sand, fine, ~10% gravel, fine to coarse; 15% silt, trace brick fragments, dry to moist, brown.
					0.2			
	5				0.2			(2.5'- 5.0') FILL: SILTY SAND (SM); non plastic, ~75% sand, fine, ~10% gravel, fine to coarse, subrounded; 15% silt, some brick fragments, dry to moist, brown.
		S2	5.0	0.4				
845					2.4			(5.0'- 10.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, many brick fragments, moist, brown.
					0.2			
					0.0			
	10	S3	5.0	0.4				(10.0'- 11.4') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, many brick fragments, moist, brown.
840					0.0			
					0.0			(11.4'- 15.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
					0.0			
	15	S4	5.0	0.4				(15.0'- 20.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
835					0.0			
					0.0			
					3.0		Env. Sample ID= MW7 (18-19)	
	20	S5	10.0	0.8				(20.0'- 30.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
830					1.2			
					0.0			
	25							

WELL CONSTRUCTION DETAILS: Cement Bentonite Grout; Bentonite Seal; Sandpack; 2" diam. Sch. 40 PVC 0.020" Slot Screen; 2' Sump/ Bentonite Seal

NOTES:

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PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

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1301 Trumansburg Road
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Ithaca, NY 14850
(607) 216-8955

CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW7

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN FT.	SAMPLE INFO: REC FT.	SAMPLE INFO: PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.0				
825					0.1				
	30				0.0				
		S6	10.0	0.8				(30.0'- 44.6') LEAN CLAY (CL); medium plasticity, ~10% sand, fine; 90% clay, moist, gray.	
820					0.0				
					0.0		Env. Sample ID= MW7 (34-35)		
	35				0.0				
815					0.2				~ Bentonite Backfill
					0.0				
	40	S7	10.0	0.8					
810					0.0				
					0.0				
	45				0.0			(44.6'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist, gray.	
805					0.0				
					0.0				
	50				0.0				

Bottom of borehole at 50.0 feet.

NOTES:

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PPM = PARTS PER MILLION
IN. = INCHES
FT. = FEET

ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

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1301 Trumansburg Road
Suite N
Ithaca, NY 14850
(607) 216-8955

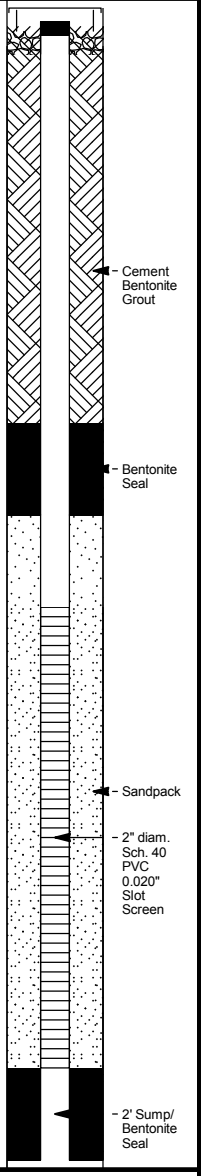
CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 1 of 2
MW8

GROUND SURFACE ELEVATION (FT): 851.1 **LOCATION:** Elmira, NY
NORTHING: 760953.26 **EASTING:** 762379.06 **TOTAL DEPTH (FT):** 50.0
DRILLED BY: Frontz Drilling **DATUM VERT. / HORZ.:** NAVD 88 / NAD 83
LOGGED BY: Garrett Schmidt **DATE START / END:** 5/3/2013 - 5/21/2013
DRILLING DETAILS: Rotosonic
WATER LEVEL ELEVATION (FT): **RISER ELEVATION (FT):** 850.69

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
850	0	S1	5.0	0.4	0.3			(0.0'- 0.2') ASPHALT. (0.2'- 5.0') FILL: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~5% gravel, fine to coarse, subrounded; 15% silt, dry, brown.
845	5	S2	5.0	0.4	0.0 0.0 1.1			(5.0'- 6.7') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, dry to moist, brown. (6.7'- 10.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded; 10% silt, moist, light brown.
840	10	S3	5.0	0.4	0.1 0.3 0.0			(10.0'- 15.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist to wet, light brown.
835	15	S4	5.0	0.4	0.1 0.0 0.0		Env. Sample ID= MW8 (17-18)	(15.0'- 20.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
830	20	S5	10.0	0.8	0.0 0.0			(20.0'- 30.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); non plastic, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, wet, light brown.
	25							

WELL CONSTRUCTION DETAILS



NOTES:

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ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

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CLIENT: NYSEG
PROJECT: Elmira Water Street MGP Site
CITY/STATE: Elmira, NY
GEI PROJECT NUMBER: 116120

BORING LOG
PAGE 2 of 2
MW8

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC FT.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	25				0.0				
825					0.1				
					0.7				
	30	S6	10.0	0.8				(30.0'- 43.6') LEAN CLAY (CL); medium plasticity, ~10% sand, fine; 90% clay, moist, gray.	
820					0.0				
					0.0				
	35				0.0				
815					0.0				~ Bentonite Backfill
					0.0				
	40	S7	10.0	0.8					
810					0.0				
					0.0		Env. Sample ID= MW8 (44-45)	(43.6'- 50.0') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); low plasticity, ~75% sand, fine, ~15% gravel, fine to coarse, subrounded; 10% silt, moist, gray.	
	45				0.0				
805					1.0				
					0.1				
	50							Bottom of borehole at 50.0 feet.	

NOTES:

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ENVIRONMENTAL BORING LOG_REV JULY 2013 ELMIRA WATER ST BORELOGS.GPJ GEI CONSULTANTS.GDT 8/1/13

Appendix F

Field Sampling Plan

GEI Consultants

Consulting
Engineers and
Scientists

Appendix F

Field Sampling Plan

Site Management Plan

Elmira Water St. MGP Site
Elmira, New York
NYSDEC Site # 808025

Submitted to:
NYSEG
18 Link Drive, P.O. Box 5224
Binghamton, NY 13902-5224

Submitted by:
GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N
Ithaca, NY 14850

Project #: 2202959-2.12

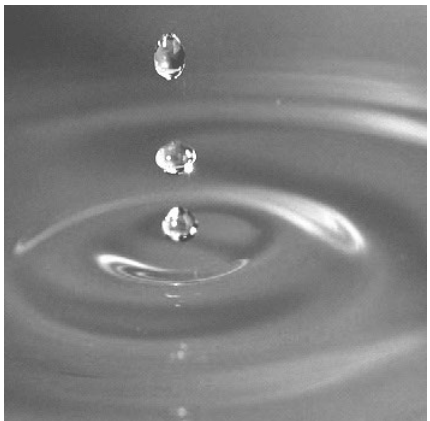

Table of Contents

Appendix

Abbreviations and Acronyms

AOC	Area of Concern
ASTM	American Society for Testing and Materials
BOD	Biological Oxygen Demand
BTEX	Benzene, Toluene, Ethyl Benzene, Xylenes
CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Cleanup, and Liability Act
CFR	Code of Federal Regulations
COC	Chain of Custody
DL	Detection Limit
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
DQO	Data Quality Objectives
EC	Engineering Controls
EIS	Environmental Impact Study
EPA	Environmental Protection Agency
FID	Flame Ionization Detector
FS	Feasibility Study
FWRIA	Fish and Wildlife Resources Impact Analysis
GAC	Granular Activated Carbon
GC/MS	Gas Chromatograph/Mass Spectrometer
GFAA	Graphite Furnace Atomic Absorption Spectrometry
GIS	Geographic Information Systems
GPR	Ground-penetrating Radar
HASP	Health and Safety Plan
HOC	Halogenated Organic Compound
HDPE	High-Density Polyethylene
HPLC	High-Pressure Liquid Chromatography
HSO	Health and Safety Officer

IC	Institutional Controls
ICP	Inductively Coupled Plasma Atomic Emission Spectrometry
IDW	Investigation Derived Waste
LEL	Lower Explosive Limit
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level (for EPA Drinking Water Standards)
MDL	Method Detection Limit
MGP	Manufactured Gas Plant
MSDS	Material Safety Data Sheet
NAPL	Non-Aqueous Phase Liquids
NCP	National Contingency Plan
NPL	National Priority List
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
QHHEA	Qualitative Health and Human Exposure Assessment
RAO	Remedial Action Objectives
RAP	Remedial Action Plan
RCRA	Resource Conservation Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RFP	Request For Proposal
RP	Responsible Party
SARA	Superfund Amendments and Reauthorization Act
SCGs	Standards, Criteria, and Guidance
SMP	Site Management Plan
SOP	Standard Operating Procedure
SOW	Scope of Work or Statement of Work

SPLP	Synthetic Precipitate Leaching Procedure
STEL	Short-Term Exposure Limit
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound from Mass Spectrometry
TOC	Total Organic Carbon
TOSCA	Toxic Substance Control Act
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WP	Work Plan
XRF	X-Ray Fluorescence

Measurements

ppm	Parts per million
ppb	Parts per billion
ppbv	Parts per billion by volume
ppmv	Parts per million by volume
bgs	Below Ground Surface
msl	Mean Sea Level
µg/L	Microgram per liter
µg/Kg	Microgram per kilogram
µg/m³	Microgram per cubic meter
mg/L	Milligram per liter
mg/kg	Milligram per kilogram
Mf/L	Million fibers per liter

1. Introduction

This Field Sampling Plan (FSP) presents the methods and procedures to be used by the Engineer or Owner's Representative to perform field activities on an as-needed basis at the Elmira Water St. MGP Site located in Elmira, New York.

2. Field Activities

The methods and procedures to be used, and field activities to be performed for the Remedial Action, are described below.

2.1 Site Hazards

Staff must work closely to coordinate any sampling in accordance with the Engineer's HASP and any additional safety requirements in place at the time of sampling as identified by the Owner's representatives. Potential on-site surface hazards, such as traffic, sharp objects, overhead power lines, and energized areas will be identified prior to initiation of the field work. The potential hazards at the site will be identified during a site reconnaissance by the project team on or before the day of the field activities. Additional safety measures necessary for the activities performed during the investigation are described in the site-specific Health and Safety Plan (HASP).

2.2 Field Book and Documentation

Field activities will be documented in the field book. Entries will be of sufficient detail to provide a comprehensive daily record of significant events, observations, and measurements. The field book will provide a legal record of the activities conducted at the site.

- Field books will be assigned a unique identification number.
- Field books will be bound with consecutively numbered pages.
- Field books will be controlled by the Site Manager while field work is in progress.
- Entries will be written with waterproof ink.
- Entries will be signed and dated at the conclusion of each day of field work.
- Erroneous entries made while field work is in progress will be corrected by the field person that made the entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing the correction.
- Corrections necessary after departing the field will be made by the person who entered the original information. Corrections will be made by drawing a line through the error, entering the correct information, and initialing and dating the time of the correction.

At a minimum, daily field book entries will include the following information:

- Location of field activity
- Date and time of entry

- Names and titles of field team members on site and site contacts
- Names, titles of any site visitors, as well as the date and time entering and leaving the site
- Weather information, for example: temperature, cloud coverage, wind speed, and direction
- Purpose of field activity
- A detailed description of the field work conducted
- Sample media (soil, etc.)
- Sample collection method
- Number and volume of sample(s) taken
- Description of sampling point(s)
- Preservatives used
- Analytical parameters
- Date and time of collection
- Sample identification number(s)
- Sample distribution (e.g., laboratory)
- Field measurements made during soil screening with the photo-ionization detector (PID)
- Reference information for maps, sketches, and photographs of the sampling site(s)
- Information pertaining to sample documentation such as:
    - Dates and method of sample shipments
    - Chain-of-custody record numbers
    - Federal Express or UPS air bill numbers

Additional details related to site documentation are provided in the FD-001 Field Notebook Standard Operating Procedure (SOP) included in Appendix A.

2.3 Groundwater Monitoring

2.3.1 Groundwater Sampling and Analysis

Groundwater monitoring wells will be sampled regularly for volatile organic compounds (VOCs) by Method 8260 and semi-volatile organic compounds (SVOCs) by Method 8270 to assess the performance of the remedy. Sampling will be performed consistent with the GW-003 Low-Flow Groundwater Sampling SOP and field measurement SOPs GW-003 through GW-007 (Appendix A). A groundwater sampling log will be prepared for each well to record the sampling details (a template log is provided in the GW-003 Low-Flow Groundwater Sampling SOP). The Sample Handling SOP (SC-002) outlines additional

procedures related to packaging samples for transfer to the laboratory (provided in Appendix A).

The laboratory will prepare a Level 4 NYSDEC Category B deliverable package to allow for data validation and DUSR preparation. The Engineer will include the sample results package(s) in subsequent NYSDEC reporting.

2.4 Excavation Confirmation / Documentation Soil Sampling

Collection of soil samples may be required should excavations occur in the future to document the condition of soil remaining onsite and/or to confirm that the excavation activities have accomplished the remedial goals set forth in the ROD. The following will be used during soil sampling:

- Field book
- Project plans
- PPE in accordance with the HASP
- PID with a 10.2 or 10.6 eV lamp
- Camera
- Clear tape, duct tape
- Laboratory sample bottles
- Coolers and ice
- Shipping supplies

If excavation soil sampling is necessary, it is expected that the Contractor will notify the Engineer at least three days prior to the anticipated sample collection date, and assist the Engineer with the sample collection by collecting soil with the excavator bucket from the final excavation depth and sidewalls, as necessary, and providing the material to the Engineer staff for transmittal to the appropriate laboratory glassware. A log of the sampling will be prepared which will include soil type and physical characteristics, as well as the presence or absence of visual evidence of MGP residuals. The soil classification will be performed with the methods provided in the SC-002 Sample Handling SOP in Appendix A.

2.4.1 Sample Analyses

The excavation bottom samples may be analyzed for the following:

- SVOCs by Method 8270;
- VOCs by Method 8260;
- Cyanide; and/or

- Any other parameters identified by the New York State Department of Environmental Protection and/or Owner's Representative.

The laboratory will prepare a Level 4 NYSDEC Category B deliverable package to allow for data validation and DUSR preparation. The Engineer will include the sample results package(s) in subsequent NYSDEC reporting . Sample Collection and Sample Handling SOPs (SC-001 and SC-002) outline the field procedures and are provided in Appendix A.

2.5 On-Site Fill Sampling and Analysis

2.5.1 Imported Fill

If imported fill is to be used on site, the Contractor will identify potential sources of imported material and will be responsible for demonstrating that the imported material meets the requirements for imported fill and is appropriate for use as backfill for the remedial excavation area.

The chemical sampling will be consistent with the requirements of Table 5.4(e)10 of the NYSDEC DER10 and also NYSDEC's guidance document titled *Guidelines for Sampling and Analysis of PFAS* (dated April 2023). Included in Appendix B of the NYSDEC document, is a table from DER10 entitled "*Allowable Constituent Levels for Imported Fill or Soil Subdivision 5.4(e)*" [NYSDEC, 2010a]. The samples will be analyzed for the COCs identified by NYSDEC DER10 (further described below). Samples will also be analyzed for Per- and Polyfluoroalkyl Substances (PFAS) in accordance with NYSDEC's PFAS guidelines. Discrete and composite sampling frequency for imported fill will be based on the estimated volume of each type of imported fill required for the completion of the work and the recommendations provided in DER-10 Table 5.4(e)10. The analytical requirements for the granular fill soils are summarized as follows:

- **Composite Granular Fill Soil Sample** – Composite sample(s) of the fill material will be analyzed for:
    - SVOC TCL – EPA Method 8270;
    - Herbicides – EPA Method 8151;
    - Pesticides – EPA Method 8081;
    - Polychlorinated Biphenyls (PCBs) – EPA Method 8082;
    - Metals – EPA 6000-7000 Series (arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc)
    - Total Cyanide – EPA Method 9014.
    - Per- and Polyfluoroalkyl Substances (PFAS) – EPA Method 1668

- **Discrete Granular Fill Soil Sample** – Grab sample(s) of the fill material will be analyzed for VOC TCL – EPA Method 8260.

Samples will be handled consistent with the Sample Collection and Sample Handling SOPs (SC-001 and SC-002) and the SOP Supplement for PFAS Sampling (all provided in Appendix A). No composite samples for the VOC analyses will be permitted. The samples will be analyzed by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. The laboratory will prepare a Level 4 NYSDEC Category B deliverable package to allow for data validation and DUSR preparation. The chain-of-custody record for the sampling and the laboratory data packages, along with a completed NYSDEC Request to Import form will be submitted to the NYSDEC for review and approval prior to the import of the fill soil.

Non-soil fill materials (e.g. gravel, crushed stone or recycled concrete) may be imported without chemical testing, provided that they contain less than 10% by weight passing the No. 80 sieve and meet the requirements in DER-10, Paragraph 5.4(e)5 (or as subsequently updated by the NYSDEC [i.e., less than 10% by weight passing the No. 10 sieve and also the 100 sieve]).

The results of the backfill analyses will be compared to the allowable constituent levels by the Engineer. The results of the sampling will be provided to the NYSDEC for approval prior to importing the materials to the site. The Engineer will include the sample results package(s) and NYSDEC's formal approval of the imported fill in subsequent NYSDEC reporting.

2.5.1 On-Site Re-Use

If on-site fill is anticipated for re-use, the analytical sampling described in Section 2.4 should also be performed on material in-situ prior to excavating/moving or in the stockpile that is proposed for re-use.

2.6 Field Instruments and Calibration

Field analytical equipment will be calibrated prior to each day's use and more frequently if required. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. Instrument calibrations will be documented in the project field book and in an instrument calibration log. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all of the instrument manuals will be maintained on site by the Field Team Leader, and changes to instrumentation will be noted in the field log book.

The following field instruments will be used during the investigation:

- PID (for health and safety during sampling).

2.7 Field Equipment Decontamination and Management of Investigation-Derived Waste

2.7.1 Decontamination Area

Decontamination will be performed consistent with the QA-001 Equipment Decontamination SOP (included in Appendix A) at the area established by the Contractor.

2.7.3 Sampling Equipment Decontamination

Required materials:

- Potable water
- Phosphate-free detergent (such as Alconox™ or Simple Green™)
- Dei-ionized water
- Aluminum foil
- Plastic/polyethylene sheeting
- Plastic buckets and brushes
- Personal protective equipment (PPE) in accordance with the HASP

2.7.4 Procedures

Prior to sampling, non-dedicated sampling equipment (bowls, spoons, interface probes, etc.) will be washed with potable water and a phosphate-free detergent (such as Alconox™). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc. The sampling equipment will then be rinsed with potable water followed by a de-ionized water rinse. Between rinses, equipment will be placed on polyethylene sheets or aluminum foil, if necessary. Equipment will be wrapped in polyethylene plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

2.8 Management of Investigation-Derived Waste

Any waste generated during the sampling will be managed as outlined in the SC-003 Investigation Derived Waste SOP (included in Appendix A).

2.9 Surveying

A survey of sample locations and/or excavation limits and elevations may be required. Survey will be performed by the Contractor if possible, or otherwise by a Survey subcontractor. Horizontal locations will be reported in the applicable New York State plane horizontal coordinates (North American Horizontal Datum 1983 [NAD83], NYS Central Zone), and latitude and longitude coordinates. Elevation data will be reported in North American Vertical Datum 1988 [NAVD88].

Appendix A

FD-001 Field Notebook
FD-002 Field Observation Report
FD-003 Sample Management and Chain of Custody
FD-004 Photo Documentation
SC-001 Sample Collection
SC-002 Sample Handling
SC-003 Investigation Derived Waste
QA-001 Equipment Decontamination
QA-002 Field Quality Control Samples
GW-001 Water Level and NAPL Measurement
GW-004 pH and Temperature Measurement
GW-003 Low Flow (Low Stress) Groundwater Sampling

Appendix G

QAPP - Quality Assurance Project Plan

Table 1A
Quality Control Limits for Water Samples

		Laboratory Accuracy and Precision					
Analytical Parameters	**Analytical Method [a]**	**Matrix Spike (MS) Compounds**	**MS/MSD [b] % Recovery**	**MS/MSD RPD [c]**	**LCS [d] % Recovery**	**Surrogate Compounds**	**Surrogate % Recovery**
VOCs (e)	8260B	1,1-Dichloroethane	65-142	16	65-142	Toluene-d8	76-122
		Trichloroethene	71-120	16	71-120	p-Bromofluorobenzene	73-120
		Benzene	67-126	13	67-126	1,2-Dichloroethane-d4	72-143
		Toluene	69-120	18	69-120		
		Chlorobenzene	73-120	19	73-120		
SVOCs (f)	8270C	Phenol	30-120	39	30-120	Nitrobenzene-d5	46-120
		2-Chlorophenol	47-120	33	47-120	2-Fluorobiphenyl	44-120
		1,4-Dichlorobenzene	30-120	35	30-120	p-Terphenyl-d14	23-143
		N-Nitroso-di-n-propylamine	56-120	38	56-120	Phenol-d5	10-120
		1,2,4-Trichlorobenzene	38-120	35	38-120	2-Fluorophenol	20-120
		4-Chloro-3-methylphenol	57-126	25	57-126	2,4,6-Tribromophenol	59-136
		Acenaphthene	57-120	23	57-120		
		4-Nitrophenol	30-120	30	30-120		
		2,4-Dinitrotoluene	58-121	20	58-121		
		Pentachlorophenol	34-157	27	34-157		
		Pyrene	58-136	25	58-136		
PCBs	8082	PCB 1260	52-128		52-128	Decachlorobiphenyl	12-137
		PCB 1016	51-123		51-123	Tetrachloro-m-xylene	35-121
Inorganics (i)	6010B/6020 7470A (metals)	Inorganic Analyte	75-125 (j)	20 (k)	80-120	NA	NA
	9012A (total cyanide)		75-125 (j)	20 (k)	80-120	NA	NA

(a) Analytical Methods: NYSDEC ASP-CLP Methods with Category B data deliverables, NYSDEC, 2000 and U.S. EPA SW-846, 3rd edition, Revision 1, November 1990.
(b) Matrix Spike/Matrix Spike Duplicate
(c) Relative Percent Difference
(d) Laboratory Control Sample
(e) Target Compound List Volatile Organic Compounds
(f) Target Compound List Semi-volatile Organic Compounds
(g) Limits are advisory only
(i) Target Analyte List Inorganics (metals and cyanide
(j) Matrix spike only
(k) Laboratory duplicate RPD
NA - Not Applicable

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Table 1B
Quality Control Limits for Soil Samples

Laboratory Accuracy and Precision							
Analytical Parameters	**Analytical Method[a]**	**Matrix Spike (MS) Compounds**	**MS/MSD[b] % Recovery**	**MS/MSD RPD[c]**	**LCS[d] % Recovery**	**Surrogate Compounds**	**Surrogate % Recovery**
VOCs (e)	8260B	1,1-Dichloroethane	70-142	22	70-142	Toluene-d8	71-125
		Trichloroethene	79-121	24	79-121	p-Bromofluorobenzene	72-126
		Benzene	78-122	25	78-122	1,2-Dichloroethane-d4	64-126
		Toluene	74-123	25	74-123		
		Chlorobenzene	79-118	25	79-118		
SVOCs (f)	8270C	Phenol	36-110	25	36-110	Nitrobenzene-d5	35-113
		2-Chlorophenol	38-104	26	38-104	2-Fluorobiphenyl	43-119
		1,4-Dichlorobenzene	34-120	30	34-120	p-Terphenyl-d14	51-125
		N-Nitroso-di-n-propylamine	46-120	20	46-120	Phenol-d5	36-116
		1,2,4-Trichlorobenzene	39-105	24	39-105	2-Fluorophenol	30-107
		4-Chloro-3-methylphenol	49-125	20	49-125	2,4,6-Tribromophenol	46-129
		Acenaphthene	53-119	16	53-119		
		4-Nitrophenol	44-137	25	44-137		
		2,4-Dinitrotoluene	55-125	19	55-125		
		Pentachlorophenol	33-136	27	33-136		
		Pyrene	51-133	25	51-133		
PCBs	8082A	PCB 1016	59-154	50	59-154	Decachlorobiphenyl	34-148
		PCB 1260	51-179	50	51-179	Tetrachloro-m-xylene	35-134
Pesticides	8081A	4,4'-DDD	45 - 129	18	45 - 129	DCB Decachlorobiphenyl	42 - 146
		4,4'-DDE	49 - 120	16	49 - 120	Tetrachloro-m-xylene	37 - 136
		4,4'-DDT	47 - 145	17	47 - 145		
		Aldrin	35 - 120	24	35 - 120		
		alpha-BHC	49 - 120	19	49 - 120		
		alpha-Chlordane	45 - 120	13	45 - 120		
		beta-BHC	46 - 120	17	46 - 120		
		delta-BHC	45 - 123	14	45 - 123		
		Dieldrin	47 - 120	13	47 - 120		
		Endosulfan I	29 - 125	16	29 - 125		
		Endosulfan II	39 - 121	17	39 - 121		
		Endosulfan sulfate	43 - 120	14	43 - 120		
		Endrin	44 - 127	19	44 - 127		
		Endrin aldehyde	33 - 120	23	33 - 120		
		Endrin ketone	50 - 150	14	50 - 150		
		gamma-BHC (Lindane)	50 - 120	20	50 - 120		
		gamma-Chlordane	51 - 120	14	51 - 120		
		Heptachlor	47 - 120	16	47 - 120		
		Heptachlor epoxide	44 - 122	17	44 - 122		
		Methoxychlor	46 - 152	14	46 - 152		
		Chlordane (technical)	51 - 120	14	51 - 120		
		Toxaphene	47 - 120	16	47 - 120		
Inorganics (i)	6010B and 7471A (metals)	Inorganic Analyte	75-125 (j)	20 (k)	80-120	NA	NA
	9012 A (Total Cyanide)		75-125 (j)	20 (k)	80-120	NA	NA
	9016 (Free Cyanide)		75-125 (j)	20 (k)	80-120	NA	NA

(a) Analytical Methods: NYSDEC ASP-CLP Methods with Category B data deliverables, NYSDEC, 2000 and EPA SW-846, 3rd edition, Revision 1, November 1990,
(b) Matrix Spike/Matrix Spike Duplicate
(c) Relative Percent Difference
(d) Laboratory Control Sample
(e) Target Compound List Volatile Organic Compounds
(f) Target Compound List Semi-Volatile Organic Compounds
(g) Limits are advisory only
(h) Target Analyte List Inorganics (metals and cyanide)
(i) Matrix spike only
(j) Laboratory duplicate RPD
NA - Not Applicable

Table 2
Summary of Sampling and Analytical Program
Appendix G - Quality Assurance Project Plan
Elmira Water St. MGP Site

Matrix	Parameter	Analytical Method	Field Samples		Total
			Field Samples	Field Duplicate	
Groundwater Monitoring Well Samples	Polycyclic Aromatic Hydrocarbons (PAHs)	USEPA 8270D	8	1	9
	Target Analyte List (TAL) Metals	EPA Method 6010B	8	1	9
	Field Parameters	-	8	-	8
	NAPL Accumulation	-	8	-	8

Table 3A
Water Sample Containerization, Preservation, and Holding Times

Analysis [b]	Bottle Type	Preservation [a]	Holding Time [b]
Volatile Organic Compounds (VOCs)	3-40 mL glass vial w/ Teflon septum	Cool to 4 ^{O}C	14 days
Semi-Volatile Organics Compounds (SVOCs)	2-1000 mL glass w/ Teflon-lined cap	Cool to 4 ^{O}C	7 days to extraction 40 days to analysis
PCBs	1-1000 mL glass w/ Teflon-lined cap	Cool to 4 ^{O}C	7 days to extraction 40 days to analysis
TAL Metals	1000 mL plastic bottle	Nitric Acid to pH < 2 Cool to 4 ^{O}C	6 months, except mercury (26 days)
Total Cyanide	500 mL plastic bottle	NaOH to pH > 12 Cool to 4 ^{O}C	14 days

(a) All samples to be preserved in ice during collection and transport.

(b) Days from date of sample collection.

Table 3B
Soil Sample Containerization, Preservation, and Holding Times

Analysis [b]	Bottle Type	Preservation [a]	Holding Time [b]
Volatile Organic Compounds (VOCs) [c]	4 ounce wide-mouth clear glass w/ teflon-lined cap	Cool to 4°±2°C	14 days
Semi-Volatile Organic Compounds (SVOCs)	8 ounce wide-mouth clear glass w/ teflon-lined cap	Cool to 4°±2°C	7 days to extraction 40 days to analysis
PCBs	8 ounce wide-mouth clear glass w/ teflon-lined cap	Cool to 4°+2°C	7 days to extraction 40 days to analysis
Pesticides	8 ounce wide-mouth clear glass jar	Cool to 4°+2°C	7 days to extraction 40 days to analysis
Herbicides	8 ounce wide-mouth clear glass jar	Cool to 4°+2°C	7 days to extraction 40 days to analysis
TAL Metals	4 ounce wide-mouth clear glass jar	Cool to 4°±2°C	6 months, except mercury (28 days)
Total Cyanide	4 ounce wide-mouth clear glass jar	Cool to 4°±2°C	14 days
Free Cyanide	4 ounce wide-mouth amber glass jar	Cool to 4°+2°C	NA
TCLP Organic Compounds	8 ounce wide-mouth clear glass w/ teflon-lined cap	Cool to 4°±2°C	See Table 4
TCLP Metals	4 ounce wide-mouth clear glass	Cool to 4°±2°C	See Table 4
Corrosivity	4 ounce wide-mouth clear glass	Cool to 4°±2°C	2 days
Ignitability	4 ounce wide-mouth clear glass	Cool to 4°±2°C	NA
Reactive Cyanide	4 ounce wide-mouth clear glass	Cool to 4°±2°C	14 days
Reactive Sulfide	4 ounce wide-mouth clear glass	Cool to 4°±2°C	7 days

(a) All samples to be cooled during collection and transport.
(b) Days from date of sample collection.
NA Not Applicable
(c) VOC samples must be collected using EPA extraction Method 5035A in addition to EPA analysis Method 8260

Table 4
Field and Character Lengths for Disk Deliverable

Description	Length	Format
Field Sample ID (as shown on COC)	15	Character
CAS. No. (including -'s)	10	Character
Parameter Name	31	Character
Concentration	13	Numeric
Qualifier	4	Character
Units	8	Character
SDG	8	Character
Lab Sample ID	15	Character
Date Sampled (from COC)	D	Date
Matrix (soil/water/air)	5	Character
Method Detection Limit	13	Numeric
Method Code	8	Character
Lab Code	6	Character

Table 5A
Project Quantitation Limits
Soil

		Quantitation Limits	
Analysis/Compound	**Method**	**Water (ug/L)**	**Soil/Sediment (ug/Kg)**
Volatile Organics			
1,1,1-Trichloroethane	8260B	1.0	5
1,1,2,2-Tetrachloroethane	8260B	1.0	5
1,1,2-Trichloroethane	8260B	1.0	5
1,1,2-Trichloro-1,2,2-trifluoroethane	8260B	1.0	5
1,1-Dichloroethane	8260B	1.0	5
1,1-Dichloroethene	8260B	1.0	5
1,2-Dibromoethane	8260B	1.0	5
1,2-Dichlorobenzene	8260B	1.0	5
1,2-Dichloroethane	8260B	1.0	5
1,2-Dichloropropane	8260B	1.0	5
1,2-Dibromo-3-chloropropane	8260B	1.0	5
1,2,4-Trichlorobenzene	8260B	1.0	5
1,3-Dichlorobenzene	8260B	1.0	5
1,4-Dichlorobenzene	8260B	1.0	5
2-Butanone (MEK)	8260B	5.0	5
2-Hexanone	8260B	5.0	5
4-Methyl-2-pentanone(MIBK)	8260B	5.0	5
Acetone	8260B	5.0	20
Benzene	8260B	1.0	5
Bromodichloromethane	8260B	1.0	5
Bromoform	8260B	1.0	5
Bromomethane	8260B	1.0	5
Carbon Disulfide	8260B	1.0	5
Carbon Tetrachloride	8260B	1.0	5
Chlorobenzene	8260B	1.0	5
Chloroethane	8260B	1.0	5
Chloroform	8260B	1.0	5
Chloromethane	8260B	1.0	5
Cyclohexane	8260B	1.0	5
cis-1,2-Dichloroethene	8260B	1.0	5
cis-1,3-Dichloropropene	8260B	1.0	5
Dibromochloromethane	8260B	1.0	5
Dichlorodifluoromethane	8260B	1.0	5
Ethylbenzene	8260B	1.0	5
Isopropylbenzene	8260B	1.0	5
Methyl acetate	8260B	1.0	5
Methylene Chloride	8260B	1.0	5
Methylcyclohexane	8260B	1.0	5
Methyl tert-butyl ether	8260B	1.0	5
Styrene	8260B	1.0	5
Tetrachloroethene	8260B	1.0	5
Toluene	8260B	1.0	5
trans-1,2-Dichloroethene	8260B	1.0	5
trans-1,3-Dichloropropene	8260B	1.0	5
Trichloroethene	8260B	1.0	5
Trichlorofluoromethane	8260B	1.0	5
Vinyl Chloride	8260B	1.0	5
Xylenes(total)	8260B	3.0	15

NL = Not Listed

Note: RLs and MDLs are subject to change due to % moisture, matrix interference, and dilution factors

Note: Extraction Method 5035 will be used in addition to analysis Method 8260

Table 5B
Project Quantitation Limits
Soil and Groundwater SVOCs

Analysis/Compound	Method	Quantitation Limits Water (ug/L)	Quantitation Limits Soil (ug/Kg)
Semi-Volatile Organics			
1,1'-Biphenyl	8270C	10	330
2,2'-oxybis(1-chloropropane)	8270C	10	330
2,4,5-Trichlorophenol	8270C	10	330
2,4,6-Trichlorophenol	8270C	10	330
2,4-Dichlorophenol	8270C	10	330
2,4-Dimethylphenol	8270C	10	330
2,4-Dinitrophenol	8270C	50	1600
2,4-Dinitrotoluene	8270C	10	330
2,6-Dinitrotoluene	8270C	10	330
2-Chloronaphthalene	8270C	10	330
2-Chlorophenol	8270C	10	330
2-Methylnaphthalene	8270C	10	330
2-Methylphenol	8270C	10	330
2-Nitrolaniline	8270C	50	1600
2-Nitrophenol	8270C	10	330
3,3'-Dichlorobenzidine	8270C	50	1600
3-Nitroaniline	8270C	50	1600
4-Bromophenyl-phenyl ether	8270C	10	330
4-Chloro-3-methylphenol	8270C	10	330
4-Chloroaniline	8270C	10	330
4-Chlorophenyl phenyl ether	8270C	10	330
4-Methylphenol	8270C	10	330
4-Nitroaniline	8270C	50	1600
4-Nitrophenol	8270C	50	1600
4,6-Dinitro-2-methylphenol	8270C	50	1600
Acenaphthene	8270C	10	330
Acenaphthylene	8270C	10	330
Acetophenone	8270C	10	330
Anthracene	8270C	10	330
Atrazine	8270C	10	330
Benzo(a)anthracene	8270C	10	330
Benzo(a)pyrene	8270C	10	330
Benzo(b)fluoranthene	8270C	10	330
Benzo(g,h,i)perylene	8270C	10	330
Benzo(k)fluoranthene	8270C	10	330
Benzaldehyde	8270C	10	330
bis(2-Chloroethoxy) methane	8270C	10	330
bis(2-Chloroethyl) ether	8270C	10	330
bis(2-ethylhexyl)phthalate	8270C	10	330
Butyl benzyl phthalate	8270C	10	330
Caprolactum	8270C	10	330
Carbazole	8270C	10	330
Chrysene	8270C	10	330
Di-n-butyl phthalate	8270C	10	330
Di-n-octyl phthalate	8270C	10	330
Dibenz(a,h)anthracene	8270C	10	330
Dibenzofuran	8270C	10	330
Diethyl phthalate	8270C	10	330
Dimethyl phthalate	8270C	10	330
Fluoranthene	8270C	10	330
Fluorene	8270C	10	330
Hexachlorobenzene	8270C	10	330
Hexachlorobutadiene	8270C	10	330
Hexachlorocyclopentadiene	8270C	50	1600
Hexachloroethane	8270C	10	330
Indeno(1,2,3-cd)pyrene	8270C	10	330
Isophorone	8270C	10	330
N-Nitroso-n-propylamine	8270C	10	330
N-nitrosodiphenylamine	8270C	10	330
Naphthalene	8270C	10	330
Nitrobenzene	8270C	10	330
Pentachlorophenol	8270C	50	1600
Phenanthrene	8270C	10	330
Phenol	8270C	10	330
Pyrene	8270C	10	330

ND = Non-detect
NL = Not Listed
Note: RLs and MDLs are subject to change due to % moisture, matrix interference, and dilution factors

Table 5C
Project Quantitation Limits
Soil PCBs, Metals and Cyanide, Pesticides, and Herbicides

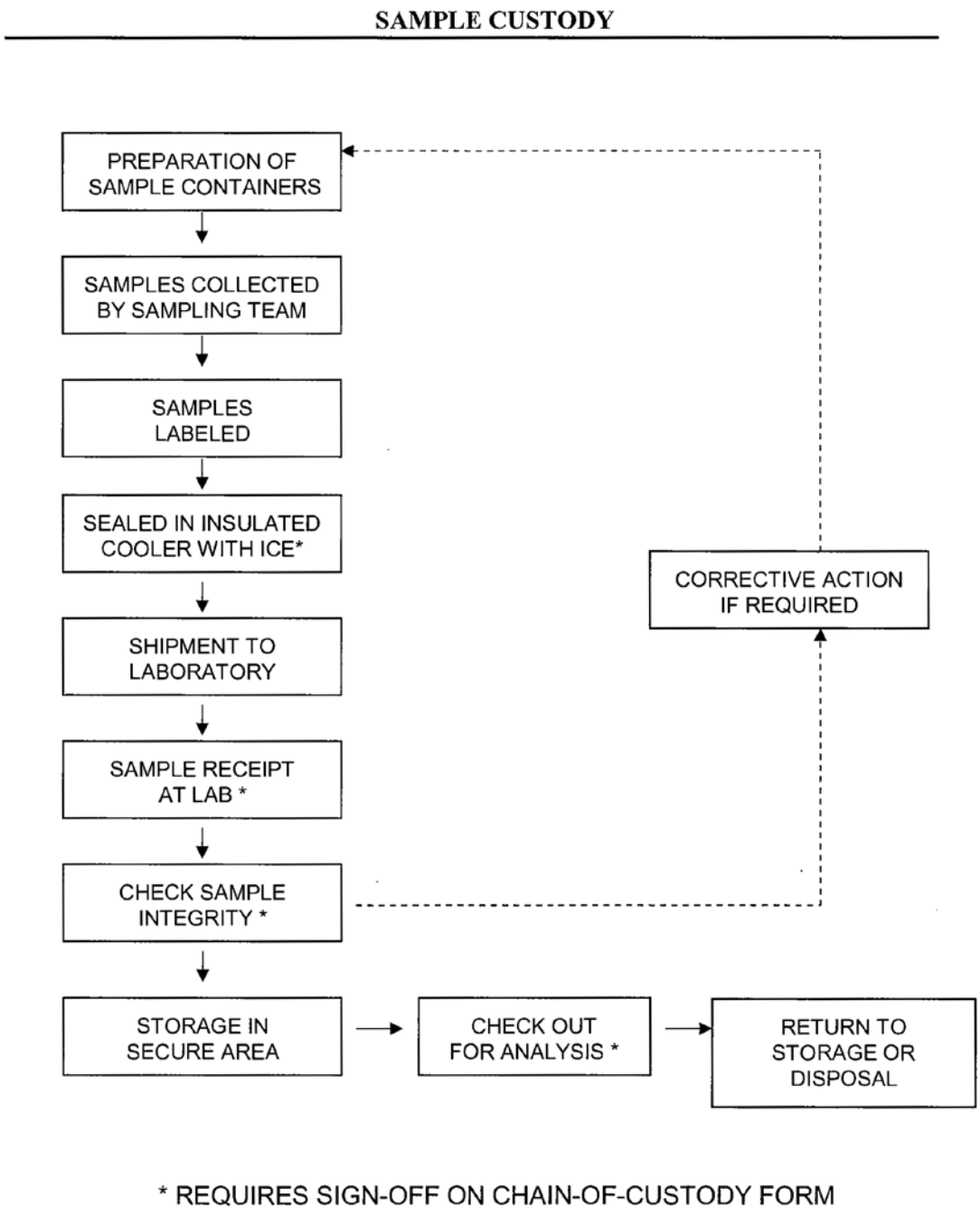
		Quantitation Limits	
Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**
Metals			
Antimony	6010B	10	1
Arsenic	6010B	10	1.0
Barium	6010B	200	2.00
Beryllium	6010B	4	0.40
Cadmium	6010B	5	0.50
Chromium	6010B	5	0.50
Copper	6010B	25	2.5
Lead	6010B	3	0.3
Mercury	7470A/7471A	0.2	0.037
Nickel	6010B	40	4.00
Selenium	6010B	5	0.5
Silver	6010B	5	0.50
Thallium	6010B	10	1.0
Zinc	6010B	20	2.0
Vanadium	6010B	50	5.00
Cobalt	6010B	50	5.00
Aluminum	6010B	200.00	20
Calcium	6010B	5000.0	500
Iron	6010B	100.00	10
Magnesium	6010B	5000.0	500
Manganese	6010B	15	1.50
Potassium	6010B	5000.0	500
Sodium	6010B	5000.0	500
Cyanide (Total)	9012A	10	1.0
Free Cyanide	9016	1.1	0.62

Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**
PCBs			
Aroclor 1016	8082	0.176	0.049
Aroclor 1221	8082	0.176	0.049
Aroclor 1232	8082	0.176	0.054
Aroclor 1242	8082	0.176	0.540
Aroclor 1254	8082	0.25	0.049
Aroclor 1260	8082	0.25	0.117
Aroclor 1262	8082	0.25	0.529
Aroclor 1268	8082	0.25	0.053

Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**
Pesticides			
4,4'-DDD	8081A	0.05	0.0016
4,4'-DDE	8081A	0.05	0.0016
4,4'-DDT	8081A	0.05	0.0016
Aldrin	8081A	0.05	0.0016
alpha-BHC	8081A	0.05	0.0016
alpha-Chlordane	8081A	0.05	0.0016
beta-BHC	8081A	0.05	0.0016
delta-BHC	8081A	0.05	0.0016
Dieldrin	8081A	0.05	0.0016
Endosulfan I	8081A	0.05	0.0016
Endosulfan II	8081A	0.05	0.0016
Endosulfan sulfate	8081A	0.05	0.0016
Endrin	8081A	0.05	0.0016
Endrin aldehyde	8081A	0.05	0.0016
Endrin ketone	8081A	0.05	0.0016
gamma-BHC (Lindane)	8081A	0.05	0.0016
gamma-Chlordane	8081A	0.05	0.0016
Heptachlor	8081A	0.05	0.0016
Heptachlor epoxide	8081A	0.05	0.0016
Methoxychlor	8081A	0.05	0.0016
Chlordane (technical)	8081A	0.5	0.0167
Toxaphene	8081A	0.5	0.0167

Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**
Herbicides			
2,4,5-T	8151A	0.5	0.0167
2,4-D	8151A	0.5	0.0167
Dalapon	8151A	0.5	0.0167
Dichlorprop	8151A	0.5	0.0167
Dinoseb	8151A	0.5	0.0167
Pentachlorophenol	8151A	0.5	0.0167
Picloram	8151A	0.5	0.0167
Silvex (2,4,5-TP)	8151A	0.5	0.0167

FIGURE 1


SAMPLE CUSTODY
PREPARATION OF SAMPLE CONTAINERS
SAMPLES COLLECTED BY SAMPLING TEAM
SAMPLES LABELED
SEALED IN INSULATED COOLER WITH ICE*
SHIPMENT TO LABORATORY
SAMPLE RECEIPT AT LAB *
CHECK SAMPLE INTEGRITY *
STORAGE IN SECURE AREA
CHECK OUT FOR ANALYSIS *
RETURN TO STORAGE OR DISPOSAL
CORRECTIVE ACTION IF REQUIRED
* REQUIRES SIGN-OFF ON CHAIN-OF-CUSTODY FORM

Chain-of-Custody Record

Laboratory:

Laboratory Job #
(Lab use only)

GEI Consultants

1301 Trumansburg Road, Suite N
Ithaca, New York
TEL: 607-216-8955

Project Information

Project Name:

Project Number:

Project Location:

Project Manager:

Send Report to:

Send Faxed Results to:

Send EDD to:

Page ____ of ____

Preservative

Analysis

Sample Handling

Sample Field Filtered
YES NO NA

Sampled Shipped With Ice
YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? YES NO

If Yes, Are Drinking Water Samples Submitted? YES NO

If Yes, Have You Met Minimum Field QC Requirements? YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	Sample Specific Remarks

Turnaround Time (Business days):

Normal _____ **Other**_____

10 Day_____ **7 Day**_____

5 Day_____ **3 Day**_____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Additional Requirements/Comments/Remarks:

Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)

14 MCP Metals = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

Figure 2

FIGURE 3 Corrective Action Request

CORRECTIVE ACTION REQUEST
Number: _____ Date: _____
TO: _____ You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by _____
CONDITION:
REFERENCE DOCUMENTS:
RECOMMENDED CORRECTIVE ACTIONS:
_____ _____ _____ _____ _____ _____ Originator Date Approval Date Approval Date
RESPONSE
CAUSE OF CONDITION
CORRECTIVE ACTION (A) RESOLUTION (B) PREVENTION (C) AFFECTED DOCUMENTS
C.A. FOLLOWUP: CORRECTIVE ACTION VERIFIED BY: _____ DATE:_____

GEI Consultants

Figure 4

GEI Resume – QAO

Jaimie L. Wargo
Senior Data Coordinator

resume

Jaimie Wargo is the Lead of an in-house service team managing analytical and survey data flowing through the East Region for QC and regulatory comparison.

Prior to joining GEI, Ms. Wargo worked 5.5 years as a Database Technician for a company providing food distribution software maintaining inventory; customer; vendor; accounts receivable; accounts payable and purchasing data. Her responsibilities included providing technical support to over 150 clients via phone, fax, email and remote access; installing new software and maintaining program updates on clients' server and troubleshooting and reporting program bugs. She also conducted in house and onsite training sessions for her clients.

EDUCATION
A.A., General Studies, Manchester Community College

EXPERIENCE IN THE INDUSTRY
20 years

EXPERIENCE WITH GEI
17 years

EXPERIENCE

As Coordinator of the Data Management team Jaimie schedules and coordinate daily deliverables, working with Project Managers and staff to identify the project needs and providing day to day technical support to our team and project staff. She works as a laboratory liaison setting up lab deliverable formats and deliverable needs and facilitate supply chain and tracking processes to ensure timely project delivery. This includes database setup and tracking, sample verification, troubleshooting data errors, database input, creating custom reports and invoice review. Ms. Wargo has also worked with multiple state agencies to provide analytical data in their required specified format.

As an EQuIS Data Specialist managing analytical, geotechnical, and survey data. Ms. Wargo has 20 years of experience managing data and over 17 years of experience using EarthSoft EQuIS, Microsoft Access and SQL Server Database. Knowledgeable with loading data using EQuIS Electronic Data Processor program as well creating MS Access tools to work with historical data loading and troubleshooting. I maintain and update quality control checks and data tracking logs. I've worked extensively with management of soils, ground water, vapor intrusion – including community response - and sediment data and familiar with coordinate conversions, stratigraphy, and boring log data. Ms. Wargo has participated in conducting on-line training and is a main point of contact and data lead for our on-line DIVR data visualization portal and help desk.

Data Management projects include but not limited to:

- Various sites Valero Energy Corporation, US and Canada
- Various sites ExxonMobil, US
- Kalamazoo River Superfund Remediation, NCR Corporation, MI
- UGI Utilities, Inc. COA, Various Sites, NJ

GEI Consultants

- 320 New Road, Monmouth Junction, NJ
- Georgia Power Company, Plant McIntosh Landfill3, Landfill4, AshPond sites, Effingham County, GA
- Con Edison, Consolidated Edison Company of NY, Various Sites, NY
- National Fuel Gas, Various Sites, Upstate NY.
- New York State Electric and Gas (NYSEG), Various Sites, NY
- Erie Street Former Manufactured Gas Plant, AGL Resources, Inc., Elizabeth, NJ.
- Orange & Rockland, Suffern MGP Site, Suffern, NY
- Henderson Remediation, Titanium Metals Corporation, Henderson, NV.
- NiSource, Various Sites, Indiana.
- Columbia Gas of Virginia/NiSource Ap - Crawford Bay Dredging-former Portsmouth Virginia MGP, Columbia Gas of VA, Inc. /NiSource AP, Portsmouth, VA.
- Cycle Chem RCRA Facility Investigation., Elizabeth, NJ
- Alpha Metals, Cookson Electronics, Jersey City, NJ
- Downing Square Environmental, Arlington, MA
- National Grid Former Manufactured Gas Plants- Various Sites, Long Island, NY.
- Gowanus Canal Superfund Site, National Grid, Brooklyn, NY.
- Rhode Island Department of Transportation, Providence, RI,
- Former Lite Control Facility, Hanson MA
- Ithaca First Street Former MGP Remedial Investigation and Workplan, New York State Electric & Gas Corp, Ithaca, NY.
- Stewardship Permit, MacDermid, Inc., Waterbury, CT.
- Sea Isle City RASR & RAW Remedial Design, FirstEnergy Corporation, Sea Isle City, NJ.

COMPUTER SKILLS

- EarthSoft EQuIS Chemistry
- Microsoft Access
- Microsoft Excel
- Microsoft PowerPoint
- Microsoft SQL Server 2012
- Microsoft Word
- Microsoft Outlook
- Adobe Acrobat
- PC Anywhere, Terminal Services, gotomeeting, VPN, Teams etc.

STANDARD OPERATING PROCEDURE

FD-003 Sample Management and Chain of Custody

1. Objective

Describe methods to label sample containers, manage the samples, and prepare Chain of Custody documentation for the samples. Sample transport is also addressed.

2. Project Setup

When setting up a sampling event, inform the recipients of the samples (laboratories) and recipients of laboratory results (data group and project managers). Discuss with the laboratory the sampling media, turnaround times, and reporting limits for appropriate regulatory criteria for the site. Include the data group on correspondence so that turnaround times, data validation, and project deliverable schedules can be tracked successfully.

- Laboratory - Number of samples, analyses needed: bottle orders and holding times, turnaround times needed, reporting limits needed for regulatory criteria.
- Data group - Number of samples, analyses requested, turnaround times and reporting limits requested, data validation needed, regulatory criteria to use for tabulating results, deliverables needed, and project name and number.
- Schedule - Inform the laboratory and Data Group of schedule delays, changes to analyses, and expediting.

3. Sampling Execution

- Review the work plan prior to sampling to determine the following:
  - Sample matrix and sampling method.
  - Required analysis and sample volumes.
  - Sample container type and preservative requirements.
  - Required analysis methods and/or report formats.
  - The turnaround time required by the project.
  - If the data will be sent directly from the laboratory to the data validator, Project Manager, or Data Group.
  - Holding time restrictions for sampling media and analytical methods.
  - Sample naming convention used for this project site.
- Sample labels should be filled out using a waterproof or permanent marker or pen. Required information includes:
  - Sample ID.
  - Date and time (military time) of sample collection.
  - Project number.
  - Sample preservatives.
  - Sampler's initials.
  - Laboratory analytical methods.

- Place the label on the jar or bottle, not on the cap. Sample custody begins at this time.
- Record the above information in the field notebook.
- Individually wrap sample jars with packing material, if needed. See SOP SC-002 for guidance on packaging samples for shipment to the laboratory by way of common carrier. Place samples in a cooler with bagged ice or freezer packs (blue ice) immediately after collection. Add sufficient ice or freezer packs to cool samples to approximately 4°C.
- Complete a chain of custody (COC) for the samples as described below. GEI or laboratory COCs may be used as long as they contain fields for all required sample information as described in Section 2.1.

3.1. Chain-of-Custody (COC) Completion

- Fill out COC neatly and in permanent ink. Alternatively, an Excel version of the GEI COC is available and can be filled out electronically.
- Certain analyses (i.e. air analysis by TO-15) require specialized, laboratory issued COCs. Make sure any specialized COCs are available before sample collection.
- Record the project name and number, the sampler's name(s) and the state where the samples were collected.
- For each sample, enter the sample identification number, date and time (military time) collected, the number of sample containers, and any additional information to fulfill project, client or regulatory requirements.
- Record the type of analysis (including laboratory method; e.g. EPA-SW846 Method XX) requested and the preservative (if appropriate) in the vertical boxes.
- Field duplicates should be anonymous to the laboratory, but must be recorded for use by the Data Group. To keep track of this information, link the field duplicate with the proper sample in the field notebook. If required by the Project Manager or Data Group, also document this information on or attach a note to the GEI copy of the COC.
- Trip blanks for large sites should be named similar to the samples they are collected with so that there are not two of the same sample name for the same site. For example, "OU1TB-122509" and "OU3TB-122509" would avoid any mistakes.
- Strike incorrect entries on the COC with a single line, followed by the initials of the person making the correction, the date, and the correct entry.
- When sample custody is ready to be relinquished, complete the bottom of the form with date and time (military time) and signatures of relinquisher and receiver of samples as indicated. The sample collector is always the first signature while the analytical laboratory is the final signature. Theoretically, all individuals handling the samples between collection and laboratory should sign the form; however, if a common carrier (i.e., Federal Express, UPS) is used for shipping, GEI must identify the carrier in the 'Received by' box on the

COC. If the sampler hand delivers the samples to the laboratory, the received box must be signed by the laboratory.

- If the samples are placed in a designated secure area (e.g. GEI sample fridge), note this location in the "Received by" box on the COC.
- GEI uses both single sheet and triplicate COCs. If using the triplicate COCs (white, yellow, and pink copies), the pink copy should be retained by the sampling personnel and provided to the Data Group for proper filing. The white and yellow copies should accompany the samples to the laboratory.
- If you are using the single sheet COC, make a copy of the COC after it has been signed by the lab courier and forward it to the Data Group.
- Prior to sample shipment by common carrier, the COC must be placed inside the cooler in a Ziplock bag or other watertight package.
- If a common carrier such as FedEx is used to transport the samples to the laboratory, include the carrier tracking number and identify the carrier in the "Received by" box on the COC.
- If a courier is used to transport samples to the laboratory (lab courier or GEI personnel), the courier signs the COC in the "Received by" box.
- Place a custody seal on the cooler if shipping via common carrier.
- Transport samples to the laboratory as soon as possible. It is preferable to transport the samples directly to the laboratory from the field. Samples brought back to the office for storage prior to submission to the laboratory must be kept cold (4° C).
- Unused sampling containers/media that are sent back to the lab should be included on a separate COC.
- After the samples are sent to the laboratory, the GEI copy of the COC must be forwarded to the Data Group: datagroup@geiconsultants.com.

4. Limitations

- Keep the number of people involved in handling samples to a minimum.
- Where practical, only allow people associated with the project to handle the samples.
- Always document the transfer of samples from one person to another on the COC.
- The COC should always accompany the samples.
- Give samples positive identification at all times that is legible and written with waterproof or permanent ink.
- When sending samples via a common carrier, use one COC per package.
- Where practical, avoid sending samples from more than one site with separate COCs in a single package.

5. References

New Jersey Department of Environmental Protection, Field Sampling Procedures Manual, August 2005.

Connecticut Department of Environmental Protection, Guidance for Collecting and Preserving Soil and Sediment Samples for Laboratory

6. Attachments

Attachment A - Example Chains of Custody
Attachment B - Shipping Info Pics

7. Contact

Brian Skelly
Leslie Lombardo

Chain of Custody Record

Example COC

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484
Tel: 203-929-8140

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: GEI	Project Manager: Dave Terry	Date: 12-31-07	Chain of Custody Number: 00452
Address: 455 Winding Brook Dr	Telephone Number (Area Code)/Fax Number: 860 368 5300 / 860 368 5307	Lab Number	Page 1 of 1
City: Glastonbury / State: CT / Zip Code: 06033	Site Contact: M. Felter	Lab Contact: Paul Mobart	
Project Name and Location (State): Carroll Gardens NY	Carrier/Waybill Number: FedEx 9383 7603 0879		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: VOC 8260B	SVOC 8270C	TO-15 + NAPHTHALENE	Special Instructions/ Conditions of Receipt
CGSB-01 (0-2)	12-31-07	1130				X	X						X	X		
CGSB-02 (3-4)	12-31-07	1250				X	X						X	X		
CGSB-02 (3-4) MS	12-31-07	1250				X	X						X	X		
CGSB-02 (3-4) MSD	12-31-07	1250				X	X						X	X		
CGSB-XX (5-6)	12-31-07	0800				X	X						X	X		
CGTB-123107	12-31-07	1400				TB				X			X			
CGGW-01	12-31-07	1430		X			X			X			X	X		
CGSG-01	12-31-07	0700-1500	X												X	CANISTER # 2613 REGULATOR # 779

Per NEW JERSEY: "CLP data package deliverables"

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other See Contract

QC Requirements (Specify): NYS Cat B ASP deliverable send to Lorie Mackinnon

Send EDD to datagroup@geiconsultants.com

	Date	Time		Date	Time
1. Relinquished By: Melissa J Felter	12-31-07	1600	1. Received By: FedEx Waybill 923117-4432	12-31-07	
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: USED FLOW CONTROLLER FOR AIR SAMPLE INCLUDED

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

EXAMPLE COC

Chain-of-Custody Record

Laboratory: Accutest

Laboratory Job # (Lab use only)

GEI Consultants
400 Unicorn Park Dr.
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: MWRA - Low Service Storage Tank
Project Location: Stoneham, MA
Project Number: 093400
Project Manager: D. Aghjayan

Send Report to: rseigener@geiconsultants.com
Send EDD to: labdata@geiconsultants.com

Page _1_ of _1_

MCP PRESUMPTIVE CERTAINTY REQUIRED – YES NO

If Yes, Are MCP Analytical Methods Required? YES NO NA
If Yes, Are Drinking Water Samples Submitted? YES NO NA
If Yes, Have You Met Minimum Field QC Requirements? YES NO NA

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	Preservative	PCBs	VPH Fractions Only	EPH Fractions Only	SVOCs	VOCs, % Solids**	Conductivity	RCRA 8 Metals*	TPH by GC/FID DRO	Sample Specific Remarks
							None / MeOH / None / None / MeOH / None / None / None	Analysis								
	093400-LS6-S5(19'-21')	12/29/2009	9:30	SO	3	JMR			x			x				
	093400-LS6-COMP (FILL)	12/29/2009	9:30	SO	1	JMR		x		x	x		x	x	x	
	093400-LS6-COMP (NATIVE)	12/29/2009	15:00	SO	1	JMR		x		x	x		x	x	x	
	093400-LS8-COMP	12/29/2009	14:00	SO	1	JMR		x		x	x		x	x	x	
	093400-LS9-S4 (8'-8'-5")	12/30/2009	14:30	SO	3	JMR			x			x				
	093400-LS9-COMP	12/30/2009	15:00	SO	1	JMR		x		x	x		x	x	x	

Sample Handling

Samples Field Filtered
YES NO NA

Sampled Shipped With Ice
YES NO

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Relinquished by: (signature)	Date:	Time:	Received by: (signature)
1. Joseph M. Reyes	12/30/09	16:30	1. GEI FRIDGE
2. GEI FRIDGE	1/4/10	1310	2. Naomi Stegman
3. Naomi Stegman	1/4/10	1310	3. [illegible]
4.			4.

Turnaround Time (Business days):

Normal _X_ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day ____

Before submitting rush turnaround samples, you must notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

Please use MA Landfill List

* Please run TCLP analysis for RCRA 8 Metals results that exceed the 20 times rule.

** Please use % solids sample for VOC and VPH analysis of 093400-LS6-COMP (FILL), 093400-LS6-COMP (NATIVE), 093400-LS8-COMP, and 093400-LS9-COMP

Chain-of-Custody Record

Laboratory:

Laboratory Job # (Lab use only)

GEI Consultants

455 Winding Brook Drive, Suite 201
Glastonbury, CT 06033
PH: 860.368.5300
FX: 860.368.5307

Project Information

Project Name/Number:

Project Location:

Project Contact:

Phone Number:

Page __ of __

Send Report to:

Send EDD to: datagroup@geiconsultants.com

Preservative

Analysis

Sample Handling

Samples Field Filtered

YES NO NA

Samples Shipped With Ice

YES NO

Deliverables:

If Yes, Have You Met Minimum Field QC Requirements? YES NO NA

Lab Sample Number	GEI Sample ID	Collection		Matrix	No. of Bottles	Sampler(s) Initials	Sample Specific Remarks
		Date	Time				

Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1.			1.
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
2.			2.
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
3.			3.
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
4.			4.

Turnaround Time (Business days):

Normal _____ Other _____

10-Day _____ 7-Day _____

5-Day _____ 3-Day _____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PACKING SAMPLES FOR SHIPMENT BACK TO THE LABORATORY

A. Line cooler with bubble wrap and large plastic bag. Use absorbent pad inside the bag if bottles contain preservatives.

B. Wipe outside of bottles and put glass in individual bubble bags & seal. Place bottles & the temperature blank into cooler. Leave room for ice in between bottles & on top.

C. Place double bagged or loose ice randomly around bottles throughout the cooler.

D. Place large bag of ice or loose ice on top of the bottles. In warm weather, the cooler should be packed with as much ice as possible.

E. Close outer bag, compress excess air out of bag, twist top and knot. If necessary, use more bubble wrap to fill the dead air spaces. Place chain of custody (COC) and other paperwork in plastic bag and seal. Place on top of cooler.

F. Close cooler, place signed and dated Custody Seals over opening. Tape over the Custody Seal and seal cooler securely. Fill out overnight shipping waybill and attach to the top or handle of the cooler. Attach Saturday delivery stickers if needed. Ship according to DOT regulations.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PACKING SAMPLES FOR SHIPMENT BACK TO THE LABORATORY

A. Line cooler with bubble wrap and large plastic bag. Use absorbent pad inside the bag if bottles contain preservatives.

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STANDARD OPERATING PROCEDURE

RP-002 Data Review

1. Objective

The overall objective of reviewing analytical data is to provide a quality control (QC) check on the data and the laboratories.

Review forms have been developed for each group of analyses, volatile organic compounds (VOCs), semi-VOCs (SVOCs), pesticides/polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), metals, and inorganics. In addition, a cover sheet, which provides information for each data package has been created. Listed on the bottom of the cover sheet are footnotes developed from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analyses (November 1988) (DV guidelines). These footnotes are used to indicate how the end user should record and use the data in reports and tables.

2. Execution

- Fill out all of the information listed on the cover sheet and select one data review form for each analysis.
- Record the method used for analysis on the appropriate form.
- Determine the holding time for each analysis per matrix. Mark the "criteria met" box with the appropriate response. If the criteria have not been met for any sample, record the sample ID in the "affected samples" box. Refer to the bottom of the cover sheet for the appropriate footnote and mark the box provided.
- Review the surrogate recoveries for the appropriate analyses. Compare the surrogate recoveries to the limits noted in the criteria box. If surrogate recoveries are not met, refer to the attached DV guidelines for direction. If required, record the affected sample and associated qualifier.
- Review the associated method blanks and any field or trip blanks submitted with the samples. If compounds are detected in any of the associated blanks, refer to the attached DV guidelines for direction. If required, record the affected sample and associated qualifier in the box provided.
- Inspect the reporting limits for each sample, determine if the reporting limits have been elevated due to matrix interference, the presence of non-target analytes, or the high concentrations of target analytes. If the reporting limits have been elevated for any samples, note the sample ID and record the appropriate qualifier.
- Review the QC data provided. This may include matrix spikes, laboratory duplicates, and blank spikes. Inspect the percent recovery and relative percent difference (RPD) for matrix and blank spike samples. Compare the

recoveries and RPD values to the limits specified in each method. If the QC samples have not met the specified criteria, refer to the DV guidelines for direction. Assign the qualifiers to the data if required.

- If issues related to the laboratory arise during review of the data, the reviewer must contact the laboratory and resolve the issues. The issues, resolution, and laboratory contact must be noted on the bottom of the cover sheet. The issues may include re-submittal of data sheets or QC data, explanations for sample dilutions or laboratory footnotes, inquires with regard to compounds detected or not detected.

3. References

USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analyses (November 1988), U.S. Environmental Protection Agency.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (November 1986), U.S. Environmental Protection Agency Department of Solid Waste, Washington, D.C.

4. Attachment

Attachment A – Data Review Cover Sheet
Attachment B – Tier 2 Data Quality Review Form

5. Contact

Brian Skelly

Data Review Cover Sheet

Data Reviewed By:	Date:
Project Title:	Project Number:
Laboratory:	Laboratory Job Number:

Chain of Custody - Present and complete (Y/N): _____

All Requested Analyses Performed (Y/N): _____

Case narrative Present (Y/N): _____

Data have been reviewed in consideration of the criteria specified by the Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup in WSC #02-320: Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods.

The following footnotes were used to qualify the project data (Circle footnote letters):

A	The result is estimated due to exceedence of holding time criteria.
B	The reported result is attributed to sampling or laboratory contamination.
C+ / C-	The result has a high bias / low bias due to surrogate recovery above upper / below lower control limits.
F+ / F-	The result has a high bias / low bias due to matrix spike recovery above upper / below lower control limits.
G	The result is estimated due to duplicate precision outside control limits.
J	The reported result is below the laboratory reporting limit and is estimated.
K+ / K-	The result has a high bias / low bias due to blank spike or laboratory control sample recovery above upper / below lower control limits.
P	The result is estimated due to the presence of another Aroclor pattern (use for PCBs only).
R	The result is **Rejected**.

There were no qualifications (Circle if applicable).

Additional Comments:

GEI Consultants

Tier 2 Data Quality Review Form
Semivolatile Organics

Sample Prep Method: _____
Analysis Method: _____

Category	Criteria		Criteria Met? Y	N	Problem(s) Encountered		Affected Samples	Data Qualifier
Holding Time & Preservation (from date sampled)	Solid - 14 d, 4 deg. C Aq - 7 d, 4 deg C							
Surrogates	Surrogate	Rec. Limits						
		solids/waters						
Base/Neutral	NB-d5	30-130/30-130						
	2-FB	30-130/30-130						
	p-T-d14	30-130/30-130						
		solids/waters						
Acid	2-FPh	30-130/15-110						
	Ph-d5	30-130/15-110						
	2,4,6-TBP	30-130/15-110						
Method Blank	All non-detect				Analyte Detected	Blank Action Lvl		
Field Duplicates Lab Duplicates	20% RPD - waters 30% RPD - solids							
Reporting Limits	Reporting Limits							
Lab Control Sample (LCS) / Blank Spike	Control Limits - 40-140 for Base/Neutral 30-130 for Acid Compounds							
Matrix Spike Recovery	Control Limits - 40-140 for Base/Neutral 30-130 for Acid Compounds							
Matrix Spike RPD	20% RPD - waters 30% RPD - solids							

DEP required limits are noted above. Laboratory-determined recovery/control limits may be more stringent.

Additional Comments:

GEI Consultants

Tier 2 Data Quality Review Form
Extractable Petroleum Hydrocarbons
Method: MADEP EPH-98-1

Category	Criteria		Criteria Met? Y	N	Problem(s) Encountered		Affected Samples	Data Qualifier
Holding Time & Preservation (from date sampled)	Solid - 7 d, 4 deg. C Aq - 14 d, HCl							
PAH Quantitation Method	GC or GC/MS (circle one)							
Extraction Surrogate Recovery	Surrogate	Rec. Limits						
	OTP	40-140						
	COD	40-140						
Fractionation Surrogate Recovery	Surrogate	Rec. Limits						
	2-FB	40-140						
	2-BN	40-140						
Method Blank	All non-detect				Analyte Detected	Blank Action Lvl		
Field Duplicates Lab Duplicates	50% RPD - waters and solids							
Reporting Limits	Reporting Limits							
Lab Control Sample (LCS)/ Blank Spike	Control Limits 40-140							
Matrix Spike Recovery	Control Limits 40-140							
Matrix Spike RPD	50% RPD - waters and solids							

DEP required limits are noted above. Laboratory-determined recovery/control limits may be more stringent.

Additional Comments:

GEI Consultants

Tier 2 Data Quality Review Form
Inorganics/Wet Chemistry

Category	Criteria	Criteria Met?		Problem(s) Encountered	Affected Samples	Data Qualifier
		Y	N			
Parameter	Method					
Preservation & Holding Time (from date sampled)						
Method Blank	All non-detect					
Field Duplicates Lab Duplicates	50% RPD - Solid 30% RPD - Aqueous					
Reporting Limits	Reporting Limits					
Lab Control Sample (LCS)/ Blank Spike	Control Limits					
Matrix Spike Recovery	Control Limits					
Matrix Spike RPD						

Additional Comments: _____

GEI Consultants

Tier 2 Data Quality Review Form
Metals

Category	Criteria		Criteria Met? Y	N	Problem(s) Encountered		Affected Samples	Data Qualifier
Target Metals	Method							
Preservation & Holding Time (from date sampled)	Solid - 180 d, 4 deg C Aq - 180 d, HNO3 Hg (solid) - 28 d, 4 deg C Hg (aq) - 28 d, HNO3							
Method Blank	All non-detect				Analyte Detected	Blank Action Lvl		
Field Duplicates Lab Duplicates	20% RPD - waters 35% RPD - solids							
Reporting Limits	Reporting Limits							
Lab Control Sample (LCS) / Blank Spike	Control Limits	80-120						
Matrix Spike Recovery	Control Limits	75-125						
Matrix Spike RPD	20% RPD - waters 35% RPD - solids							
Serial Dilution								

DEP required limits are noted above. Laboratory-determined recovery/control limits may be more stringent.

Additional Comments:

Appendix H

HASP - Health and Safety Plan

GEI Safety
EVERYONE LIVE SAFE EVERYDAY

GEI Consultants

Consulting
Engineers and
Scientists

Health and Safety Plan

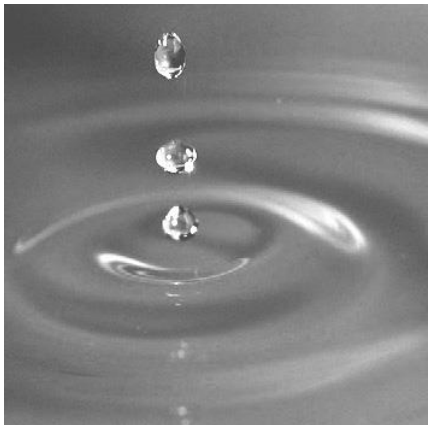
Project Name
Project Address Line 1
City, State

Client Name
Client Address
City, State Abbreviation Zip

Prepared by:
GEI Consultants, Inc.
GEI Address
City, State Abbreviation Zip
GEI Main Phone

Date

Project No. XXXXXX-X



_____
Name
Project Manager

_____
Name
Safety Director or Regional Safety Manager

Table of Contents

C. Safety Data Sheets
D. Forms
E. GEI Health and Safety SOPs and Programs
F. Fall Protection Plan

1. Emergency Contact Information

Table 1. Emergency Contact Information

Site Information	
Project Name:	Project Name
Project Address:	XX Street, City, State, Zip
Project Number:	XXXXXXX.XXX
Important Phone Numbers	
Emergency (Police/Fire/Medical):	911
Local Police:	(XXX) XXX-XXXX
Fire Department:	(XXX) XXX-XXXX
Other Emergency Contact:	(XXX) XXX-XXXX
Hospital and Occupational Clinic Information *(See Attached Map and Directions in Appendix A)*	
Local Hospital: Hospital Street Address City, State Zip **Urgent Care/Occupational Health Clinic: Contact Medcor Triage**	(XXX) XXX-XXXX Call Medcor Triage 1-800-775-5866
Contacts	
Project Manager: Insert Name	(XXX) XXX-XXXX office (XXX) XXX-XXXX cell
Safety Director: Steve Hawkins	(860) 368-5348 office (860) 916-4167 cell
Regional Safety Manager: Insert Name	(XXX) XXX-XXXX office (XXX) XXX-XXXX cell
Site Safety Manager: Insert Name	(XXX) XXX-XXXX office (XXX) XXX-XXXX cell
Medcor Triage	1-800-775-5866
Client Contact: Insert Name	(XXX) XXX-XXXX office (XXX) XXX-XXXX cell
Other Information	
Contractor Requesting/Performing Utility Clearance: Contractor Name	Utility Clearance Ticket Number: XXXXXXXXXXX

2. GEI Safety Practices to Live By

Safety is what we do and how we do it every day. These Everyday Practices to Live Safe are simple yet concise reminders to our employees, clients, contractors, visitors of the steps that must be taken to avoid injury, illness, and incident so everyone can live safe every day. To maintain a safe work environment, GEI has established an organizational structure and a Corporate Health and Safety Program along with these safety practices.

1. Stop work if it is unsafe to continue, after any incident, injury, or near miss.

2. Prepare before starting work. Complete safety training and project-related safety requirements, such as preparation and review Health and Safety Plans (HASPs) as required by project or job-related duties.

3. Assess and control safety hazards/risks before starting any tasks and when previously unidentified safety hazards are observed.

4. Be attentive and aware of your environment. Constant focus and awareness will avoid complacency.

5. Properly use and maintain GEI-approved and required PPE in all appropriate circumstances.

6. Do not work or drive impaired, including under the influence of alcohol/drugs or while fatigued.

7. Follow all safety practices when operating a vehicle. Always wear your seatbelt while in any vehicle. Do not drive distracted, including using hand-held cell phones, when operating any vehicle.

8. Use tools, equipment, and safety devices in accordance with manufacturers recommendations and GEI expectations. Never modify or override safety devices.

9. When activities involve chemicals or hazardous substances, follow GEI's hazard communication requirements, including labeling, reviewing Safety Data Sheets (SDS), and keeping proper protections in place.

10. Be aware of and keep clear of equipment moving in all work areas, at all times.

11. Follow GEI's incident reporting procedure in the event of safety incidents, including injuries, illness, near misses, or observation of unsafe behaviors.

3. Site Background

This Health and Safety Plan (HASP) establishes policies and procedures to protect GEI Consultants, Inc. (GEI) personnel from the potential hazards posed by the activities at the Client Name Site Location property (site) in City, State (Figure 1). Reading, understanding, and compliance with the contents of the HASP is required for on-site GEI personnel and will be reviewed by GEI subcontractors. Subcontractors will prepare their own site-specific HASP but may use this HASP as a guide. This HASP identifies measures to minimize accidents and injuries which may result from site conditions or activities. A copy of this HASP will be maintained on site for the duration of the work.

3.1 Site Description

Insert a description of the project site. Include basic information regarding the current site conditions, historical use, and surrounding property descriptions as applicable. What is useful in a HASP is a physical description of the site such as: is it in an urban or rural setting, or are you in a remote location with no cell service? Also include other physical dangers that may pose a hazard to you when working there like active rail lines, commercial/ facilities, steep cliffs, working along an active roadway, etc. Please include a general description of the contaminants of concern.

3.2 Scope of Field Work

Insert a description of the scope-of-work performed by GEI personnel. Also include a description of the activities performed by other contractors where their activities could impact GEI staff. Only include work performed at the project site by GEI employees.

Table 2. GEI Employee Site Tasks and Descriptions

To complete Table 2:

1. Break down the scope of field work into individual tasks to be performed by GEI personnel and add the task titles to Table 2.
2. Click on the link to view JHA Templates: Job Hazard Analysis Templates Determine which ones apply to the tasks you listed in Table 2, then add and update them to Appendix B.
3. If a JHA doesn't match your specific task in Table 2, you can edit one that has similar steps/hazards or create one from the blank template.

Task Number	Task Titles	Task Descriptions
1.		

Task Number	Task Titles	Task Descriptions
2.		
3.		
4.		

Notes:
Task Titles correlate to a prepared site-specific JHAs.
Task Descriptions are a brief summary of the task being performed by GEI.

4. Potential Hazards

The potential hazards associated with site conditions and activity hazards related to GEI on-site activities have been identified in this section. Detailed information for these hazards and their control methods are discussed further in the Table 3 and the job hazard analysis (JHAs) included in Appendix B.

4.1 General Site Hazards

General hazards and control measures that are applicable to all site activities have been identified in Table 3.

Table 3. General Site Hazards

General Hazards These Hazards Apply to All Site Activities	Control Measure
	•
	•

4.1.1 Hazard Controls

On-site safety equipment to control the hazards listed above will include:

Site-Specific Safety Equipment *(check all that apply)*		
☐ Drinking water/electrolyte fluids	☐ Hand cleaner/sanitizer	☐ Tick removal kit
☐ Eye wash bottles	☐ Insect repellent	☐ Other:
☐ Fire extinguisher	☐ Phone charger	☐ Other:
☐ First aid kit	☐ Poison ivy/oak cleanser	☐ Other:
☐ Flashlight/head lamp	☐ Sunscreen	

Personal protective equipment (PPE) is discussed in further detail in Section 5.

4.1.2 Personal Safety

Field activities have the potential to take employees into areas which may pose a risk to personal safety. The following websites have been researched to identify potential crime activity in the area of the project:

- https://communitycrimemap.com/
- www.cityrating.com/crimestatistics.asp

- www.crimemapping.com

Summary of website information here.

Employees must not knowingly enter into a situation where there is the potential for physical and violent behaviors to occur. If employees encounter hostile individuals or a confrontation develops in the work area, suspend work activities, immediately leave the area of concern, and contact local 911 for assistance. Notify the Site Safety Manager (SSM) and Safety Team (Safety Director and Regional Safety Managers – Safety_Team@geiconsultants.com)of any incidents once you are out of potential danger.

In the event of an emergency, prompt communications with local emergency responders are essential. At least one charged and functioning cell phone to enable emergency communications will be on site. Confirmation of cellular phone operation will be confirmed at the start of each working day.

4.1.3 Vehicle Safety

Mobilization to and from the field will likely require the use of a personal, GEI fleet, or rental vehicle. When operating a vehicle while conducting business on behalf of GEI, employees must follow safe driving practices as outlined in the GEI Safe Driving SOP.

In conjunction with the hazard controls listed in the Site Mobilization JHA, GEI employees should follow these guidelines to operate a vehicle safely:

- Do not drive distracted, including using hand-held cell phones, when operating any vehicle.
- Complete a 360° inspection of the vehicle and surrounding area to identify vehicle safety issues and hazards that could be within the travel path.
- Confirm cell phones, tablets, or other potentially distracting equipment are safely secured and put away prior to operating the vehicle.
- Park in designated areas or a safe area away from heavy equipment.
- When parking a vehicle at a job site, the employee should make an effort to position the vehicle in a manner which reduces or eliminates the need to operate the vehicle in reverse.
- Use a spotter whenever possible.

GEI personnel will follow the GEI Incident Reporting (and client specific reporting) procedures if a vehicle accident occurs involving another vehicle, results in injury, or the damage to property.

4.1.4 Communicable Diseases

Communicable diseases are illnesses caused by viruses or bacteria that people spread to one another through contact with contaminated surfaces, bodily fluids, blood products, insect bites, or through the air. Examples of communicable diseases include influenza, coronavirus 2019, hepatitis B, salmonella, measles, and blood-borne illnesses. Most common forms of spread include food, insect bites, droplets, or skin contact. Infections may range in severity from asymptomatic (without symptoms) to severe and fatal. Transmission of these biologic agents can occur in a variety of ways including airborne (inhalation), direct physical contact with an infectious person, consuming contaminated foods or beverages, contact with contaminated body fluids, contact with contaminated inanimate objects, or being bitten by an infected insect or tick. Below are ways to prevent the infection or spread of communicable diseases:

1. Distancing - Maintain distance from others when possible. Minimize the number of employees in one location to the extent possible.
2. Wash Hands Often - Frequent hand washing with soap and warm water for 20 seconds. If soap and water are not readily available, use hand sanitizer (containing 60% alcohol) until soap and water can be used.
3. Clean and Disinfect Commonly Used Surfaces - Wipe down surfaces with disinfectant on a routine basis. This includes field equipment and other items that may have previously been used by others. This is especially important while working in construction trailers. When using company and personal vehicles, wipe surfaces including the steering wheel, gear shifter, controls, and door handles before and after use.
4. Use Good Hygiene Practices – These include washing hands frequently, avoid touching your eyes, nose, and mouth, and cover coughs and sneezes.
5. Get Vaccinated - Vaccines can prevent many infectious diseases. There are also vaccines that are recommended or required for travel to certain parts of the world.
6. Avoid Touching Wild Animals - Be cautious around wild animals as they can spread infectious diseases.
7. Stay home when you are sick.

4.2 Job Hazard Analysis

The site-specific tasks, potential hazards, and control measures established to reduce the risk of injury or illness are identified in step-by-step JHAs included in Appendix B. Prior to the start of work, project team members will determine what tasks are covered in the scope of work (Table 2) and then develop a JHA for each of these tasks and have them reviewed by the Project Manager (PM) or their designee and approved by a member of the Safety Team.

Indicated in each JHA are the specific PPE, training, equipment, health and safety SOPs and programs that apply to each task. Additional information on hazard controls can be found in GEI's SOPs and programs that apply to this project which are indicated in Appendix E.

4.3 Heat and Cold Stress

4.3.1 Heat Stress

Employees may be exposed to the hazards associated with heat stress when ambient temperatures exceed 80ºF. To prevent heat-related illness, Project Managers (PMs) should plan for proper hydration (drinking plenty of water), acclimatization (getting used to weather conditions), and schedules that alternate work with rest. Employees should also be trained to recognize the symptoms of heat related illnesses and know how to administer first aid for heat-related illnesses and activate emergency medical services quickly when needed. Water and shade will be available to all project employees and located as close as practicable to the work areas when temperatures exceed 80°F.

CDC Heat Planning Tool
For the most recent details and tools for heat stress, use your smart phone to access the Centers for Disease Control for the latest information. Additional details can be found in GEI's Heat Stress Program located on the Safety Resources page of GEI Connections.

Prior to each workday, the forecasted temperature and humidity for the worksite will be reviewed and will be compared against the National Weather Service Heat Index to evaluate the risk level for heat illness. When the temperature equals or exceeds 95°F, or during a heat wave, high heat procedures will be used which include additional preventive measures including pre-shift meetings to encourage employees to drink plenty of water, working in the buddy system or regular communication so observations can be made for heat related illness, and to remind employees of their right to take a cool-down rest when necessary.

4.3.2 Cold Stress

Employees may be exposed to the hazards associated with cold stress when working in cold, wet, and/or windy conditions. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia, as well as slippery surfaces, brittle equipment, and poor judgment.

CDC Cold Stress Info
For the most recent details and tools for cold stress, use your smart phone to access the Centers for Disease Control for the latest information. Additional details can be found in GEI's Cold Stress Program located on the Safety Resources page of GEI Connections.

4.4 Confined Spaces

Work in confined spaces will be performed in accordance with 29 CFR 1910.146 and the GEI Permit Required Confined Space Entry program. Confined space work will not be performed without first notifying and receiving approval from a member of the Safety Team.

The PM will work with the Safety Director to address confined space hazards as applicable prior to the start of the project. The PM will contact local emergency responders to plan for potential rescue. This correspondence will be documented on the Confined Space Permit and communicated to the project team. A confined space entry number will be obtained from the Safety Director or the RSM before entering space.

A JHA will be developed that includes the site-specific tasks and hazard controls in will be reviewed by the PM and included in Appendix B. A link to GEI's Confined Space program is available in Appendix E which directs you to the Safety Resources page of GEI Connections.

4.5 Fall Protection

A Fall Protection Plan will be developed when GEI employees have the potential to conduct the following activities:

- Working near the edge of any excavation that is 6 feet or deeper
- Working on elevated areas with the potential to fall to a lower level
  - Greater than 4 feet in general industry (i.e., buildings, facilities, etc.) when not performing construction activities.
  - Greater than 6 feet when construction activities are being performed.

A Fall Protection Plan is included in Appendix F with project-specific details.

4.6 Constituents of Concern

The characteristics of constituents of concern (COC) at the site are discussed below for safety information purposes. A COC is any substance classified or defined as hazardous, extremely hazardous, toxic, or dangerous. The COC included in this health and safety plan will be the primary constituents that have been detected, are anticipated to be detected, or are being evaluated for the presence of, on the project site. These COC will be used to determine the action levels and PPE necessary for site personnel. Adherence to the safety and health guidelines in this HASP should reduce the potential for exposure to the COC discussed below.

4.6.1 Site-Specific COC

Insert the COC narratives in this subsection. If your scope of work is for an initial investigation, include the narratives of the constituents for which you are sampling. Use this link to select COC narratives, and insert here: Chemical Hazards Section Narratives

Table 4. Primary Constituents of Concern Data

Constituent	Exposure Limit(s)	Route of Exposure	Primary Hazard/ Symptoms of Exposure
(Link to COC Data Table) If a COC for your site is not included in this table, use The CDC NIOSH Guide			

Notes:
A.L. - Action Level
C - ceiling limit, not to be exceeded
Ca – carcinogen
f/cc - fibers per cubic centimeter
mg/m^3 - micrograms per cubic meter
mppcf - millions of particulates per cubic foot of air
ppm - parts per million
STEL - Short-term exposure limit (15 minutes)
TWA - Time-weighted average (8 hours)

4.6.2 Chemicals Brought on Site

Potential hazards associated with chemicals brought on site (e.g., decontamination chemicals, sample preservatives, fuels, calibration fluids) for the work will be mitigated through training, administrative controls (e.g., proper labeling and storage), and proper use of PPE. Safety data sheets (SDSs) for all chemicals brought on site shall be maintained by the SSM and are included in Appendix C.

5. Personal Protective Equipment

The PPE required to be worn on the project site is listed in the table below. Additional PPE required for the tasks to be performed is listed on the JHAs in Appendix B.

Site Required PPE *(check all that apply)*		
☐ Hard Hat	☐ Respirator	☐ Tyvek clothing/boots
☐ Safety Glasses	☐ Flame Resistant Clothing	☐ Hearing Protection
☐ Safety Boots	☐ Personal Flotation Device	☐ Long Sleeve Shirt
☐ Gloves (task specific)	☐ Snake Chaps	☐ Other:
☐ High Visibility Safety Vest	☐ EH-Rated Boots	☐ Other:

If site conditions suggest the existence of a situation more hazardous than anticipated, the site personnel will evacuate the area to a safe distance. The hazard, the level of precautions, and the PPE will then be reevaluated with the assistance and approval of the Safety Director and the PM. If conditions indicating the need for Level A or Level B PPE are encountered, personnel will leave the site and notify the PM or a member of the Safety Team. GEI's PPE Program can be found on the Safety Resources page of GEI Connections.

5.1 Respiratory PPE

GEI personnel who have the potential to don a respirator must have a valid fit test certification and medical clearance. Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.134). Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency (less than 20.7%).
- Imminent Danger to Life and Health (IDLH) concentrations.
- If contaminant levels exceed designated use concentrations.

Upgrades to respiratory protection may be required based on the designated Action Levels found in Section 9.

6. Responsibilities and Lines of Authority

6.1 GEI Personnel Responsibilities

The implementation of health and safety at this project location will be the shared responsibility of the Safety Director, Regional Safety Director, PM, the Site Safety Manager (SSM), and each GEI personnel implementing the proposed scope of work.

6.1.1 GEI Safety Director

The Safety Director is responsible for the overall management of GEI's safety programs, policies, and procedures. Modifications to this HASP which may result in the reduction in the identification, evaluation, and control of safety and health hazards cannot be undertaken by the project team without the approval of the Safety Director.

6.1.2 GEI Project Manager

The PM is responsible for confirming that the requirements of this HASP are implemented. The PM's specific responsibilities include:

- Conducting and documenting the Project Safety Briefing.
- Verifying that the GEI staff and subcontractors selected to work on this program are sufficiently trained for site activities and have reviewed this HASP.
- Maintaining regular communications with the SSM and, if necessary, the Safety Director.

6.1.3 GEI Regional Safety Manager

The RSM is responsible for supporting the safety needs and requirements specified in this HASP. The RSM's specific responsibilities include:

- Reviewing and approving the HASP and applicable JHAs.
- Working with the PM and SSM to meet client safety requirements.
- Providing approval for fall protection plans and confined space entries (permit numbers), as applicable.
- Providing safety support regarding safety programs and procedures as applicable to the project.

6.1.4 GEI Site Safety Manager

The SSM is responsible for implementing and enforcing the safety requirements specified in this HASP and will be on-site during activities covered in the HASP. The SSM's specific responsibilities include:

- Enforcing the requirements of this HASP and notify the PM of noncompliance.
- Conduct daily Safety Tailgate meetings for site-related work.
- Maintaining a high level of health and safety consciousness among employees implementing the proposed activities.
- Procuring the air monitoring instrumentation, PPE, and safety equipment needed for GEI project employees and verifying that each is in good working order.
- Verifying that GEI subcontractors are utilizing the correct PPE and safety equipment.

6.1.5 All GEI Field Personnel

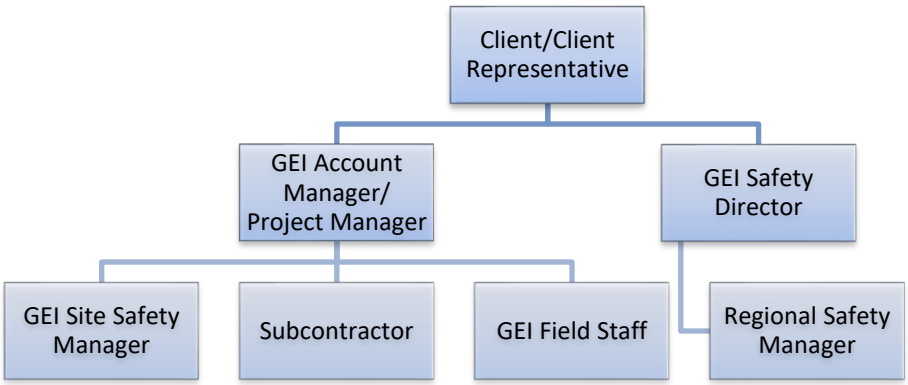
All GEI field personnel (including the PM and SSM) covered by this HASP are responsible for following the health and safety procedures in this HASP and for performing their work in a safe and responsible manner. The specific responsibilities that apply to all field personnel include:

- Reading and signing the HASP prior to the start of on-site work.
- Bringing forth any questions or concerns regarding the content of the HASP to the PM or the SSM.
- Attending and actively participating in the required Project Safety Briefing prior to beginning on-site work and any subsequent safety meetings.
- Complying with the requirements of this HASP and the requests of the SSM.
- Stopping work in the event that an immediate danger situation is perceived.
- Reporting accidents, injuries, and illnesses, regardless of their severity by following GEI's incident reporting procedures.

6.2 Lines of Authority

GEI will have responsibility for safety of its employees during the work performed at the site. GEI's SSM will have a cell phone available to contact the appropriate local authorities, in the event of an emergency. GEI's SSM will be available for communication with the GEI PM and with the Client's representative.

Project Lines of Authority



6.2.1 Stop Work Authority

GEI employees have the authority to stop work activities if an unanticipated hazard is encountered or a potential unsafe condition is observed. The GEI employee should contact the Safety Director and the Project Manager to discuss the stop work conditions and potential control methods that can be implemented.

6.3 Subcontractors

GEI has subcontracted the following firms to assist in performing work on this project:

Subcontractor Information	
Company Name/Address:	
Contact Name:	Cell: (XXX) XXX-XXXX
Scope of Work:	

You can confirm if your subcontractor is approved by checking our pre-approved list: Approved Subcontractor List. If they are not listed, provide them the Safety Pre-Qualification Process Letter to submit their safety information for our review.

GEI requires its subcontractors to work in a responsible and safe manner. Subcontractors hired by GEI are required to submit documentation of their safety practices as part of GEI's Subcontractor Safety Prequalification for evaluation and approval before the start of work. Subcontractors for this project will be required to develop their own HASP for protection of their employees, but, at a minimum, must adhere to applicable requirements set forth in this HASP. The PM will obtain applicable safety certifications and training records from the subcontractor's site supervisor prior to the initiation of work.

7. Training Requirements

Prior to commencement of field activities, the PM or their designee will verify GEI field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. This training will be documented on the applicable JHAs (Appendix B). Personnel that have not received project-specific training will not be allowed on site.

Applicable Site-Specific Training Requirements *(check all that apply)*		
✔ HAZWOPER (8Hr Refresher)	☐ Railroad Specific Training	☐ Other:
☐ HAZWOPER (Site Supervisor)	☐ Transportation Worker Identification Credential (TWIC)	☐ Other:
✔ First Aid/CPR	☐ MSHA (Mine Safety and Health Administration)	☐ Other:

7.1 On-Site Safety Briefings

GEI personnel will be given health and safety briefings daily (or as frequently as needed) by the SSM or their designee to plan for conducting work activities safely. The briefing will include GEI subcontractors and others as appropriate. The briefings can include information on:

- Applicable JHAs
- Changes in work practices
- Changes in environmental conditions
- Anticipated weather
- Evacuation/emergency procedures
- Air monitoring results
- Safety inspection results

Documentation of these briefings will be recorded in the GEI field book or the Tailgate Safety Briefing Form (Appendix D). For long-term projects, the Tailgate Safety Briefing Form is preferred.

8. Medical Surveillance Program

GEI maintains a medical surveillance program under the supervision of the Safety Director that includes a plan designed specifically for field personnel engaged in work at sites where hazardous materials may be present. Field personnel undergo an initial physical examination, including a detailed medical and occupational history before they are able to engage in work at hazardous waste sites. Upon successful completion of the examination, personnel are provided a medical clearance from an occupational health physician stating their fitness to perform the specified work activities. Employees who are part of this program will schedule and attend annual exams 12 months from the date of their previous exam.

If a GEI employee or other project worker shows symptoms of exposure to a hazardous substance and wishes to be seen by a doctor, GEI will consult with their third-party medical administrator and provide access to the nearest area hospital or medical facility.

GEI subcontractor personnel that will enter any hazardous waste sites must certify that they are participating in a medical surveillance program that complies with OSHA regulations for hazardous waste operations (i.e., 29 CFR 1910.120 and 29 CFR 1926.65). A copy of their medical clearance will be submitted to the GEI PM or SSM prior to the start of field activities.

9. Personal/Work Zone Air Monitoring

Personal/Work Zone Air Monitoring Required?	
☒ Yes	☐ No*

*Add a statement here describing why personal/work zone air monitoring is not necessary for this site. Then delete the reminder of this section.

Air monitoring, in the form of personal or work zone monitoring, will be performed to identify and quantify airborne levels of hazardous substances and atmospheric hazards to determine the appropriate level of worker protection needed on-site.

Work on this project requiring air monitoring includes:

Personal/Work Zone Air Monitoring Tasks *(check all that apply)*		
☐ Excavation	☐ Confined Space Entry	☐ Other:
☐ Soil Sampling	☐ Indoor Drilling	☐ Other:
☐ GW Monitoring Well Headspace	☐ Product Sampling	☐ Other:

The following air monitoring equipment will be on site:

Personal/Work Zone Air Monitoring Equipment *(check all that apply)*	
☐ PID with 10.6 eV lamp or equivalent	☐ Particulate Meter (PM-10 capable)
☐ Drager Chip Measurement System (CMS) with appropriate gas detection chips	☐ Multi-gas meter: lower explosive limit (LEL) / oxygen (O_2) / hydrogen sulfide (H_2S) / hydrogen cyanide (HCN) or carbon monoxide (CO) meter
☐ Sensidyne Gas Detection Pump with appropriate gas detector tubes (or equivalent colorimetric tube)	☐ Other:

GEI will conduct and document on-site work zone monitoring and will inform GEI employees of the results. ***If Action Levels are exceeded, immediately implement site action(s) according to Action Table below and notify the PM***.

9.1 Calibration

Air monitoring equipment will be calibrated and maintained in accordance with manufacturer's requirements. Calibrations will be recorded in the project notes daily or on a daily calibration form.

9.2 Action Levels

The tables below provide a summary of real time air monitoring Action Levels and contingency plans for work zone activities. The below Action Levels are determined by halving the Permissible Exposure Limits (PELs) or Threshold Limit Values (TLVs) as set forth by OSHA and the American Conference of Government Industrial Hygienists (ACGIH).

9.2.1 VOC Monitoring and Control

Review this section, and delete if not applicable.

Air monitoring reduces the risk of overexposure by indicating when action levels have been exceeded and when PPE must be upgraded or changed. Based on the volatile organic compounds (VOCs) listed in Table 4, determine which constituent has the lowest permissible exposure limit (PEL). This data is used to determine the action levels needed including respiratory protection at the project site. GEI's action level is half of the PEL listed in Table 4 (exception is made for benzene).

Exposure to organic COC can be evaluated and/or controlled by:

- Monitoring worker breathing zone atmospheric concentrations for organic COC in the breathing zone with a photoionization detector (PID).
- When possible, engineering control measures will be utilized to suppress the volatile organic vapors. Engineering methods can include utilizing a fan to promote air circulation, utilizing volatile suppressant foam, providing artificial ground cover, or covering up the impacted material with a tarp to mitigate volatile odors.
- When volatile suppression engineering controls are not effective and organic vapor meters indicate concentrations above the action levels, then appropriate respiratory protection (i.e., air purifying respirator with organic vapor cartridge) will be employed.

Air Monitoring Instrument	Action Level (above background)	Site Action
Action Levels for the following parameters are 15-minute time weighted averages (TWA), not a single exceedance.		
PID (Monitoring for VOCs)	0.0 – 50 ppm	No respiratory protection is required if VOCs are not present. (If benzene or naphthalene are constituents of interest at this site, follow the action levels below for benzene and/or naphthalene.)
	> 50 ppm	Stop work, withdrawal from work area, institute engineering controls, if levels persist, upgrade to Level C. Notify PM and Safety Team.

Air Monitoring Instrument	Action Level (above background)	Site Action
PID (Monitoring for benzene) Delete if not a COC at the site	0.0 - 1.0 ppm	No respiratory protection is required if benzene is not present. Use detector tube for benzene to verify if concentration of 1.0 ppm or greater is benzene.
	1.0 – 50 ppm	If benzene is present (confirmation via detector tube), stop work and contact your PM. If work continues and benzene is present, or no detector tubes are used to determine presence, upgrade to Level C. No respiratory protection is required if benzene is not present.
	> 50 ppm	Stop work, withdraw from work area, notify PM and Safety Team.
PID (Monitoring for naphthalene) Delete if not a COC at the site	0.0 - 5 ppm	No respiratory protection is required if naphthalene is not present. Use Sensodyne detector tube for naphthalene to verify if concentration of 5 ppm or greater is naphthalene.
	5 – 50 ppm	If naphthalene is present (confirmation via detector tube), stop work and contact your PM. If work continues and naphthalene is present or no detector tubes are used to determine presence, upgrade to Level C. No respiratory protection is required if naphthalene is not present.
	> 50 ppm	Stop work, withdraw from work area, notify PM and Safety Team.

9.2.2 Dust Monitoring and Control

Review this section, and delete if not applicable. If cutting or drilling through concrete, silica dust may be generated. Refer to GEI's Crystalline Silica Program for additional information and guidance.

Some COC hazards may become hazardous when they are associated with dust/particles and become airborne. For worker safety, dust levels must be managed to eliminate this hazard. Dust generated during activities can cause irritation to the respiratory system and eyes. Contaminants can also be carried in airborne dust causing potential exposure to workers through skin contact and inhalation. Constituent concentrations on site are expected to be low therefore the exposure hazard through inhalation should be minimal; however, contaminant contact through skin and clothing can introduce additional exposures.

For dust generated during site activities which exceed site-specific limits, engineering controls such as water application will be used to control dust concentrations. However, if excessive dust concentrations cannot to be handled through engineering controls, then respirators will be required to be worn.

Air Monitoring Instrument	Action Level (above background)	Site Action

Action Levels for the following parameters are 15-minute time weighted averages (TWA), not a single exceedance.		
Particulate Meter	150 µg/m^3	Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water. Don respirator with particulate filters if action levels remain in exceedance.

9.2.3 H_2S, CO, and Explosive Atmosphere Monitoring and Control

Review this section, and delete if not applicable. If you will utilizing fuel powered equipment indoors, carbon monoxide will be continuously monitored.

The SSM monitor operational areas for hydrogen sulfide (H_2S) and/or carbon monoxide (CO) prior to the start of work each day. Periodic readings will be taken throughout the day and prior to any confined space entry. Oxygen (O_2) values are based on the maximum use limits of a full-face respirator if a chemical was displacing oxygen. Results will be compared to the published exposure limits/action levels listed below.

Air Monitoring Instrument	Action Level (above background)	Site Action
Action Levels for the following parameters are real time and should not be exceeded at any point.		
O_2 Meter	< 20.7%	Stop work, withdraw from work area, ventilate area, notify PM and Safety Team.
	> 21.1%	Stop work, withdraw from work area, notify PM and Safety Team.
H_2S Meter	< 5.0 ppm	No respiratory protection is required.
	> 5.0 ppm	Stop work, cover excavation, withdraw from work area, institute engineering controls, notify PM and Safety Team.
HCN Meter	< 1.0 ppm	Run colorimetric tube or CMS Drager chip. Continue monitoring with real-time meter and continue work if colorimetric tube or CMS Drager chip reading is less than 2.0 ppm.
	> 1.0 ppm HCN Concentrations < 2.0 ppm	Run colorimetric tube or CMS Drager chip and confirm concentration is less than 2.0 ppm, notify PM and Safety Team. Run colorimetric tube or CMS Drager chip for sulfur dioxide, hydrogen sulfide, and/or phosphine chip potential interferences. Continue to monitor with real-time meter.
	> 2.0 ppm	Stop work and move (with continuous HCN monitoring meter) at lease 25 ppm upwind of the excavation until continuous meter reads less than 1 ppm, notify PM and Safety Team. Run colorimetric tube or CMS Drager hydrogen cyanide chip and re-evaluate activity, continue monitoring with a real-time meter, resume work if concentrations read less than 1.0 ppm.

Air Monitoring Instrument	Action Level (above background)	Site Action
Lower Explosive Limit	< 10% LEL	Investigate potential causes, allow excavation to ventilate, use caution during procedures.
	> 10% LEL	Stop work, allow excavation/borehole to ventilate to < 10% LEL, if ventilation does not result in a decrease to < 10% LEL, withdraw from work area, notify PM and Safety Team.
Carbon Monoxide	> 35 ppm	Stop work, withdraw from work area, ventilate area, notify PM and Safety Team.

10. Site Control

10.1 Site Zones

Site zones are intended to control the potential spread of contamination and to assure that only authorized individuals are permitted into potentially hazardous areas. This project is being conducted under the requirements of 29 CFR 1910.120, and any personnel working in an area where the potential for exposure to site contaminants exists, will only be allowed access after proper training and medical documentation.

10.2 Buddy System

GEI personnel should be in line-of-site or communication contact with another on-site person. The other on-site person should be aware of his or her role as a "buddy" and be able to help in the event of an emergency. Some projects may not support the need for the buddy system to be implemented. If this is the case, the PM is required to conduct regular check-ins with the employee on site.

10.3 Sanitation for Temporary Work Sites

Sanitation requirements identified in the OSHA Standard 29 CFR 1926.51 "Sanitation" specifies that employees working at temporary project sites have at least one sanitary facility available to them. Indicate where the nearest sanitary facilities are located.

10.4 Illumination

Illumination requirements identified by OSHA are directed to work efforts inside buildings and/or during non-daylight hours. Activities planned for the site are anticipated to occur outside during daylight hours. However, if work areas do not meet illumination requirements, they will be equipped with appropriate illumination that meets or exceeds requirements specified in OSHA Standard 29 CFR 1926.56. Employees will not work on sites that are not properly lighted.

10.5 Smoking

Smoking is prohibited at or in the vicinity of hazardous operations or materials. Where smoking is permitted, safe receptacles will be provided for smoking materials.

10.6 Alcohol and Drug Abuse Prevention

Alcohol and drugs will not be allowed on the site. Project personnel under the influence of alcohol or drugs will not be allowed to enter the site. All GEI employees must comply with GEI's Controlled Substance Use & Alcohol Misuse Policy found on the Safety Resources page of GEI Connections. Employees may be subject to random drug and/or alcohol testing if required by a client at a project site.

11. Incident Reporting

GEI will report incidents involving GEI personnel or subcontractor personnel, such as: lost time injuries, injuries requiring medical attention, near miss incidents, fires, fatalities, accidents involving the public, chemical spills, vehicle accidents, and property damage. The following steps must be followed when an incident occurs:

1. For incidents involving life-threatening situations or serious injury that require emergency response personnel (Police, Fire, EMS), call 9-1-1 from a safe area.
2. **Stop work** activity to address any injury, illness, property damage, spill, or other emergency.
3. Call Medcor Triage at 1-800-775-5866 to speak with a medical professional following any injury or illness.
4. Notify your Supervisor/Project Manager of the incident or injury.
5. Complete an incident report using the GEI Incident Report Form located on the GEI Safety Smartphone App, GEI Connections intranet page, or in the project HASP.
6. Resume work activity if all steps above have been completed and it is safe to do so.

For vehicle accidents involving another vehicle or damage to property, the employee will take pictures of each vehicle or property involved in the incident and obtain a police report. In some municipalities police will not be dispatched to a non-injury accident, but every effort needs to be made to try and obtain the report.

The Incident Report Form and the Near Miss Reporting Form can be found in Appendix D, on the GEI Health and Safety smartphone app, or on the Safety Resources page of GEI Connections. To report subcontractor injuries or incidents, follow the same verbal reporting procedures and submit an email describing the event to the PM and the Safety Team.

11.1 Injury Triage Service

If a GEI employee experiences a work-related injury that is not life-threatening, the employee will initiate a call to Medcor Triage at 1-800-775-5866. The injured employee will detail any medical symptoms or complaints which will be evaluated by a Registered Nurse (RN) specially trained to perform telephonic triage. The RN will recommend first aid self-treatment or refer the injured employee for an off-site medical evaluation by a health professional at a clinic within GEI's workers compensation provider network. GEI employees are still required to follow our Accident Reporting procedures as listed above.

Insert language if client has specific accident reporting requirements.

12. Decontamination Procedures

Site decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may come in contact with personnel or equipment. These procedures minimize contact with contaminants and protect against the transfer of contaminants to clean areas. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. This project is being conducted under the requirements of 29 CFR 1910.120(k), and any personnel or equipment that are exposed to site contaminants will follow applicable decontamination procedures.

12.1 Personnel and PPE Decontamination

Review highlighted text and delete if not applicable:

A decontamination station where employees can drop equipment and remove PPE will be set up to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities. It will be equipped with basins for water and detergent, and trash bag(s), or cans for containing disposable PPE and discarded materials. Once personnel have decontaminated at this station and taken off their PPE, they will wash themselves wherever they have potentially been exposed to any contaminants (e.g., hands, face, etc.)

Contaminated PPE (gloves, suits, etc.) will be decontaminated and stored for reuse or placed in plastic bags (or other appropriate containers) and disposed of in an approved facility. Decontamination wastewater and used cleaning fluids will be collected and disposed of in accordance with applicable state and federal regulations.

12.2 Equipment Decontamination

All tools, equipment, and machinery that have come into contact with contaminated media, will be decontaminated on site prior to departure. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities. If your project has equipment decontamination specification refer to where those can be found (work plan, specs, etc.)

13. Emergency Response

13.1 Evacuation

Prior to the start of work, emergency procedures must be identified and communicated to workers on site. This includes evacuation routes, safe areas, and/or muster points (Figure 1). Figure 1 can be a screen shot from Google Maps or a site map already created from a project document with points dropped on the map identifying at a minimum a muster point (delete this text once addressed). Also communicate how employees will be notified that an emergency or evacuation of the site is occurring (audio alarms, visible (light) alarms, radios, sirens, etc.) Upon discovering an emergency situation, personnel will notify the SSM, who will initiate an appropriate response. Once the scene is safe, use the incident report procedures to report the evacuation to the PM and Safety Team.

Provide any client/site requirements for emergencies or delete if not applicable.

13.2 Fire

In the event of a fire personnel will evacuate the area to the muster point located on Figure 1. GEI's SSM will contact the local fire department and report the fire. The SSM will account for GEI personnel and subcontractor personnel and report their status to the PM. Incident reporting procedures will be followed once the scene is safe.

13.3 Spills or Material Release

If a hazardous waste spill or material release occurs, if safe, the SSM or their representative will immediately assess the magnitude and potential seriousness of the spill or release based on the following:

- SDS for the material spilled or released.
- Source of the release or spillage of hazardous material.
- An estimate of the quantity released and the rate at which it is being released.
- The direction in which the spill or air release is moving.
- Personnel who may be or may have been in contact with the material, or air release, and possible injury or sickness as a result.
- Potential for fire and/or explosion resulting from the situation; and
- Estimates of area under influence of release.

If the spill or release is determined to be within the on-site emergency response capabilities, the SSM will verify implementation of the necessary remedial action. If the release is beyond the capabilities of the site personnel, personnel will be evacuated from the immediate area and the fire department will be contacted. The SSM will notify the PM and follow the incident reporting procedures.

13.4 Medical Support

In case of minor injuries, on-site care will be administered with the site first aid kit. A GEI employee certified by the American Red Cross or other American Health & Safety Institute (ASHI) will be on-site at all times. For serious injuries, call 911 and request emergency medical assistance. Seriously injured persons should not be moved unless they are in immediate danger. Notify the PM of the emergency and follow incident reporting procedures.

In the event of an emergency, prompt communications with local emergency responders are essential. At least one charged and functioning cell phone to enable emergency communications will be on site. Confirmation of cellular phone operation will be confirmed at the start of each working day.

Table 1 of this HASP contains detailed emergency information, including directions to the nearest hospital, and a list of emergency services and their telephone numbers. In addition, Appendix A includes a map to the local hospital/emergency room and Figure 1 indicates the evacuation route (including muster point).

13.5 Severe Weather

The contingency plan for severe weather includes reviewing the expected weather to determine if severe weather is in the forecast. Severe weather includes high winds over 40 miles per hour (mph), heavy rains or snow squalls, thunderstorms, tornados, and lightning storms. If severe weather is approaching, the decision to evacuate GEI personnel and subcontractor personnel from the site will be the responsibility of GEI's SSM. Notification of evacuation will be made to the PM. The SSM will account for GEI personnel and subcontractor personnel and report their status to the PM. If safe, work can resume 30 minutes after the last clap of thunder or flash of lightning.

13.6 Hazard Communication Plan

GEI personnel have received hazard communication (HAZCOM) training as part of their annual safety training and new employee safety orientation training. Hazardous materials brought on site will be properly labeled, stored, and handled. SDSs for each chemical will be included in this HASP in Appendix C. GEI's HAZCOM program can be found on the Safety Resources page of GEI Connections (Appendix E).

14. Health and Safety Plan Sign-Off

GEI personnel conducting site activities will be familiar with the information in this HASP. After reviewing this plan, please sign the copy in the project files, and bring a copy of the plan with you to the site. By signing this site-specific HASP, you are agreeing that you have read, understand, and will adhere to the provisions described in this plan while working on the site below.

Site Name: Site Name

GEI Project No: Project Number

Print Name	Signature
Project Manager: PM's Name	

Figure

{Insert Site Map Here or delete this if a separate attachment}

Figure 1. Site Location and Muster Point

Appendix A

Hospital Directions

Hospital Information	
Local Hospital: Hospital Street Address City, State Zip	(XXX) XXX-XXXX

(Include a map to the local hospital if cell phone service is not dependable at or around project site)

Scan this QR code or click the link for access to Google Maps to type in the address of your local hospital.

Appendix B

Job Hazard Analyses

Appendix C

Safety Data Sheets

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 03/10/2016 **Revision** : 03/10/2016

Trade Name: Liquinox

1 Identification of the substance/mixture and of the supplier

1.1 Product identifier

Trade Name: Liquinox
Synonyms:
Product number: Liquinox

1.2 Application of the substance / the mixture : Cleaning material/Detergent

1.3 Details of the supplier of the Safety Data Sheet

Manufacturer	Supplier
Alconox, Inc. 30 Glenn Street White Plains, NY 10603 1-914-948-4040	Not Applicable

Emergency telephone number:
ChemTel Inc
North America: 1-800-255-3924
International: 01-813-248-0585

2 Hazards identification

2.1 Classification of the substance or mixture:

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

Hazard-determining components of labeling:
Alcohol ethoxylate
Sodium alkylbenzene sulfonate
Sodium xylenesulphonate
Lauramine oxide

2.2 Label elements:

Eye irritation, category 2A.
Skin irritation, category 2.

Hazard pictograms:

Signal word: Warning

Hazard statements:
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P501 Dispose of contents and container as instructed in Section 13.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 03/10/2016 **Revision** : 03/10/2016

Trade Name: Liquinox

Additional information: None.

Hazard description

Hazards Not Otherwise Classified (HNOC): None

Information concerning particular hazards for humans and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients

3.1 Chemical characterization : None

3.2 Description : None

3.3 Hazardous components (percentages by weight)

Identification	Chemical Name	Classification	Wt. %
CAS number: 68081-81-2	Sodium Alkylbenzene Sulfonate	Acute Tox. 4; H303 Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	10-25
CAS number: 1300-72-7	Sodium Xylenesulphonate	Eye Irrit. 2; H319	2.5-10
CAS number: 84133-50-6	Alcohol Ethoxylate	Skin Irrit. 2 ; H315 Eye Dam. 1; H318	2.5-10
CAS number: 1643-20-5	Lauramine oxide	Skin Irrit. 2 ; H315 Eye Dam. 1; H318	1-2

3.4 Additional Information: None.

4 First aid measures

4.1 Description of first aid measures

General information: None.

After inhalation:

Maintain an unobstructed airway.

Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.

Seek medical attention if symptoms develop or persist.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.

Remove contact lens(es) if able to do so during rinsing.
Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly.
Seek medical attention if irritation, discomfort, or vomiting persists.

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

For safety reasons unsuitable extinguishing agents : None

5.2 Special hazards arising from the substance or mixture :

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Protective equipment:

Wear protective eye wear, gloves and clothing.
Refer to Section 8.

5.4 Additional information :

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.
Avoid contact with skin, eyes and clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures :

Ensure adequate ventilation.
Ensure air handling systems are operational.

6.2 Environmental precautions :

Should not be released into the environment.
Prevent from reaching drains, sewer or waterway.

6.3 Methods and material for containment and cleaning up :

Wear protective eye wear, gloves and clothing.

6.4 Reference to other sections : None

7 Handling and storage

7.1 Precautions for safe handling :

Avoid breathing mist or vapor.
Do not eat, drink, smoke or use personal products when handling chemical substances.

7.2 Conditions for safe storage, including any incompatibilities :

Store in a cool, well-ventilated area.

7.3 Specific end use(s):

No additional information.

8 Exposure controls/personal protection

8.1 Control parameters :

84133-50-6, Alcohol Ethoxylate, AIHA TWA 10 mg/m3.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

Not needed under normal conditions.

Protection of skin:

Select glove material impermeable and resistant to the substance.

Eye protection:

Safety goggles or glasses, or appropriate eye protection.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

9 Physical and chemical properties

Appearance (physical state, color):	Pale yellow liquid	**Explosion limit lower:** **Explosion limit upper:**	Not determined or not available. Not determined or not available.
Odor:	Not determined or not available.	**Vapor pressure at 20°C:**	Not determined or not available.
Odor threshold:	Not determined or not available.	**Vapor density:**	Not determined or not available.
pH-value:	8.5 as is	**Relative density:**	Not determined or not available.
Melting/Freezing point:	Not determined or not available.	**Solubilities:**	Not determined or not available.
Boiling point/Boiling range:	Not determined or not available.	**Partition coefficient (n-octanol/water):**	Not determined or not available.
Flash point (closed cup):	Not determined or not available.	**Auto/Self-ignition temperature:**	Not determined or not available.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 03/10/2016 **Revision** : 03/10/2016

Trade Name: Liquinox

Evaporation rate:	Not determined or not available.	**Decomposition temperature:**	Not determined or not available.
Flammability (solid, gaseous):	Not determined or not available.	**Viscosity:**	a. Kinematic: Not determined or not available. b. Dynamic: Not determined or not available.
Density at 20°C:	Not determined or not available.		

10 Stability and reactivity

10.1 Reactivity : None

10.2 Chemical stability : None

10.3 Possibility hazardous reactions : None

10.4 Conditions to avoid : None

10.5 Incompatible materials : None

10.6 Hazardous decomposition products : None

11 Toxicological information

11.1 Information on toxicological effects :

Acute Toxicity:

Oral:

: LD50 >5000 mg per kg Rat, Oral) - product .

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Alcohol Ethoxylate: May cause mild to moderate skin irritation.

Sodium Alkylbenzene Sulfonate: Causes skin irritation.

Lauramine oxide: Causes skin irritation.

Serious eye damage/irritation:

Sodium Alkylbenzene Sulfonate: Causes serious eye irritation.

Alcohol Ethoxylate: Causes moderate to severe eye irritation and conjunctivitis.

Sodium xylenesulphonate: Rabbit: irritating to eyes.

Lauramine oxide: Causes serious eye damage.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

IARC (International Agency for Research on Cancer): None of the ingredients are listed.

NTP (National Toxicology Program): None of the ingredients are listed.

Germ cell mutagenicity: No additional information.

Reproductive toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

12 Ecological information

12.1 Toxicity:

Sodium Alkylbenzene Sulfonate: Fish, LC50 1.67 mg/l, 96 hours.
Sodium Alkylbenzene Sulfonate: Aquatic invertebrates, EC50 Daphnia 2.4 mg/l, 48 hours.
Sodium Alkylbenzene Sulfonate: Aquatic Plants, EC50 Algae 29 mg/l, 96 hours.
Lauramine oxide: Fish, LC0 24.3 mg/l, 96h [Killifish (Cyprinodontidae)]
Lauramine oxide: Aquatic invertebrates, (LC50): 3.6 mg/l 96 hours [Daphnia (Daphnia)].
Lauramine oxide: Aquatic plants, EC50 Algae 0.31 mg/l 72 hours [Algae]
Alcohol Ethoxylate: Aquatic invertebrates, (LC50): 4.01 mg/l 48 hours [Daphnia (daphnia)].

12.2 Persistence and degradability: No additional information.

12.3 Bioaccumulative potential: No additional information.

12.4 Mobility in soil: No additional information.

General notes: No additional information.

12.5 Results of PBT and vPvB assessment:

PBT: No additional information.

vPvB: No additional information.

12.6 Other adverse effects: No additional information.

13 Disposal considerations

13.1 Waste treatment methods (consult local, regional and national authorities for proper disposal)

Relevant Information:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities. (US 40CFR262.11).

14 Transport information

14.1 UN Number: ADR, ADN, DOT, IMDG, IATA	None
14.2 UN Proper shipping name: ADR, ADN, DOT, IMDG, IATA	None
14.3 Transport hazard classes: ADR, ADN, DOT, IMDG, IATA	
Class:	None
Label:	None
LTD.QTY:	None
US DOT	
Limited Quantity Exception:	None

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 03/10/2016 **Revision** : 03/10/2016

Trade Name: Liquinox

Bulk:	**Non Bulk:**
RQ (if applicable): None	**RQ (if applicable)**: None
Proper shipping Name: None	**Proper shipping Name**: None
Hazard Class: None	**Hazard Class**: None
Packing Group: None	**Packing Group**: None
Marine Pollutant (if applicable): No	**Marine Pollutant (if applicable)**: No
additional information.	additional information.
Comments: None	**Comments**: None

14.4 Packing group:	None
ADR, ADN, DOT, IMDG, IATA	
14.5 Environmental hazards :	None
14.6 Special precautions for user:	None
Danger code (Kemler):	None
EMS number:	None
Segregation groups:	None

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

14.8 Transport/Additional information:

Transport category:	None
Tunnel restriction code:	None
UN "Model Regulation":	None

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

North American

SARA

Section 313 (specific toxic chemical listings): None of the ingredients are listed.
Section 302 (extremely hazardous substances): None of the ingredients are listed.

CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable

Spill Quantity: None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

Inventory: All ingredients are listed.
Rules and Orders: Not applicable.

Proposition 65 (California):

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 03/10/2016 **Revision** : 03/10/2016

Trade Name: Liquinox

Canadian

Canadian Domestic Substances List (DSL):
All ingredients are listed.

EU

REACH Article 57 (SVHC): None of the ingredients are listed.

Germany MAK: Not classified.

Asia Pacific

Australia

Australian Inventory of Chemical Substances (AICS): All ingredients are listed.

China

Inventory of Existing Chemical Substances in China (IECSC): All ingredients are listed.

Japan

Inventory of Existing and New Chemical Substances (ENCS): All ingredients are listed.

Korea

Existing Chemicals List (ECL): All ingredients are listed.

New Zealand

New Zealand Inventory of Chemicals (NZOIC): All ingredients are listed.

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients are listed.

Taiwan

Taiwan Chemical Substance Inventory (TSCI): All ingredients are listed.

16 Other information

Abbreviations and Acronyms: None

Summary of Phrases

Hazard statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P501 Dispose of contents and container as instructed in Section 13.

Manufacturer Statement:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling,

use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NFPA: 1-0-0

HMIS: 1-0-0

EXAMPLE

MATERIAL SAFETY DATA SHEET

ALCONOX®

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

ALCONOX

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	**ALCONOX®**
CHEMICAL FAMILY NAME:	Detergent.
PRODUCT USE:	Critical-cleaning detergent for laboratory, healthcare and industrial applications
U.N. NUMBER:	Not Applicable
U.N. DANGEROUS GOODS CLASS:	Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME:	Alconox, Inc.
ADDRESS:	30 Glenn St., Suite 309, White Plains, NY 10603. USA
EMERGENCY PHONE:	**TOLL-FREE in USA/Canada** 800-255-3924
	International calls 813-248-0585
BUSINESS PHONE:	914-948-4040
DATE OF PREPARATION:	May 2011
DATE OF LAST REVISION:	February 2008

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a white granular powder with little or no odor. Exposure can be irritating to eyes, respiratory system and skin. It is a non-flammable solid. The Environmental effects of this product have not been investigated.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS

EUROPEAN and (GHS) Hazard Symbols

Signal Word: **Warning!**

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1
EC# 205-633-8 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 268-356-1 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 231-838-7 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 231-767-1 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 207-638-8 Index# 011-005-00-2
EC# 205-788-1 This substance is not classified in the Annex I of Directive 67/548/EEC

GHS Hazard Classification(s):

Eye Irritant Category 2A

Hazard Statement(s):

H319: Causes serious eye irritation

Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P271: Use only in well ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection/

Hazard Symbol(s):

[Xi] Irritant

Risk Phrases:
R20: Harmful by inhalation
R36/37/38: Irritating to eyes, respiratory system and skin

Safety Phrases:
S8: Keep container dry
S22: Do not breath dust
S24/25: Avoid contact with skin and eyes

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE: Exposure to this product may cause irritation of the eyes, respiratory system and skin. Ingestion may cause gastrointestinal irritation including pain, vomiting or diarrhea.

CHRONIC: This product contains an ingredient which may be corrosive.

TARGET ORGANS: ACUTE: Eye, respiratory System, Skin CHRONIC: None Known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Sodium Bicarbonate	144-55-8	205-633-8	1044	33 - 43%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium (C10 – C16) Alkylbenzene Sulfonate	68081-81-2	268-356-1	Not Listed	10 – 20%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium Tripolyphosphate	7758-29-4	231-838-7	1469	5 - 15%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Tetrasodium Pyrophosphate	7722-88-5	231-767-1	1140	5 - 15%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium Carbonate	497-19-8	207-638-8	1135	1 - 10%	HAZARD CLASSIFICATION: [Xi] Irritant RISK PHRASES: R36
Sodium Alcohol Sulfate	151-21-3	205-788-1	0502	1 – 5%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

SECTION 4 - FIRST-AID MEASURES

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation persists.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing dificulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or eye problems may be aggravated by prolonged contact.

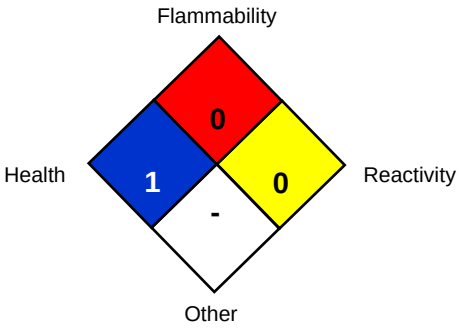
RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT: Not Flammable
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): NA Upper (UEL): NA
FIRE EXTINGUISHING MATERIALS: As appropriate for surrounding fire. Carbon dioxide, foam, dry chemical, halon, or water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is non-flammable and has no known explosion hazards.
Explosion Sensitivity to Mechanical Impact: Not Sensitive.
Explosion Sensitivity to Static Discharge: Not Sensitive
SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	1
FLAMMABILITY HAZARD (RED)	0
PHYSICAL HAZARD (YELLOW)	0

PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.
SPILLS: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Sweep, shovel or vacuum spilled material and place in an appropriate container for re-use or disposal. Avoid dust generation if possible. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Containers of this product must be properly labeled. Store containers in a cool, dry location. Keep container tightly closed when not in use. Store away from strong acids or oxidizers.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	SWA
Sodium Bicarbonate	144-55-8	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium (C10 – C16) Alkylbenzene Sulfonate	68081-81-2	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium Tripolyphosphate	7758-29-4	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Tetrasodium Pyrophosphate	7722-88-5	5 mg/m³	5 mg/m³	5 mg/m³
Sodium Carbonate	497-19-8	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium Alcohol Sulfate	151-21-3	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Based on test data, exposure limits should not be exceeded under normal use conditions when using Alconox Detergent. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact.. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid
APPEARANCE & ODOR:	White granular powder with little or no odor.
ODOR THRESHOLD (PPM):	Not Available
VAPOR PRESSURE (mmHg):	Not Applicable
VAPOR DENSITY (AIR=1):	Not Applicable.
BY WEIGHT:	Not Available
EVAPORATION RATE (nBuAc = 1):	Not Applicable.
BOILING POINT (C°):	Not Applicable.
FREEZING POINT (C°):	Not Applicable.
pH:	9.5 (1% aqueous solution)
SPECIFIC GRAVITY 20°C: (WATER =1)	0.85 – 1.1
SOLUBILITY IN WATER (%)	>10% w/w
COEFFICIENT OF WATER/OIL DIST.:	Not Available
VOC:	None
CHEMICAL FAMILY:	Detergent

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable
DECOMPOSITION PRODUCTS: When heated to decomposition this product produces Oxides of carbon (COx)
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and strong oxidizing agents.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Contact with incompatible materials and dust generation.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is available for mixture:

CAS# 497-19-8 LD50 Oral (Rat)	4090 mg/kg
CAS# 497-19-8 LD50 Oral (Mouse)	6600 mg/kg
CAS# 497-19-8 LC50 Inhalation (Rat)	2300 mg/m³ 2H
CAS# 497-19-8 LC50 Inhalation (Mouse)	1200 mg/m³ 2H
CAS# 7758-29-4 LD50 Oral (Rat)	3120 mg/kg
CAS# 7758-29-4 LD50 Oral (Mouse)	3100 mg/kg
CAS# 7722-88-5 LD50 Oral (Rat)	4000 mg/kg

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.
IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.
SENSITIZATION OF PRODUCT: This product is not considered a sensitizer.
REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
ENVIRONMENTAL STABILITY: No Data available at this time.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.
PROPER SHIPPING NAME: Non-Regulated Material
HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable
UN IDENTIFICATION NUMBER: Not Applicable
PACKING GROUP: Not Applicable.
DOT LABEL(S) REQUIRED: Not Applicable
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): Not Applicable
MARINE POLLUTANT: None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:
This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:
This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):
This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:
This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Controlled Product, Hazard Class D2B as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett Global Safety Management, 10006 Cross Creek Blvd. Suite 440, Tampa, FL 33647

Disclaimer: To the best of Alconox, Inc. knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type either express or implied are provided. The information contained herein relates only to this specific product.

ANNEX:

IDENTIFIED USES OF ALCONOX® AND DIRECTIONS FOR USE

Used to clean: Healthcare instruments, laboratory ware, vacuum equipment, tissue culture ware, personal protective equipment, sampling apparatus, catheters, tubing, pipes, radioactive contaminated articles, optical parts, electronic components, pharmaceutical apparatus, cosmetics manufacturing equipment, metal castings, forgings and stampings, industrial parts, tanks and reactors. Authorized by USDA for use in federally inspected meat and poultry plants. Passes inhibitory residue test for water analysis. FDA certified.

Used to remove: Soil, grit, grime, buffing compound, slime, grease, oils, blood, tissue, salts, deposits, particulates, solvents, chemicals, radioisotopes, radioactive contaminations, silicon oils, mold release agents.

Surfaces cleaned: Corrosion inhibited formulation recommended for glass, metal, stainless steel, porcelain, ceramic, plastic, rubber and fiberglass. Can be used on soft metals such as copper, aluminum, zinc and magnesium if rinsed promptly. Corrosion testing may be advisable.

Cleaning method: Soak, brush, sponge, cloth, ultrasonic, flow through clean-inplace. Will foam—not for spray or machine use.

Directions: Make a fresh 1% solution (2 1/2 Tbsp. per gal., 1 1/4 oz. per gal. or 10 grams per liter) in cold, warm, or hot water. If available use warm water. Use cold water for blood stains. For difficult soils, raise water temperature and use more detergent. Clean by soak, circulate, wipe, or ultrasonic method. Not for spray machines, will foam. For nonabrasive scouring, make paste. Use 2% solution to soak frozen stopcocks. To remove silver tarnish, soak in 1% solution in aluminum container. RINSE THOROUGHLY—preferably with running water. For critical cleaning, do final or all rinsing in distilled, deionized, or purified water. For food contact surfaces, rinse with potable water. Used on a wide range of glass, ceramic, plastic, and metal surfaces. Corrosion testing may be advisable.

EXAMPLE

SAFETY DATA SHEET

Isobutylene

Airgas
an Air Liquide company

Section 1. Identification

GHS product identifier : Isobutylene

Chemical name : 2-methylpropene

Other means of identification : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

Product use : Synthetic/Analytical chemistry.

Synonym : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

SDS # : 001031

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : 2-methylpropene

Other means of identification : 1-Propene, 2-methyl-; Isobutene; Isobutylene; 1-Propene, 2-methyl- (isobutene)

CAS number/other identifiers

CAS number : 115-11-7

Product code : 001031

Ingredient name	%	CAS number
Isobutylene	100	115-11-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Isobutylene	**ACGIH TLV (United States, 3/2015).** TWA: 250 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied compressed gas.]

Color : Colorless.

Molecular weight : 56.12 g/mole

Molecular formula : C4-H8

Boiling/condensation point : -6.9°C (19.6°F)

Melting/freezing point : -140.7°C (-221.3°F)

Critical temperature : 144.75°C (292.6°F)

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Flash point : Closed cup: -76.1°C (-105°F)

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

Lower and upper explosive (flammable) limits : Lower: 1.8%
Upper: 9.6%

Vapor pressure : 24.3 (psig)

Vapor density : 1.94 (Air = 1)

Specific Volume (ft^3/lb) : 6.6845

Gas Density (lb/ft^3) : 0.1496 (25°C / 77 to °F)

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 0.263 g/l

Partition coefficient: n-octanol/water : 2.34

Auto-ignition temperature : 465°C (869°F)

Decomposition temperature : Not available.

SADT : Not available.

Section 9. Physical and chemical properties

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Oxidizers

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Isobutylene	LC50 Inhalation Vapor	Rat	550000 mg/m³	4 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Isobutylene	2.34	-	low

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1055	UN1055	UN1055	UN1055	UN1055
UN proper shipping name	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE	ISOBUTYLENE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: Forbidden. **Cargo aircraft** Quantity limitation: 150 kg **Special provisions** 19, T50	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). **Explosive Limit and Limited Quantity Index** 0.125 **ERAP Index** 3000 **Passenger Carrying Ship Index** Forbidden **Passenger Carrying Road or Rail Index** Forbidden **Special provisions** 29	-	-	**Passenger and Cargo Aircraft**Quantity limitation: 0 Forbidden **Cargo Aircraft Only** Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act (CAA) 112 regulated flammable substances: isobutylene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Isobutylene	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : This material is listed or exempted.

Malaysia : Not determined.

Section 15. Regulatory information

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Canada

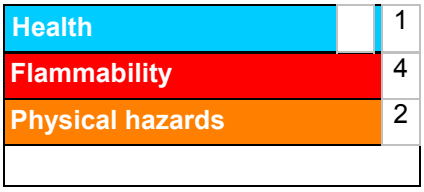
WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Liq. Gas, H280	Expert judgment Expert judgment

History

Date of printing : 7/11/2016

Date of issue/Date of revision : 7/11/2016

Date of previous issue : No previous validation

Section 16. Other information

Version : 0.01

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.08.2015

Hydrochloric Acid,ACS

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : **Hydrochloric Acid,ACS**

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: **S25358**

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:

Corrosive
Serious eye damage, category 1
Corrosive to metals, category 1
Skin corrosion, category 1B

Irritant
Specific target organ toxicity following single exposure, category 3

Corr. Metals 1
Corr. Skin 1B
Eye Damage 1
STOT. SE 3

Signal word :Danger

Hazard statements:
May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary statements:
If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container
Do not get in eyes, on skin, or on clothing
Wash skin thoroughly after handling
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see supplemental first aid instructions on this label)
Wash contaminated clothing before reuse
Absorb spillage to prevent material damage
Store in a well ventilated place. Keep container tightly closed
Store locked up
Store in corrosive resistant stainless steel container with a resistant inner liner
Dispose of contents and container to an approved waste disposal plant

Other Non-GHS Classification:

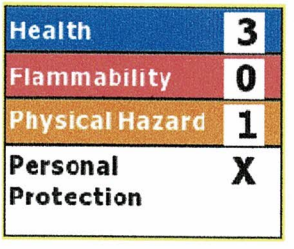
WHMIS

D1A 

E 

NFPA/HMIS

NFPA SCALE (0-4)



HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7647-01-0	Hydrochloric Acid, ACS	30-50 %
CAS 7732-18-5	Water	50-70 %
		Percentages are by weight

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position.Seek medical attention if irritation or coughing persists.

After skin contact: Wash affected area with soap and water. Immediately remove contaminated clothing and shoes.Rinse thoroughly with plenty of water for at least 15 minutes.Immediately seek medical attention.

After eye contact: Protect unexposed eye. Flush thoroughly with plenty of water for at least 15

minutes.Remove contact lenses while rinsing.Continue rinsing eyes during transport to hospital.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Immediately seek medical attention.

Most important symptoms and effects, both acute and delayed:

Inhalation may cause irritation to nose and upper respiratory tract, ulceration, coughing, chest tightness and shortness of breath. Higher concentrations cause tachypnoea, pulmonary oedema and suffocation . Ingestion may cause corrosion of lips, mouth, oesophagus and stomach, dysphagia and vomiting.Pain, eye ulceration, conjunctival irritation, cataracts and glaucoma may occur following eye exposure.Erythema and skin irritation, as well as chemical burns to skin and mucous membranes may arise following skin exposure.;Potential sequelae following ingestion of hydrochloric acid include perforation, scarring of the oesophagus or stomach and stricture formation causing dysphagia or gastric outlet obstruction. In some cases, RADS may develop. Respiratory symptoms may take up to 36 hours to develop.Symptoms of burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation, edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Indication of any immediate medical attention and special treatment needed:

Provide SDS to Physician.Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.If in contact with metals toxic fumes may be released.

Advice for firefighters:

Protective equipment: Wear protective eyeware, gloves, and clothing. Refer to Section 8. Wear respiratory protection.

Additional information (precautions): Thermal decomposition can produce poisoning chlorine. Hydrochloric acid reacts also with many organic materials with liberation of heat.Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal. Soak up with inert absorbent material and dispose of as hazardous waste. Cover spill with soda ash or calcium carbonate. Mix and add water to form slurry.Wear protective eyeware, gloves, and clothing. Refer to Section 8.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Never use hot water and never add water to the acid.Do not allow contact between hydrochloric acid, metal, and organics.Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Prevent contact with skin, eyes, and clothing. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use only in well ventilated areas.Avoid splashes or spray in enclosed areas.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Store away from incompatible materials. Provide ventilation for containers. Keep container tightly sealed.Containers for hydrochloric acid must be made from corrosion resistant materials: glass, polyethylene, polypropylene, polyvinyl chloride, carbon steel lined with rubber or ebonite.

SECTION 8 : Exposure controls/personal protection




Control Parameters: 7647-01-0, Hydrochloric Acid, ACGIH: 2 ppm Ceiling
7647-01-0, Hydrochloric Acid, NIOSH: 5 ppm Ceiling; 7 mg/m3 Ceiling

Appropriate Engineering controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of handling.

Respiratory protection: Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin: Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection: Faceshield (8-inch minimum).Tightly fitting safety goggles.

General hygienic measures: Perform routine housekeeping. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before rewearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear, colorless liquid.	**Explosion limit lower**: **Explosion limit upper**:	Non Explosive Non Explosive
Odor:	Pungent odor	**Vapor pressure**:	5.7mmHg @ 0C
Odor threshold:	0.3 - 14.9 mg/m3	**Vapor density**:	1.27 (Air=1)
pH-value:	< 1	**Relative density**:	1.0 - 1.2

Melting/Freezing point:	- 74 C	**Solubilities**:	Miscible
Boiling point/Boiling range:	81.5 - 110 C	**Partition coefficient (n-octanol/water)**:	Not Determined
Flash point (closed cup):	Not Applicable	**Auto/Self-ignition temperature**:	Not Determined
Evaporation rate:	>1.00	**Decomposition temperature**:	Not Determined
Flammability (solid,gaseous):	non combustible	**Viscosity**:	a. Kinematic:Not Determined b. Dynamic: Not Determined
Density: Not Determined **Hydrochloric Acid:**MW is36.46			

SECTION 10 : Stability and reactivity

Reactivity: Reacts violently with bases and is corrosive.
Chemical stability: No decomposition if used and stored according to specifications.
Possible hazardous reactions: Attacks many metals in the presence of water forming flammable explosive gas (hydrogen).Reacts violently with oxidants forming toxic gas (chlorine).
Conditions to avoid: Incompatible materials.
Incompatible materials: Bases, Amines, Alkali metals, Metals, permanganates (potassium permanganate), Fluorine, Metal acetylides, Hexalithium disilicide.
Hazardous decomposition products: Hydrogen chloride gas.Carbon oxides.

SECTION 11 : Toxicological information

Acute Toxicity:		
Inhalation:	7647-01-0	LD50 Rat 3124 ppm/hour
Oral:	7647-01-0	LD50 Rat 238 - 277 mg/kg
Dermal:	7647-01-0	LD50 Rabbit >5010 mg/kg
Chronic Toxicity: No additional information.		
Corrosion Irritation:		
Dermal:	7647-01-0	Skin - rabbit Result: Causes burns.
Ocular:	7647-01-0	Eyes - rabbit Result: Corrosive to eyes
Sensitization:		No additional information.
Single Target Organ (STOT):		7647-01-0: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
Numerical Measures:		No additional information.
Carcinogenicity:		No additional information.
Mutagenicity:		No additional information.

Reproductive Toxicity:	No additional information.

SECTION 12 : Ecological information

Ecotoxicity

7647-01-0: Toxicity to fish LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)

Persistence and degradability:
Bioaccumulative potential:
Mobility in soil:
Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Do not allow product to reach sewage system or open water.It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

1789

UN proper shipping name

HYDROCHLORIC ACID

Transport hazard class(es)

Class:
8 Corrosive substances

Packing group:II
Environmental hazard:
Transport in bulk:
Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute

SARA Section 313 (Specific toxic chemical listings):

7647-01-0 Hydrochloric Acid

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

7647-01-0 Hydrochloric Acid 5000 lbs

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

7647-01-0 Hydrochloric Acid

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.Note:. The responsibility to provide a safe workplace remains with the user.The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.The information contained herein is, to the best of our knowledge and belief, accurate.However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material.It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
PNEC: Predicted No-Effect Concentration (REACH)
CFR: Code of Federal Regulations (USA)
SARA: Superfund Amendments and Reauthorization Act (USA)
RCRA: Resource Conservation and Recovery Act (USA)
TSCA: Toxic Substances Control Act (USA)
NPRI: National Pollutant Release Inventory (Canada)
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)

Effective date : 01.08.2015
Last updated : 03.20.2015

Appendix D

Forms

EXAMPLE

Appendix E

GEI's Health and Safety SOPs and Programs

Applicable GEI H&S SOPs *(check all that apply)*		
☐ Biological Hazards – 001	☐ Inclement Weather – 010	☐ Aerial Lift – 020
✔ Bloodborne Pathogens – 002	☐ Ladders -011	☐ Mobile Equipment – 021
☐ Container Management – 003	☐ Noise Exposure -012	☐ Aquatic Ecological Survey & Electrofishing -022
☐ Driver Safety - 004	☐ Nuclear Density Gauge Operation -013	☐ Scaffolding - 023
☐ Electrical Safety - 005a	☐ Utility Markout-014	☐ Wilderness Safety - 024
☐ Lockout Tagout - 005b	☐ Respirator Fit Test Procedure-015	☐ Manual Lifting – 025
☐ Excavation Trenching - 006	☐ Traffic Hazards -016	✔ Hazard Identification - 026
☐ Non-Powered Hand Tools -008a	☐ Water Safety – 017	☐ Confined Space Entry for Sanitary Sewers – 027
☐ Powered Hand Tools – 008b	☐ Working Around Heavy Equipment – 018	☐ Safe Trailer Use – 028
☐ Hazardous Substances Management -009	☐ Rail Safety -019	✔ COVID-19 Consolidated Workplace Guidelines

Scan this QR code with your smartphone to access all GEI H&S SOPs

Applicable GEI H&S Programs *(check all that apply)*		
☐ Asbestos Program	☐ DOT Driver Safety	☐ Hydrogen Sulfide
☐ Arsenic Safety	✔ Ergonomic	☐ Injury and Illness Prevention (California Only)
☐ Benzene Awareness	☐ Fall Protection	☐ Respiratory Protection Program
☐ Cadmium Safety	✔ Hazard Communication	☐ Lead Awareness
☐ Cold Stress	☐ Hearing Conservation	✔ Fire Prevention
☐ Confined Space Entry	☐ Heat Illness Prevention	
☐ Crystalline Silica	☐ Hexavalent Chromium	

Scan this QR code with your smartphone to access all GEI Programs

Appendix F

Fall Protection Plan

Fall Protection Plan

This fall protection plan addresses the use of fall protection for work performed on the Insert Project Name and Location. The GEI scope of work that involves fall protection for Select One: working near the edge of a 6 foot or greater excavation or working on elevated areas with the potential to fall greater than 4 feet in general industry or working on elevated areas with the potential to fall greater than 6 feet during construction activities includes: Insert GEI scope-of-work which requires fall protection.

This section is designed to enable GEI employees to recognize the site-specific fall hazards and to establish procedures that are to be followed in order to prevent falls. Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard. This plan follows GEI's Fall Prevention and Protection Program which outlines the procedures, precautions, responsibilities, and methods used by GEI and complies with the Occupational Safety and Health Administration (OSHA) Fall Protection Standard, 29 CFR 1926, Subpart M. This program applies to employees who work or have the potential to work on projects where exposure to falls greater than 5 feet are possible.

The fall protection procedures in this HASP will be reviewed by a qualified person to determine if additional practices, procedures, or training needs to be implemented. Any changes to the plan will be approved by the Safety Director. Workers will be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes will be maintained at the jobsite.

Responsibilities

The Project Manager (PM) for this project is responsible for the overall health and safety of the project tasks. It is the responsibility of the Site Safety Manager (SSM) to implement the fall protection procedures, provide continual observational safety checks, implement the safety policy and procedures, and correct any unsafe acts or conditions immediately. It is the responsibility of the on-site GEI employee(s) to understand and adhere to the fall protection procedures and to follow the instructions of the SSM. It is also the responsibility of the GEI employee(s) to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employees. The SSM will report directly to the PM. Any changes to this plan must be approved by the Safety Director.

A pre-entry briefing will take place prior to starting work involving all members of the GEI field crew and the contractor. This conference will be conducted by the SSM. During the pre-entry briefing, information pertinent to the site-specific tasks will be thoroughly discussed and safety practices to be used throughout the project will be specified. This

briefing will be documented on the GEI Safety Briefing form (Appendix D) and signed by the participants.

Project-Specific Fall Protection Systems

Aerial Man Lifts

Any GEI employee who has the potential for working on or utilizing aerial lifts will receive training on the use and hazards associated with this equipment (GEI HS-020). Aerial lifts that are rented from equipment suppliers must provide equipment-specific training. Only authorized trained employees are allowed to operate this type of equipment. Falling from a lift is a hazard that must be recognized, and steps taken to mitigate the risk. A full-body harness personal fall arrest system must be used when operating lifts which will be attached to the boom or basket. Fall arrest systems are not permitted to be attached to adjacent poles or structures.

Personal Fall Arrest Systems

The ANSI A10.14-1991 *American National Standard for Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use*, states that the anchor point of a lanyard or deceleration device should, if possible, be located above the wearer's belt or harness attachment. ANSI A10.14 also states that a suitable anchorage point is one which is located as high as possible to prevent contact with an obstruction below should the worker fall. The anchor point is located on a piece of heavy construction equipment located at the pipe section or siphon.

Most manufacturers also warn that the safety block/retractable lifeline must be positioned above the D-ring (above the workspace of the intended user) and OSHA recommends that fall arrest and restraint equipment be used in accordance with the manufacturer's instructions.

The risk of a cable breaking is increased if a lifeline is dragged sideways across the rough surface or edge of concrete at the same moment that the lifeline is being subjected to a maximum impact loading during a fall. The typical 3/16-inch cable in a retractable lifeline has a breaking strength of from 3,000 to 3,700 lbs.

Guardrail Systems

Only guardrails made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with the current OSHA standards (i.e., contain a 42-inch-high top rail, a mid-rail, and toe board, which can withstand 200 pounds of force in any direction).

Engineered Lifelines

Lifeline systems must be designed and approved by an engineer or qualified person. These systems must be engineered to have appropriate anchorages, strength of line designed to hold the engineered number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen employee(s) suspended until a rescue can occur.

Warning Lines and Safety Monitors

All work on a flat roof greater than 50 feet wide, which is performed 6 feet or further back from the edge of the roof can be completed by installing a Warning Line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used. If an employee must access an area within 6 feet of the roof's edge, for reasons other than exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn him/her of any dangers. If another employee is not available to act as a safety monitor, then the employee must don a full body harness and attach a fall restraint lanyard to an anchor point to prevent reaching the edge of the roof.

Equipment Safety

Inspection of Equipment

Prior to any use, fall protection equipment must be inspected to determine if it is in good working condition. Fall protection equipment should be stored according to manufacturer's recommendations to prevent damage and be inspected annually by a competent person. Any fall equipment that does not pass inspection or has been involved in a fall will be destroyed.

Potential Equipment Failures

The factors causing sudden movements and/or unsafe operating conditions for this equipment and activity include:

1. Structure Conditions
    A. Structure shifting
    B. Bracing failure
    C. Product failure
2. Human Error
    A. Incorrect lifeline connection
    B. Tag line hang-up
    C. Incorrect or misunderstood signals

3. Weather Conditions
    A. High winds or gusting wind conditions

Rescue Equipment and Procedures

This section specifically addresses rescue and retrieval of GEI employees in the case of emergencies. At the beginning of any work activity where fall protection is an issue, rescue plans must be identified and discussed with all employees in case of a fall. Outline the specific arrangements made with the rescue team that will provide the prompt rescue of employees in the event of a fall or outline the self-rescue or non-entry rescue procedures that GEI employees will use to rescue themselves.

In the event of a fall, the following people will be notified as soon as possible.

1. Rescue Personnel (i.e., maintenance personnel).
2. Fire Department and emergency medical services if necessary
3. Project Manager/SSM
4. Corporate Safety Director

All employees involved in a fall arrest or fall will be sent immediately for a medical evaluation to determine the extent of injuries, if any. All incidents involving a fall of a GEI employee will be investigated by the Safety Director.

Controlled Access Zones

Only GEI trained and authorized employees are permitted to enter defined controlled access zones and areas from which fall protection is needed. All other workers are prohibited from entering controlled access zones. Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The GEI PM and the Safety Director reserve the right to issue disciplinary warnings to employees, up to and including orders to leave the worksite, for failure to follow the guidelines of the fall protection procedures in this fall protection plan.

Appendix I

Site Management Forms

MONITORING WELL DEVELOPMENT RECORD

GEI Consultants

PID Reading _____ Job Name _____

Job Number _____ By _____ Date _____

Location _____ Measurement Datum _____

Well Number _____

Pre-Development Information Time (start) _____

Water Level _____ Total Depth of Well _____

One Purge Vol _____ Three Well Volume _____

Water Characteristics

Color _____ _____ Clear _____ Cloudy

Odor _____ None _____ Weak _____ Moderate _____ Strong

Any films or immiscible material _____

Volume (gal)	Time	pH	Temp (°C)	Spec. Conductance (µS/cm)	Turbidity (NTU)	DO Conc. (mg/L)	ORP (mV)	TDS

Total Volume Removed (gal) _____ pH _____

Temperature (EC) _____ Specific Conductance (ΦS/cm) _____

DO Concentration (mg/L) _____ ORP (mV) _____

TDS _____

Post Development Information Time (Finished) _____

Water Level _____ Total Depth of Well _____

Approximate Volume Removed (gal) _____

Water Characteristics

Color: _____ _____ Clear _____ Cloudy

Odor: _____ _____None _____Weak _____ Moderate _____ Strong

Any films or immiscible material? _____ or None

Well conditions:

Integrity of well cover: _____ Cap Security (locked?) _____

Conditions of the casing (collapsing, clogging, silting, etc) _____

Comments:

Chain-of-Custody Record

Laboratory:

Laboratory Job #
(Lab use only)

GEI Consultants

1301 Trumansburg Rd., Suite N
Ithaca, NY 14850
TEL: (607) 216-8955
FAX: (607) 274-7577

Project Information

Project Name:

Project Number:

Project Location:

Project Manager:

Send Report to: Paul Silva

Send Faxed Results to:

Send EDD to: labdata @geiconsultants.com

Page ____ of ____

Preservative

Analysis

Sample Handling

Sample Field Filtered
YES NO NA

Sampled Shipped With Ice
YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? YES NO

If Yes, Are Drinking Water Samples Submitted? YES NO

If Yes, Have You Met Minimum Field QC Requirements? YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials								Sample Specific Remarks

Turnaround Time (Business days):

Normal _____ Other_____
10 Day_____ 7 Day_____
5 Day_____ 3 Day_____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Additional Requirements/Comments/Remarks:

Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)

14 MCP Metals = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

GEI Consultants

Site Wide Inspection RECORD

Job Name & Location _____

Job Number _____ By _____ Date _____

Component	Condition	Issues	Corrective actions needed	Notes
Wells				
Soil Cover				

SITE INSPECTION FORM

SITE INSPECTION DATE: _____ **TIME OF ARRIVAL**: _____

DEPARTURE: _____

WEATHER: _____

_____

Representative(s) Present On-Site: _____

INSPECTION TYPE: **Annual Inspection** **or** **Emergency Inspection**

(if emergency indicate event that required an inspection): _____

Are the Institutional Controls in place, performing properly, and remain effective? Yes / No

Does the Site comply with NYSDEC-approved Site Management Plan? Yes / No

Has ownership of the property changed since the last inspection? Yes / No

(Verify with Real Estate and Survey Departments)

Are there any changes to intended site use that Yes / No

would affect the SMP or institutional controls?

Is site used for agricultural purpose or vegetable gardens? Yes / No

Is groundwater used as source of potable or process water onsite Yes / No

If yes to the above – does water go through the necessary water quality treatment? Yes/No

SITE INSPECTION FORM

Are the Engineering Controls in place, performing properly, and remain effective?

Surface Cover Intact (i.e. no evidence of erosion, excavations, etc)? Yes / No

GENERAL SITE OBSERVATIONS:

Have there been any changes to the property since the last inspection?

(e.g. new equipment, residential buildings or facilities, changes in site topography, erosion, etc.)

NOTE:

Inspections should be made a minimum once a year and within 5 days of an emergency, such as a natural disaster or an unforeseen failure or damage to the building occurs. Inspections will be conducted by the Responsible Party (or their agent) and results reported to NYSDEC.

COMPLETED BY:	**REVIEWED BY:**
SIGNATURE:	**SIGNATURE**

Summary of Green Remediation Metrics for Site Management

Site Name: _____ Site Code: _____
Address: _____ City: _____
State: _____ Zip Code: _____ County: _____

Initial Report Period (Start Date of period covered by the Initial Report submittal)
Start Date: _____

Current Reporting Period
Reporting Period From: _____ To: _____

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

I. Energy Usage: Quantify the amount of energy used directly on Site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the Site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-Site.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on Site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off Site to landfills		
Transported off Site to other disposal facilities		
Transported off Site for recycling/reuse		
Reused on Site		

Provide a description of any implemented waste reduction programs for the Site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the Site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the Site.

IV. Water Usage: Quantify the volume of water used on Site from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used on Site		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-Site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the Site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the Site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application. _____ **Date** **Contractor**

Appendix J

Request to Import-Reuse Fill Material Form

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised April 2023