

WORK PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE REMEDIAL ACTION WORK PLAN



September 2019



TABLE OF CONTENTS

| | |
|--|-----|
| List of Figures..... | ii |
| List of Appendicies..... | ii |
| List of Exhibits..... | ii |
| List of Acronyms | iii |
| 1. Introduction | 1 |
| 1.1 General..... | 1 |
| 1.2 RAWP Organization | 1 |
| 2. Background and IRM Description..... | 2 |
| 2.1 Site Description..... | 2 |
| 2.2 Site History | 2 |
| 2.3 Environmental Impacts | 2 |
| 2.4 Interim Remedial Design | 2 |
| 3. Design Details..... | 3 |
| 3.1 Mobilization and Site Preparation..... | 3 |
| 3.2 Excavation..... | 3 |
| 3.3 Restoration | 3 |
| 3.4 Community Health and Safety | 3 |
| 4. Remedial Construction | 4 |
| 4.1 Supporting Plans | 4 |
| 5. Permits | 5 |
| 6. Schedule..... | 6 |
| 7. Post Construction Reporting..... | 7 |
| References | 8 |

LIST OF FIGURES

1. Site Location Plan
2. Construction Schedule

LIST OF APPENDICIES

- A. Design Drawings
- B. Technical Specifications
- C. Construction Work Plan (CWP)
- D. Community Air Monitoring Plan (CAMP)
- E. Sampling and Analysis Plan
- F. Traffic Control Plan
- G. Waste Management Handling and Disposal Plan
- H. Stormwater Pollution Prevention Plan (SWPPP)
- I. Construction Quality Assurance Plan

LIST OF EXHIBITS

1. Health and Safety Plan (HASP)

LIST OF ACRONYMS

| | |
|------------|--|
| CAMP | Community Air Monitoring Plan |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| DER | Division of Environmental Remediation |
| E&SC Plan | Erosion and Sediment Control Plan |
| GES | Groundwater and Environmental Services |
| HASP | Health and Safety Plan |
| IRM | Interim Remedial Measure |
| LiRo | The LiRo Group |
| NYCRR | New York Codes, Rules, and Regulations |
| NYS | New York State |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDEC NHP | New York State Department of Environmental Conservation Natural Heritage Program |
| OBG | O'Brien & Gere Engineers, Inc., a Ramboll company |
| OCDOT | Onondaga County Department of Transportation |
| PCB | Polychlorinated Biphenyl |
| ppm | Part per Million |
| RAWP | Remedial Action Work Plan |
| SCO | Soil Cleanup Objective |
| SWPPP | Stormwater Pollution Prevention Plan |
| TAGM | Technical Administrative Guidance Memorandum |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |

1. INTRODUCTION

1.1 GENERAL

This document is the Remedial Action Work Plan (RAWP) for the interim remedial measure (IRM) for the 1318 Niagara Street property (Site), in the City of Buffalo, Erie County, New York. This RAWP has been prepared on behalf of New York State Department of Environmental Conservation. Remediation is being performed in accordance with NYSDEC Division of Environmental Remediation (DER) contract number D007623-39 issued on December 20, 2018.

NYSDEC has retained O'Brien & Gere Engineers, Inc., a Ramboll company to develop and design the RAWP. NYSDEC has retained Groundwater and Environmental Services to perform the remedial construction.

Throughout the RAWP the entities involved in the IRM are referred to by the following convention:

- The Department – New York State Department of Environmental Conservation (NYSDEC)
- The Owner – The City of Buffalo
- The Engineer – O'Brien & Gere Engineers, Inc., a Ramboll company (OBG)
- The Contractor – Groundwater and Environmental Services (GES)

1.2 RAWP ORGANIZATION

The RAWP provides the site background, design details, approach to implementing the IRM, and a description of post construction reporting. A description of each section's contents is as follows:

- Section 2 of the RAWP summarizes the site background and describes the IRM
- Section 3 presents design details associated with the IRM.
- Section 4 identifies supporting plans that are included as appendices and exhibits to the RAWP
- Section 5 describes permit requirements associated with the IRM
- Section 6 presents the anticipated construction schedule
- Section 7 describes required post-construction reporting, including preparation of a Construction Completion Report

2. BACKGROUND AND IRM DESCRIPTION

2.1 SITE DESCRIPTION

The 1318 Niagara Street site (Site) is located in Buffalo, NY at the intersection of Niagara Street and Lafayette Avenue. The Site is approximately 0.77 acres in size and is currently a vacant lot. The Site previously contained buildings, which were demolished in 2006 (The LiRo Group [LiRo] 2013). The Site is bounded to the north and south by commercial buildings, a Penn Central Railroad corridor to the west, and Niagara Street to the east. The nearest residential area is approximately 150 feet east of the Site. The Site is currently inactive and zoned for commercial use.

2.2 SITE HISTORY

Information provided by NYSDEC reported that the Site was used as a brewery from 1909 to 1987 (LiRo 2013). From 1987 to 2004, the Site was utilized by private owners for unknown purposes. In 2004 the City of Buffalo obtained the property through tax foreclosure. Demolition of the Site buildings began in May of 2006. Residual oil was removed from underground storage tanks (USTs) using a vacuum truck, and the USTs were excavated in February 2007. The tanks were staged and subsequently removed from the Site in 2010. Upon UST excavation, it was found that one of the USTs had leaked into the subsurface, impacting the surrounding soil. As a result of the UST leak, the NYSDEC assigned Spill Number 0651726 to the Site. Subsequent sampling indicated that the oil within the tank contained Polychlorinated Biphenyls (PCBs). Underground piping associated with the USTs was also discovered and removed prior to 2009. A former furnace was discovered in the northwest corner of the site in January 2007. The furnace contained sludge containing PCBs (23,700 parts per million [ppm]) and certain organic compounds and metals at concentrations exceeding the TCLP criteria. The furnace and sludge were subsequently removed.

2.3 ENVIRONMENTAL IMPACTS

The primary constituent of concern for the Site is PCBs. In addition to confirmation samples taken during the previous IRMs, soil borings collected by GES indicate the presence of PCBs in excess of 1 ppm across the Site. Apart from a few isolated locations, PCBs in excess of 50 ppm have been detected primarily at the southern and western portions of the site. PCBs in excess of 1 ppm have been detected within the top 2 feet of the soil, to as deep as 16 feet on the Site. Historical sample locations are further described in the *Sampling and Analysis Plan (Appendix D)*.

2.4 INTERIM REMEDIAL DESIGN

The scope of work of this IRM includes excavation of soil from areas where soil in the first 2 feet exceeds the NYSDEC Restricted Residential soil cleanup objective (SCO) of 1 ppm PCBs and backfill with 2 feet of clean soil cover to allow for restricted use of the Site as a Pocket Park. At the southwest corner of the site, 4 feet of soil will be removed and replaced with clean fill. Impacted soil outside of the property will be left in place. Excavated soil will be transported to and disposed at an appropriately regulated landfill facility as described in the *Waste Management and Handling Disposal Plan (Appendix G)* and replaced with backfill meeting the allowable constituent levels for imported fill of soil presented in Appendix 5 of NYSDEC's *DER-10/Technical Guidance for Site Investigations and Remediation* (NYSDEC 2010) and emerging contaminants presented in *Sampling for 1,4-Dioxane and Per- and Polyfluoroalkyl Substances (PFAS) Under DEC's Part 375 Remedial Programs* (NYSDEC 2019). Deeper impacted soil (including PCB concentrations greater than 50 ppm regulated by the Toxic Substances Control Act [TSCA]) will be left in place below a demarcation layer.

3. DESIGN DETAILS

The IRM involves excavation of impacted soil (*i.e.*, soil containing a concentration of PCBs greater than 1 ppm within the top 2 feet) and site restoration. Details of the design were included in the August 16, 2019 *Design Drawings* and *Technical Specifications* (**Appendix A** and **B**). A description of the construction approach is provided in the *Construction Work Plan* (**Appendix C**).

3.1 MOBILIZATION AND SITE PREPARATION

Mobilization and site preparation activities include:

- Establishment of support areas (*e.g.*, contractor staging area)
- Installation of a stabilized construction entrance to the site

After these activities are complete, excavation of impacted soil is proposed to begin.

3.2 EXCAVATION

The limits of excavation are identified on the *Design Drawings* (**Appendix A**) and were selected based on the results of soil sampling and analysis performed between 2011 and 2018. The proposed excavation depths vary between 6 inches and 4 feet. The remaining soil concentrations below the proposed excavations will be documented and will be addressed by institutional controls, as necessary as part of the Site Management Plan. Confirmation and documentation sampling will be performed in locations identified in the *Sampling and Analysis Plan* (**Appendix D**).

3.3 RESTORATION

Excavated soil will be replaced with backfill as identified on the *Design Drawings* (**Appendix A**) and *Technical Specifications* (**Appendix B**). Vegetation will be established as described in Technical Specification 32 93 13 Topsoil and Seeding. Other backfill materials are specified in Technical Specification 31 05 16 Aggregates for Earthwork.

3.4 COMMUNITY HEALTH AND SAFETY

Temporary construction fencing will be installed along the east side of the property bordering Niagara Street. Community air monitoring and traffic control will be implemented for community health and safety. The *Community Air Monitoring Plan* (CAMP) that describes the air monitoring to be conducted during excavation and other earthmoving activities is included as **Appendix E**. A *Traffic Control Plan* is provided as **Appendix F**. Emergency procedures are included as part of the *Health and Safety Plan* (**Exhibit 1**).

4. REMEDIAL CONSTRUCTION

Details related to the performance of remedial construction are provided in **Appendix C** (*Construction Work Plan*). These details address components of the proposed work beginning with mobilization, through excavation and restoration, and concluding with demobilization activities.

4.1 SUPPORTING PLANS

In addition to the *Construction Work Plan* (**Appendix C**) the following plans have been developed to support construction implementation:

Sampling and Analysis Plan (SAP) (**Appendix D**) – Describes historical sampling results and future confirmation and documentation sampling locations.

Community Air Monitoring Plan (CAMP) (**Appendix E**) - Describes the measures that will be taken to monitor, respond to, and mitigate the potential airborne releases of project related dust.

Traffic Control Plan (**Appendix F**) – Describes transportation routes to and from the site and measures to be implemented to control traffic during construction.

Waste Management Handling and Disposal Plan (**Appendix G**) – Presents waste sampling requirements, methods for determining waste disposal requirements, name and location of waste disposal facilities and licensed waste haulers, and procedures for manifest management.

Stormwater Pollution Prevention Plan (SWPPP) (**Appendix H**) - Describes measures to be implemented to minimize erosion and sediment migration.

Construction Quality Assurance Plan (CQAP) (**Appendix I**) – Describes monitoring of remedial and construction procedures for compliance with the plans in the RAWP.

Health and Safety Plan (HASP) (**Exhibit 1**) - Describes measures that will be taken to provide for the health and safety of site personnel during remedial construction.

5. PERMITS

In collaboration with NYSDEC and the City of Buffalo it was determined that no permits were required in order to perform this IRM.

6. SCHEDULE

Construction activities are anticipated to begin September 9, 2019. The first week will include a week of mobilization and site preparation activities including mobilizing equipment, situating restrooms, installing erosion control, and installing site fencing. The following four weeks will include excavation of soils and backfilling with subgrade. The sixth week will include installation of topsoil, a cover crop, and the final site fencing. The following week will include demobilization, restoration of monitoring wells, and punch list items. Finally, grass will be planted via hydroseeding. A Gantt chart of the construction schedule is included as **Figure 2**.

7. POST CONSTRUCTION REPORTING

At the conclusion of construction, a Construction Completion Report will be prepared to document the 1318 Niagara Street IRM. The completion report will be prepared based on records kept by OBG's on-site representative and documentation developed by the construction contractor during the course of construction, including record drawings. The completion report will present a summary of the IRM and a description of the remedial actions performed. Appendices will be prepared to present the results of monitoring and sampling conducted during the remedial action. Record drawings will also be included as an appendix. The completion report will include a certification signed by an OBG New York State Licensed Professional Engineer and provided to NYSDEC for approval.

REFERENCES

LiRo Engineers Inc. (LiRo). 2013. *Site Investigation and Remedial Alternatives Report 1318 Niagara Street*. June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2010. *DER-10 Technical Guidance for Site Investigation and Remediation*. May 3, 2010.

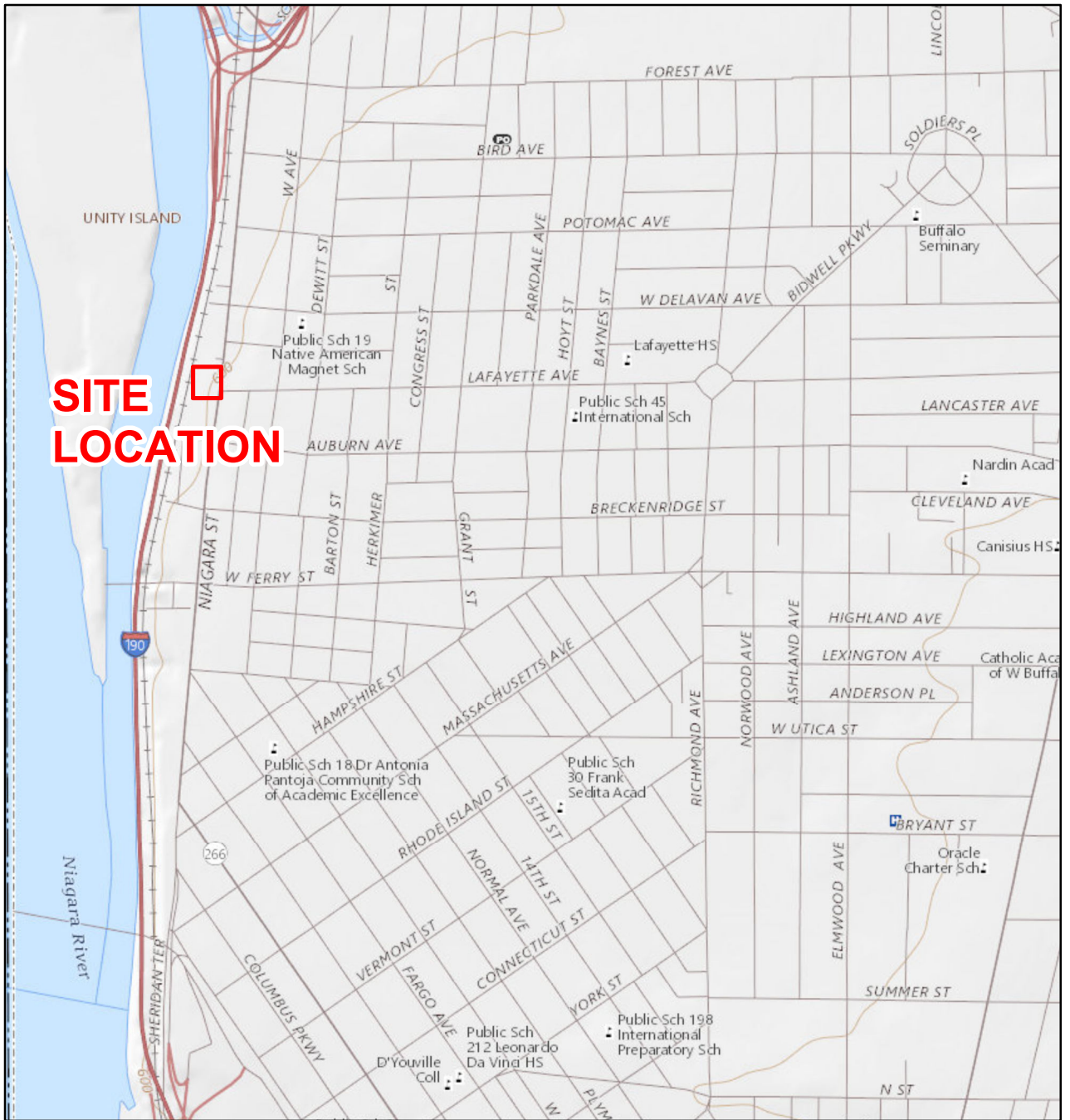
NYSDEC. 2019. *Sampling for 1,4-Dioxane and Per- and Polyfluoroalkyl Substances (PFAS) Under DEC's Part 375 Remedial Programs*. February 2019.



Figures

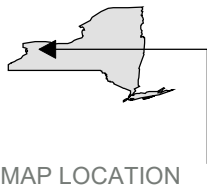
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I:\Parsons-Eng.8653\71532.Remedial-Design\Docs\DWG\MXD\Site Location.mxd

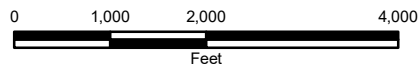


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NYSDEC
1318 NIAGARA STREET IRM
BUFFALO, NEW YORK

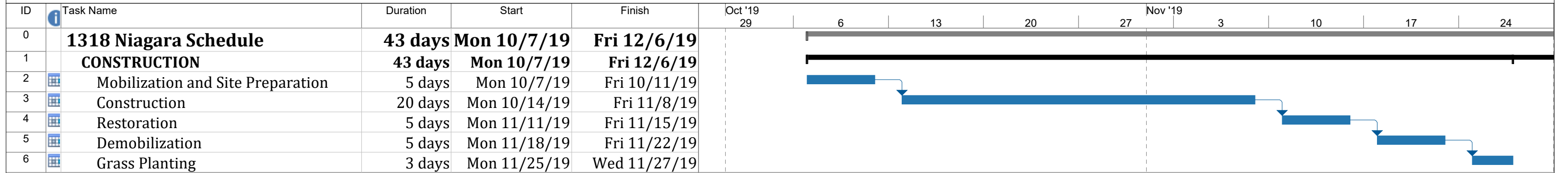


SITE LOCATION



1:24,000





Project: 1318 Niagara Schedule
Date: Thu 9/26/19

| | | | | | | | | | |
|-----------|--|--------------------|--|-----------------------|--|----------------|--|--------------------|--|
| Task | | Project Summary | | Inactive Summary | | Manual Summary | | External Milestone | |
| Split | | External Tasks | | Manual Task | | Start-only | | Progress | |
| Milestone | | External Milestone | | Duration-only | | Finish-only | | Deadline | |
| Summary | | Inactive Milestone | | Manual Summary Rollup | | External Tasks | | | |



Appendices



Appendix A
Design Drawings

ISSUED FOR CONSTRUCTION

REMEDIAL DESIGN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE



SITE LOCATION MAP
NOT TO SCALE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK

SEPTEMBER 2019



O'BRIEN & GERE ENGINEERS, INC.

INDEX TO DRAWINGS

| | |
|-------|--|
| | TITLE SHEET |
| C-101 | EXISTING SITE PLAN & GENERAL NOTES |
| C-102 | EROSION AND SEDIMENT CONTROL PLAN |
| C-103 | EXCAVATION PLAN |
| C-104 | MAINTENANCE AND PROTECTION OF TRAFFIC PLAN |
| C-501 | MISCELLANEOUS DETAILS |
| C-502 | MISCELLANEOUS DETAILS |



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GENERAL NOTES:

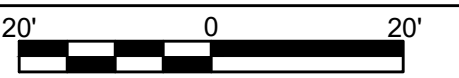
- EXISTING 1318 NIAGARA STREET SURVEY INFORMATION PROVIDED BY FOIT-ALBERT ASSOCIATES, P.C. AND SHOULD BE CONSIDERED APPROXIMATE ONLY.
- EXACT DIMENSIONS AND LOCATIONS OF ALL STRUCTURES AND UTILITIES ARE CONSIDERED APPROXIMATE ONLY AND SHALL BE VERIFIED AS REQUIRED IN THE FIELD BY THE CONTRACTOR.
- UNDER AND ABOVE GROUND UTILITIES MAY EXIST, THE LOCATIONS, DEPTHS AND EXTENT OF WHICH ARE UNKNOWN. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND ELEVATION OF ALL UTILITIES IN THE FIELD AS IT MAY PERTAIN TO THE CONTRACTOR'S WORK PRIOR TO CONSTRUCTION. ALL UNDERGROUND UTILITIES ARE DEPICTED AT SUBSURFACE UTILITY ENGINEERING "QUALITY LEVEL C" AND HAVE BEEN LOCATED FROM FIELD SURVEY AND RECORD INFORMATION PROVIDED (CI/ASCE 38-02).
- DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SUPPORT OF ALL UNDER AND ABOVE GROUND UTILITIES AFFECTED BY THE CONTRACTOR'S WORK.
- THE CONTRACTOR SHALL CONTACT "DIG SAFELY NY" WITHIN 72 HOURS PRIOR TO THE COMMENCEMENT OF THE WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND IF NECESSARY NOTIFY THE AFFECTED UTILITY DEPARTMENTS ONE WEEK PRIOR TO DIGGING IN ANY PORTION OF THE SITE. DIG SAFELY NEW YORK PHONE NUMBER: 1-800-962-7962. WEBSITE: WWW.DIGSAFELYNEWYORK.COM
- ALL INTRUSIVE GROUND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NYSDEC SPDES GP-0-15-002 AND THE PROJECT SWPPP.
- THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR THE TEMPORARY DE-ENERGIZING, OR INTERRUPTION OF SERVICE, REMOVAL, RELOCATION, REPLACEMENT OF ANY UTILITY POLES, GUY WIRES, UNDERGROUND UTILITIES AND/OR OVERHEAD WIRES WITHIN THE LIMITS OF WORK, OR THAT COULD OTHERWISE INTERFERE WITH THE REMEDIAL ACTIONS.
- THE CONTRACTOR SHALL FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, PROVIDE ALL TRENCH SHORING, SCAFFOLDING, SHIELDING, DUST/FUME PROTECTION, MECHANICAL/ELECTRICAL PROTECTION, SPECIAL GROUNDING, SAFETY RAILINGS, BARRIERS, OR OTHER SAFETY FEATURES REQUIRED.
- THE CONTRACTOR SHALL COORDINATE ANY NECESSARY TRAFFIC CONTROLS AND OBTAIN ANY TRAFFIC RELATED PERMITS THAT MAY BE REQUIRED TO PERFORM THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SURVEY CONTROL DURING THE PERFORMANCE OF WORK AND TO VERIFY EXISTING GRADES. THE OWNER WILL PROVIDE THE CONTRACTOR WITH THE CONTRACT DRAWINGS IN ELECTRONIC FORMAT FOR THE CONTRACTOR'S USE. THE CONTRACTOR SHALL PERFORM AN AS-BUILT SURVEY OF EXCAVATION BOUNDARIES USING A LICENSED SURVEYOR.
- THE CONTRACTOR SHALL RESTORE TO PRECONSTRUCTION CONDITIONS OR BETTER ALL SUPPORT AREAS THAT ARE IMPACTED BY REMEDIAL ACTIVITIES, INCLUDING BUT NOT LIMITED TO, EQUIPMENT AND MATERIAL STORAGE AREAS, MATERIAL LOADING AND STAGING AREAS, PARKING AREAS, AND LOCATIONS OF OFFICE TRAILERS, UNLESS OTHERWISE NOTED.
- ALL SURFACES DAMAGED OR DESTROYED AS A RESULT OF WORK PERFORMED BY THE CONTRACTOR SHALL BE RESTORED TO PRECONSTRUCTION CONDITIONS OR BETTER IN A TIMELY MANNER AND PRIOR TO CONTRACTOR DEMOBILIZATION.
- ALL EQUIPMENT OPERATED WITHIN THE LIMITS OF WORK SHALL BE DECONTAMINATED PRIOR TO TRANSPORT OFF-SITE AND/OR TRANSPORTING/HANDLING CLEAN BACKFILL MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02 81 00 "OFF-SITE TRANSPORTATION AND DISPOSAL". THE CONTRACTOR SHALL PROVIDE 60 MIL POLYETHYLENE SHEETING TO COVER THE GROUND IN ALL AREAS BEING USED TO LOAD EXCAVATED MATERIAL INTO TRUCKS WHETHER IN OR OUT OF THE LIMITS OF WORK.
- ALL IMPORTED FILL MATERIAL SHALL BE COMPLIANT WITH THE COMMERCIAL USE STANDARDS LISTED IN NYCRR PART 375-6.7(d).
- ALL IMPORTED FILL MATERIAL SHALL BE ANALYZED PRIOR TO IMPORT TO THE SITE IN ACCORDANCE WITH DER-10 AND NYSDEC'S FEBRUARY 2019 REQUIREMENTS REGARDING SAMPLING FOR 1,4-DIOXANE AND PFAS UNDER NYSDEC'S PART 375 REMEDIAL PROGRAMS. BASED ON A ESTIMATED EXCAVATION QUANTITY OF 1,000 CUBIC YARDS, DER-10 REQUIRES 7 GRAB SAMPLES FOR VOCs, AND 2 COMPOSITE SAMPLES (EACH MADE OF BETWEEN 3 AND 5 COMBINED GRAB SAMPLES) FOR SVOCs, INORGANICS, PCBs, AND PESTICIDES. IF THE ACTUAL AMOUNT OF BACKFILL MATERIAL REQUIRED IS DIFFERENT FROM THAT STATED HERE, THE CONTRACTOR SHALL REFER TO DER-10, TABLE 5.4(a)(10), FOR SAMPLING REQUIREMENTS. THE COST OF THESE ANALYSES SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PROCUREMENT, TRANSPORTATION AND PLACEMENT OF THE SOIL.
- IN ACCORDANCE WITH APPENDIX E OF THE REMEDIAL ACTION WORK PLAN (RAWP), A TOTAL OF 23 DOCUMENTATION SAMPLES AND 44 CONFIRMATION SAMPLES SHALL BE COLLECTED FROM THE BASE OF EXCAVATIONS AT A SPACING OF APPROXIMATELY 1 PER 900 SQUARE FEET. AN ADDITIONAL 14 DOCUMENTATION SAMPLES SHALL BE COLLECTED FROM SIDEWALLS OF 4-FOOT DEEP EXCAVATIONS AND THE NORTHERN, EASTERN, AND WESTERN PERIMETER OF THE SITE AT A SPACING OF APPROXIMATELY 1 PER 50 LINEAR FEET. ADDITIONAL SOIL EXCAVATION, TRANSPORTATION, AND DISPOSAL MAY BE REQUIRED PENDING CONFIRMATION SAMPLING RESULTS, PER THE SAMPLING AND ANALYSIS PLAN INCLUDED IN THE RAWP.
- DUST AND ODOR MANAGEMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE COMMUNITY AIR MONITORING PLAN.
- IF HYDRANT USE IS NEEDED, CONTRACTOR SHALL COORDINATE HYDRANT ACCESS PERMIT WITH THE COLONEL WARD PUMPING STATION, ENGINEERING ROOM AND OBTAIN NYSDOH FORM 1013 TEST REPORT FOR THE BACKFLOW PREVENTION DEVICE (RPZ) TO BE USED ON THE HYDRANT.

MAPPING NOTES - ALL DRAWINGS:

- TOPOGRAPHIC SURVEY INFORMATION WAS COMPILED FROM AN ACTUAL FIELD SURVEY CONDUCTED 4/26/19 BY FOIT-ALBERT ASSOCIATES ARCHITECTURE, ENGINEERING, AND SURVEYING, P.C.
- COORDINATES ARE REFERENCED TO NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE, NAD 1983.
- ELEVATIONS ARE REFERENCED TO THE NAVD 1988 DATUM.
- NORTH IS REFERENCED TO TRUE NORTH AT 78°35' MERIDIAN OF WEST LONGITUDE.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

EXISTING SITE PLAN

SCALE: 1" = 20'



LEGEND:

- BENCHMARK
- DRAINAGE STRUCTURE (CATCH BASIN)
- ELECTRIC MANHOLE
- FIRE HYDRANT
- GAS METER
- MONITORING WELL
- SEWER MANHOLE (SANITARY)
- SIGN
- UTILITY POLE WITH LIGHT
- WATER VALVE
- COMMUNICATION (UNDERGROUND)
- ELECTRIC (UNDERGROUND)
- GAS LINE (UNDERGROUND)
- SANITARY SEWER (UNDERGROUND)
- STORM SEWER (UNDERGROUND)
- WATER LINE (UNDERGROUND)
- EXISTING CONTOUR
- CHAIN LINK FENCE

ABBREVIATIONS:

- BLD BUILDING
- CONC CONCRETE
- D DEED
- ELEV ELEVATION
- FNC FENCE
- GV GAS VALVE
- INV INVERT
- IP IRON PIPE
- L LIBER
- MS MEASURED
- MW MONITORING WELL
- ROW RIGHT OF WAY
- TA# TAX ASSESSMENT NO.
- TG TOP OF GRATE
- TYP TYPICAL
- VTP VITRIFIED TILE PIPE
- WV WATER VALVE

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| DESIGNED BY | D. KAHN | | | | |
| CHECKED BY | B. PLATT | | | | |
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| | | NO. | DATE | REVISION | INT. |



NYSDEC
1318 NIAGARA ST INTERIM REMEDIAL MEASURE
BUFFALO, NEW YORK

CIVIL
EXISTING SITE PLAN & GENERAL NOTES

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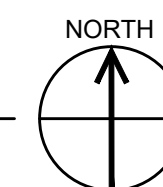
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NOTE:
 1. FINAL CONFIGURATION OF STABILIZED CONSTRUCTION ACCESS AND STAGING AREA TO BE COORDINATED WITH CONTRACTOR.



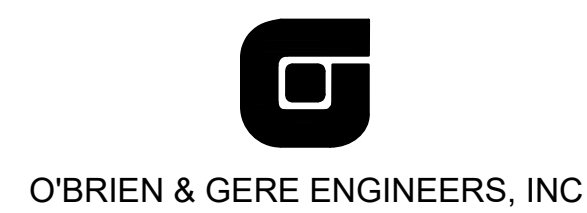
EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'



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NYSDEC
 1318 NIAGARA ST INTERIM REMEDIAL MEASURE
 BUFFALO, NEW YORK

CIVIL
EROSION AND SEDIMENT CONTROL PLAN

FILE NO.
 8653.71532-003
 DATE
 SEPTEMBER 2019

C-102



LEGEND

| | |
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| | IRM 1 & 2 - PREVIOUS EXCAVATION LIMITS (SEE NOTE 1) |
| | 2 FEET DEEP - 2019 IRM TSCA EXCAVATION LIMITS SEE DETAIL 'A', SHEET C-501. |
| | 2 FEET DEEP - 2019 IRM NON-TSCA EXCAVATION LIMITS SEE DETAIL 'A', SHEET C-501. |
| | 1 FOOT DEEP - 2019 IRM NON-TSCA EXCAVATION LIMITS SEE DETAIL 'A', SHEET C-501. |
| | 4 FEET DEEP - 2019 IRM TSCA EXCAVATION LIMITS SEE DETAIL 'A', SHEET C-501. |
| | 4 FEET DEEP - 2019 IRM NON-TSCA EXCAVATION LIMITS SEE DETAIL 'A', SHEET C-501. |

NOTE:

- PREVIOUS EXCAVATION LIMITS ARE BASED ON JUNE 2013 REPORT BY LIRO ENGINEERS INC. ENTITLED SITE INVESTIGATION AND REMEDIAL ALTERNATIVES REPORT 1318 NIAGARA STREET.

EXCAVATION PLAN
 SCALE: 1" = 20'



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| | | NO. | DATE | REVISION | INT. |

O'BRIEN & GERE ENGINEERS, INC.

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 1318 NIAGARA ST INTERIM REMEDIAL MEASURE
 BUFFALO, NEW YORK

CIVIL
 EXCAVATION PLAN

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| FILE NO. | 8653.71532-004 |
| DATE | SEPTEMBER 2019 |



GENERAL NOTES:

- THE CONTRACTOR SHALL MAINTAIN TRAFFIC IN THE VICINITY OF THE WORK AREA THROUGHOUT THE LENGTH OF THE CONTRACT IN ACCORDANCE WITH THE REQUIREMENTS OF THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (FHWA MUTCD) ALONG WITH THE NYSDOT MUTCD SUPPLEMENT, SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS, MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS REFERENCED.
- FOR TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION AREAS NOT SPECIFIED IN THE PLANS INCLUDING NIGHT APPLICATIONS (IF NECESSARY), THE PROVISIONS OF THE FHWA MUTCD AND THE NYS SUPPLEMENT SHALL APPLY. WHERE OPTIONS EXIST FOR SIGN SHAPE, THE DIAMOND SHAPE SHALL BE USED. THE STANDARDS OF APPLICATION NOTED HEREIN AND ON THE PLANS ARE TO BE CONSIDERED MINIMUM STANDARDS. ADDITIONAL PROTECTION SHALL BE PROVIDED WHEN ORDERED BY THE ENGINEER AND/OR CITY OF BUFFALO DEPARTMENT OF PUBLIC WORKS.
- TEMPORARY PAVEMENT MARKINGS:
 - IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY PAVEMENT MARKINGS AT ALL TIMES ON ALL PAVEMENT, WHETHER EXISTING, TEMPORARY, OR NEW.
 - ALL MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE NYS MUTCD AND SHALL INDICATE ACTUAL CONDITIONS AT ALL TIMES.
 - PLACEMENT OF SHORT TERM PAVEMENT MARKINGS SHALL BE AS IDENTIFIED UNDER THE FOLLOWING ITEMS: ITEM NO. 640.10; WHITE PAINT REFLECTORIZED PAVEMENT STRIPES, ITEM NO. 640.11; YELLOW PAINT REFLECTORIZED PAVEMENT STRIPES.
- THE CONTRACTOR SHALL INSTALL ALL SIGNS NECESSARY FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC (INCLUDING RELOCATION AND/OR MODIFICATION AND/OR RESTORATION OF EXISTING SIGN PANELS).
- THE CONTRACTOR SHALL POST WARNING SIGNS AT ALL APPROACHES TO THE PROJECT AND AT CONSTRUCTION ENTRANCES. THE CONTRACTOR SHALL PROVIDE A FLAGPERSON(S) WHEN AND WHERE NECESSARY.
- THE CONTRACTOR HAS THE RESPONSIBILITY OF MAINTAINING SAFE AND PROPER ACCESS TO ALL BUSINESSES IN THE VICINITY OF CONSTRUCTION.
- WHEN TWO OR MORE AREAS ARE ADJACENT, OVERLAP OR ARE IN CLOSE PROXIMITY, THE CONTRACTOR SHALL VERIFY THERE ARE NO CONFLICTING SIGNS AND THAT LANE CONTINUITY IS MAINTAINED THROUGHOUT ALL WORK AREAS.
- THE TYPICAL DETAILS ON THE STANDARD SHEETS, IN THE MUTCD AND HEREIN ON THE PLANS, REFLECT THE MINIMUM REQUIREMENTS. THE ENGINEER SHALL APPROVE ALL MODIFICATIONS TO THESE DETAILS, PRIOR TO IMPLEMENTATION THAT MAY BE NECESSARY TO ACCOMMODATE THE SITE SPECIFIC CONDITIONS.
- DURING NON-WORK HOURS, CONSTRUCTION EQUIPMENT AND MATERIALS SHALL NOT BE STORED WITHIN 30 FT. OF THE EDGE OF PAVEMENT.
- DURING WORK HOURS, NO CONSTRUCTION MATERIALS MAY BE STORED OR PLACED IN THE STREET.
- IF EXISTING TRAFFIC SIGNALS HAVE TRAFFIC ACTUATED PHASES. DETECTION MUST BE MAINTAINED THROUGHOUT THE CONTRACT. THIS MAY REQUIRE TEMPORARY VEHICLE DETECTION.
- TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES. THE WIDTH OF THE WORK ZONE SHALL NOT EXCEED 10 FT, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.
- UNLESS AUTHORIZED BY THE ENGINEER, THE MINIMUM LANE WIDTHS FOR WORK ZONE TRAVEL LANES SHALL BE 10 FT.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER, THE CITY OF BUFFALO POLICE AND FIRE DEPARTMENT, THE NIAGARA FRONTIER TRANSPORTATION AUTHORITY, AND EMERGENCY SERVICES THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF THE CONTRACTOR'S PRINCIPALS OR REPRESENTATIVES WHO ARE AUTHORIZED TO SECURE LABOR, MATERIALS, AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE OF NORMAL WORKING HOURS.

OVERLAPPING WORK AREAS

- THE CONTRACTOR SHALL COORDINATE THEIR WORK SO THERE IS NO CONFLICT IN CONSTRUCTION SIGNING IN OVERLAPPING WORK AREAS AND SO THAT LANE CONTINUITY IS MAINTAINED BETWEEN WORK AREAS.
- THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ANY CONTRACTORS, PUBLIC MAINTENANCE, OR UTILITY COMPANY OPERATIONS IN THE AREA TO ENSURE PROPER MAINTENANCE OF TRAFFIC.

PEDESTRIAN ACCESS NOTES :

- THE CONTRACTOR SHALL SCHEDULE THEIR OPERATIONS WITHIN EACH PHASE OF WORK SUCH THAT INTERRUPTION TO PEDESTRIAN TRAFFIC IS MINIMIZED.
- CONTINUOUS PEDESTRIAN ACCESS ROUTE THAT CONFORMS TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) SHALL BE MAINTAINED AT ALL TIMES ON AT LEAST ONE SIDE OF THE STREET. THE CONTRACTOR IS ADVISED THAT HE MAY NEED TO PROVIDE A TEMPORARY PEDESTRIAN FACILITY DURING WORK PERIODS, IN ORDER TO ENSURE COMPLIANCE WITH THE REQUIREMENTS FOR A CONTINUOUS PEDESTRIAN ACCESS ROUTE.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PEDESTRIAN DETOUR PLAN FOR REVIEW BEFORE CLOSING ANY TRAVEL WAYS.
- THE CONTRACTOR SHALL MAINTAIN THE SIDEWALK AND ADJACENT LAND AREAS. IF ANY DISRUPTION OCCURS THAT RESULTS IN BREAKAGE OF THE SIDEWALK OR RUTTING OF THE ADJACENT LAND IN THESE AREAS THEY SHALL BE REPAIRED IMMEDIATELY IN CONFORMANCE WITH ADAAG AT THE CONTRACTOR'S EXPENSE.
- TEMPORARY SAFETY FENCING SHALL BE PLACED ALONG ANY TEMPORARY OR PERMANENT SIDEWALK ADJACENT TO ANY EXCAVATION WHICH RESULTS IN A VERTICAL DROP OFF. SAFETY FENCING SHALL BE CONTINUOUS PLASTIC FLUORESCENT ORANGE SUPPORTED BY METAL OR WOOD POSTS. THE FENCING SHOULD BE A MINIMUM OF 4 FT. HIGH AND MAY INCLUDE A TOP AND BOTTOM RAIL TO PROVIDE ADEQUATE SUPPORT, A.O.B.E.

TIME RESTRICTIONS:

- THE CONTRACTOR SHALL CONTACT THE CITY OF BUFFALO PARKS DEPARTMENT IN ROOM 502, BUFFALO CITY HALL, 65 NIAGARA SQUARE, BUFFALO, NEW YORK, (716)884-9660 TO DETERMINE THE DATES AND TIMES OF SPECIAL EVENTS FOR WHICH PERMITS HAVE BEEN ISSUED AND SHALL SCHEDULE THEIR OPERATIONS SO AS TO AVOID CONFLICTS WITH THESE EVENTS.

FLAGGING NOTES:

- FLAGGER STATIONS SHALL BE ADJACENT TO THE TRAFFIC LANES BEING CONTROLLED AND SHALL BE POSITIONED SO THAT FLAGGER VISIBILITY TO APPROACHING TRAFFIC IS OPTIMIZED. THE FLAGGER SHALL BE READILY VISIBLE TO APPROACHING TRAFFIC WELL IN EXCESS OF THE REQUIRED STOPPING SIGHT DISTANCE FOR THE PREVAILING APPROACHING SPEEDS, ACCORDINGLY, THE TANGENT DIMENSIONS ON EACH END OF THE WORK AREA SHALL BE ESTABLISHED TO ACHIEVE THE APPROPRIATE FLAGGER STATION LOCATION, A.O.B.E.
- STOP/SLOW PADDLES SHALL BE USED BY ALL FLAGGERS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE MUTCD. FLAGGER SHALL USE HAND SIGNALS IN CONJUNCTION WITH THE PADDLES AS SHOWN IN THE MUTCD.
- W20-7a "FLAGGER" SIGNS SHALL BE USED WHENEVER FLAGGING OCCURS FOR MORE THAN A BRIEF PERIOD OF TIME (15 MINUTE MAX). THE SIGN SHALL BE PROMPTLY REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC WHEN THE FLAGGING OPERATION CEASES.

LANE CLOSURES:

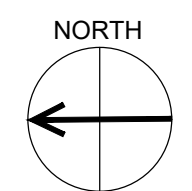
- IN THE EVENT IT IS NECESSARY TO CLOSE LANES, THE CONTRACTOR SHALL MAINTAIN ONE 10 FT WIDE (MIN.) TRAVEL LANE IN EACH DIRECTION DURING HOURS WHEN WORK IS NOT IN PROGRESS. DURING HOURS THAT WORK IS IN PROGRESS A MINIMUM OF ONE 10 FT TRAVEL LANE WITH FLAGGERS MUST BE MAINTAINED. WHENEVER POSSIBLE, TWO 10 FT LANES SHALL BE MAINTAINED.

INGRESS/EGRESS NOTES:

- THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH ACCESS TO THEIR DRIVEWAYS AS SHOWN IN TEMPORARY TRAFFIC CONTROL DETAILS AND SHALL MAINTAIN THEM THROUGHOUT ALL PHASES OF WORK AND SHALL DELINEATE THEM BY MEANS OF VERTICAL PANELS, TUBULAR MARKERS, CONES OR DRUMS, A.O.B.E.
- A MINIMUM OF ONE DRIVEWAY SHALL REMAIN OPEN TO TRAVEL LANES FOR ALL COMMERCIAL ESTABLISHMENTS AND FOR ALL MULTIPLE ACCESS PROPERTIES AT ALL TIMES.
- WHERE DIRECT ACCESS TO DRIVEWAYS IS NOT POSSIBLE DUE TO CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PLAN ALTERNATIVE MEANS OF ACCESS AND SHALL SUBMIT SUCH PLANS TO THE ENGINEER FOR APPROVAL AT LEAST 48 HOURS BEFORE ENACTMENT. OCCUPANTS SHALL HAVE 24-HOUR NOTICE OF ANY PLANS TO ALTER THEIR DRIVEWAY ACCESS. ACCESS SHALL BE RESTORED TO ALL DRIVEWAYS IMMEDIATELY FOLLOWING COMPLETION OF WORK.
- THE CONTRACTOR SHALL KEEP A MINIMUM MOVEMENT OF CONSTRUCTION VEHICLES AND EQUIPMENT IN AND OUT OF DESIGNATED TRAVEL LANES. ONLY NECESSARY OR AUTHORIZED VEHICLES AS ORDERED BY THE ENGINEER SHALL BE ALLOWED TO ENTER ANY WORK AREA.

CONSTRUCTION SIGN NOTES:

- ALL EXISTING SIGNS, INCLUDING OVERHEAD SIGNS, WHICH CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL SIGN LAYOUT SHALL BE COVERED, REMOVED, STORED OR RESET, AS APPROVED BY THE ENGINEER. ALL APPROPRIATE EXISTING SIGNS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND/OR LOCATION UNLESS OTHERWISE REMOVED, RELOCATED, OR REPLACED IN THIS CONTRACT
- SIGNS AT OR NEAR INTERSECTIONS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT A MOTORIST'S OR PEDESTRIAN'S SIGHT.
- IN CASE WHERE LANE RESTRICTIONS REDUCE THE TRAVEL LANE TO ONE LANE, SIGNS SHALL BE POSTED ON THE RIGHT SIDE OF THE ACTIVE TRAVEL LANE, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
- ALL WORK ZONE CONSTRUCTION SIGNS SHALL BE LETTER SIZE C EXCEPT AS NOTED ON SPECIFIC DETAILS OR A.O.B.E.
- CONSTRUCTION SIGNS SHALL BE FABRICATED WITH BLACK CHARACTERS ON AN ORANGE BACKGROUND UNLESS OTHERWISE SHOWN ON THE PLANS.
- EXISTING SIGNS SHALL BE MAINTAINED IN PLACE AS NECESSARY UNTIL PERMANENT REPLACEMENT SIGNS ARE INSTALLED.
- SIGN LOCATIONS ARE APPROXIMATE. THE EXACT LOCATIONS ARE SUBJECT TO APPROVAL BY ENGINEER.
- SIGN HEIGHT SHALL BE 7 FT.
- ACTUAL FIELD CONDITIONS MAY REQUIRE OTHER SIGNS AND/OR OTHER ARRANGEMENTS OF SIGNS AS DETERMINED BY THE ENGINEER.
- THE CONTRACTOR WILL BE REQUIRED TO COVER THE UNCOVERED EXISTING AND CONSTRUCTION SIGNS DURING THE PROJECT. THIS PROCESS WILL BE DIRECTED BY THE ENGINEER.
- ALL FLAG TREES SHALL HAVE A MINIMUM OF THREE(3) ORANGE FLAGS. THE BOTTOM OF THE LOWEST FLAG SHALL BE 8 FT. ABOVE PAVEMENT.
- IF OVERLAYS ARE TO BE USED TO CHANGE THE SIGN FACE LAYOUT, THE OVERLAYS SHALL BE SECURELY ATTACHED IN SUCH A MANNER AS NOT TO OBSCURE ANY PORTION OF THE SIGN FACE, THE OVERLAY SHALL BE MADE OF THE SAME REFLECTIVE SHEETING AS THE CONSTRUCTION SIGN AND SHALL BE LEGIBLE, BOTH IN DAYLIGHT AND AT NIGHT.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.
 THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.



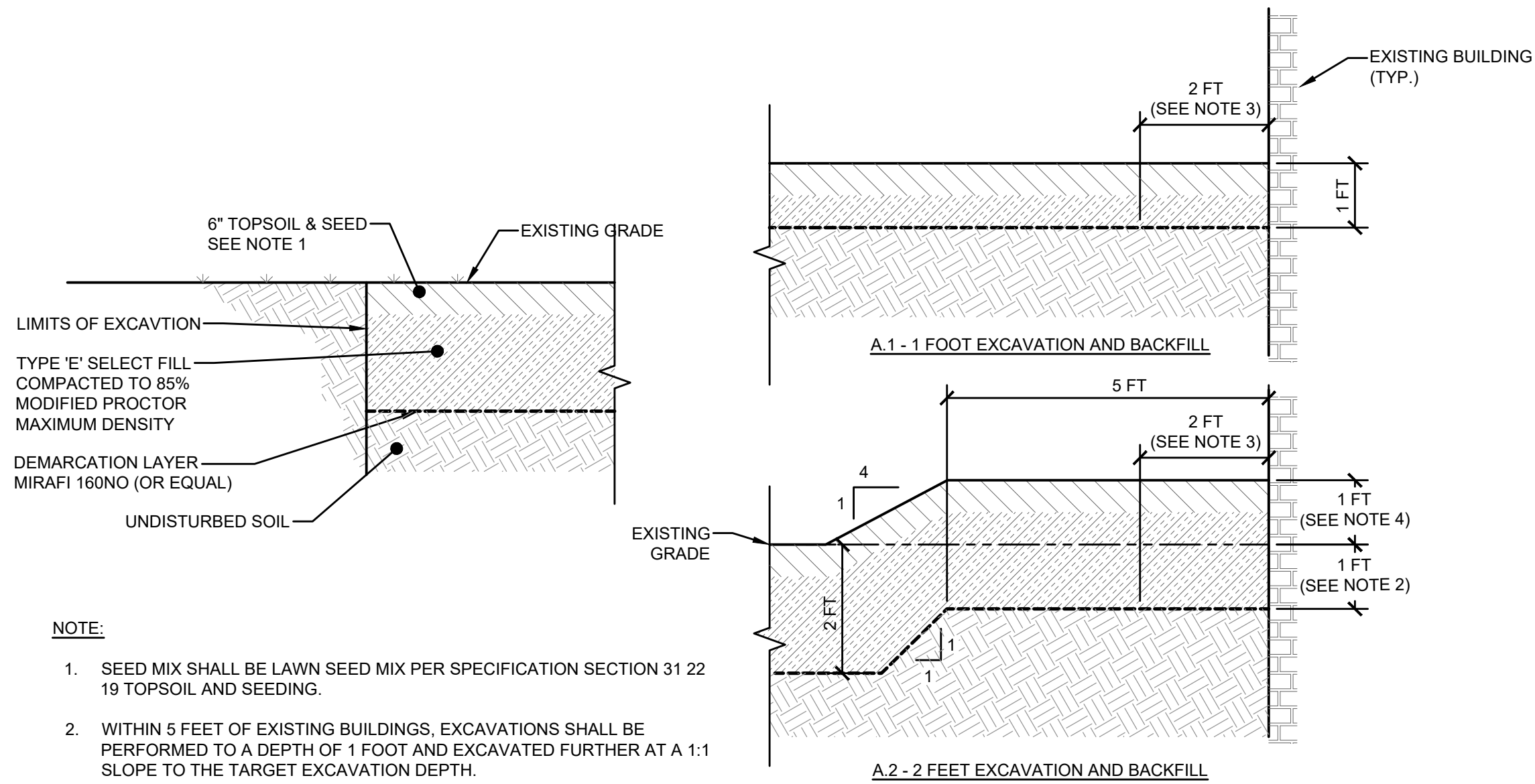
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| IN CHARGE OF | I. REKS | | | | |
| DESIGNED BY | R. DUFF | | | | |
| CHECKED BY | B. PLATT | | | | |
| DRAWN BY | D. KENT | 0 | 09/27/19 | ISSUED FOR CONSTRUCTION | DMC |
| | | NO. | DATE | REVISION | INT. |

O'BRIEN & GERE ENGINEERS, INC

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 BUFFALO, NEW YORK

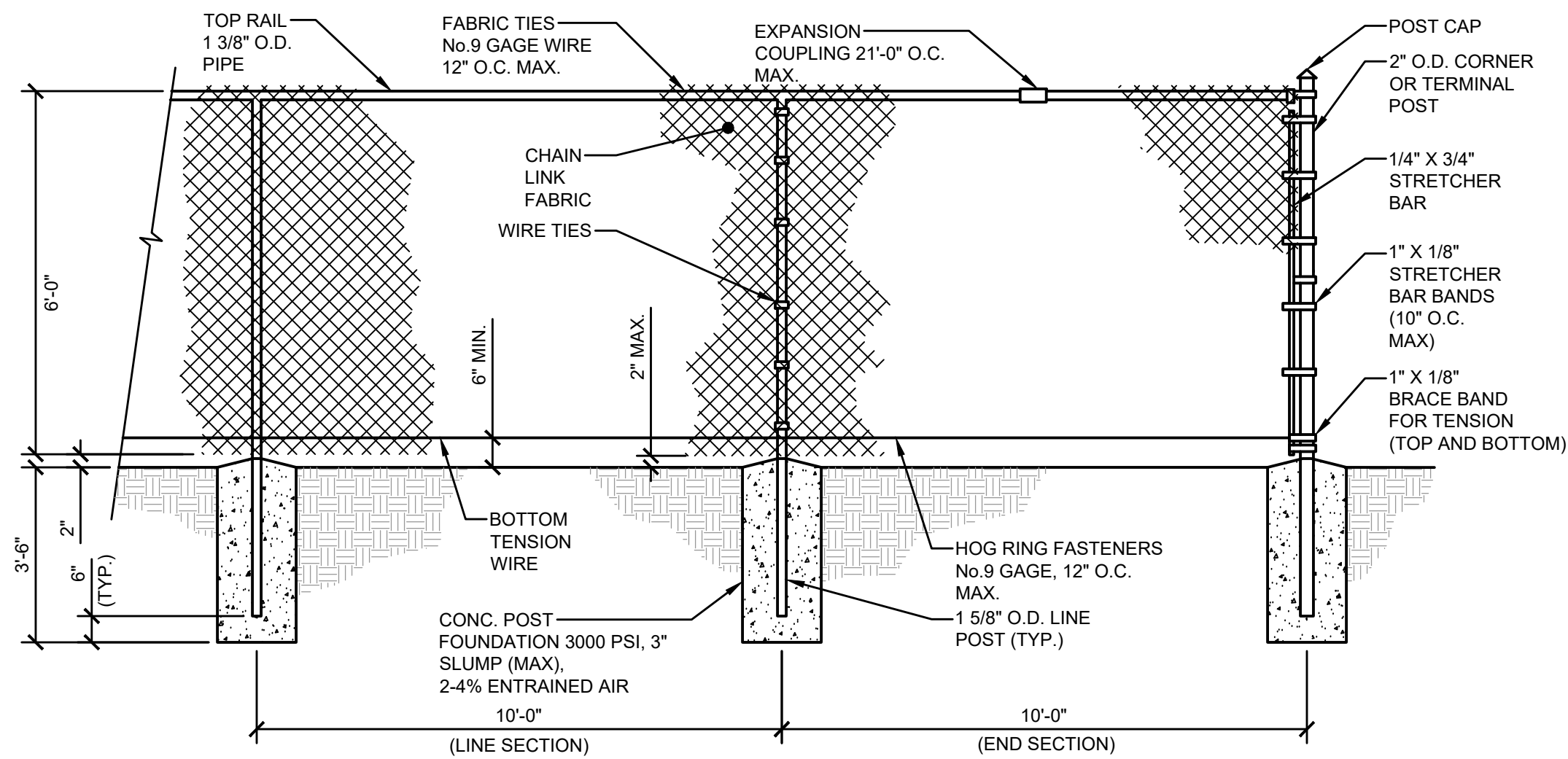
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 MAINTENANCE AND PROTECTION OF TRAFFIC PLAN

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| DATE | SEPTEMBER 2019 | |



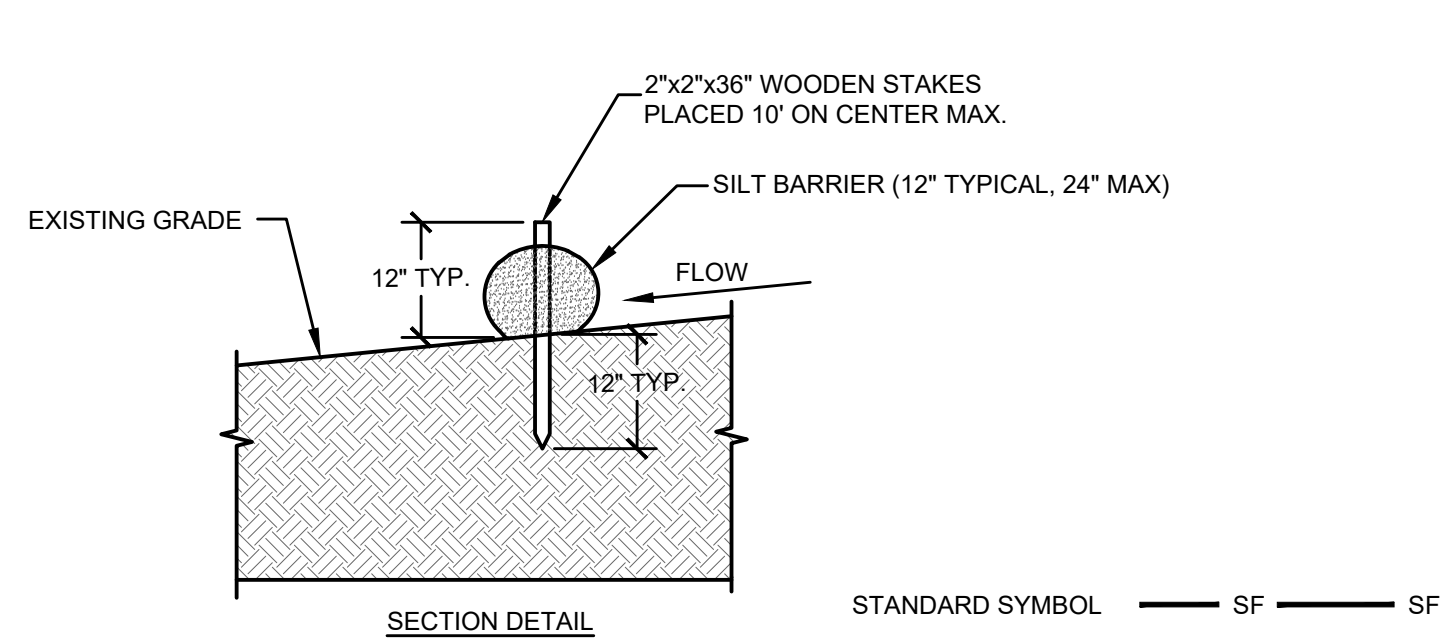
- NOTE:**
- SEED MIX SHALL BE LAWN SEED MIX PER SPECIFICATION SECTION 31 22 19 TOPSOIL AND SEEDING.
 - WITHIN 5 FEET OF EXISTING BUILDINGS, EXCAVATIONS SHALL BE PERFORMED TO A DEPTH OF 1 FOOT AND EXCAVATED FURTHER AT A 1:1 SLOPE TO THE TARGET EXCAVATION DEPTH.
 - EXCAVATIONS AND BACKFILL WITHIN 2 FEET OF EXISTING BUILDINGS SHALL BE PERFORMED BY HAND.
 - FOR AREAS WHERE EXCAVATIONS WITHIN 5 FEET OF EXISTING BUILDINGS ARE DESIGNED TO BE GREATER THAN 1 FOOT, FILL AN ADDITIONAL FOOT TO PROVIDE 2 FEET OF COVER ABOVE MATERIAL LEFT IN PLACE.

A REMEDIAL EXCAVATION AND BACKFILL DETAILS
NOT TO SCALE



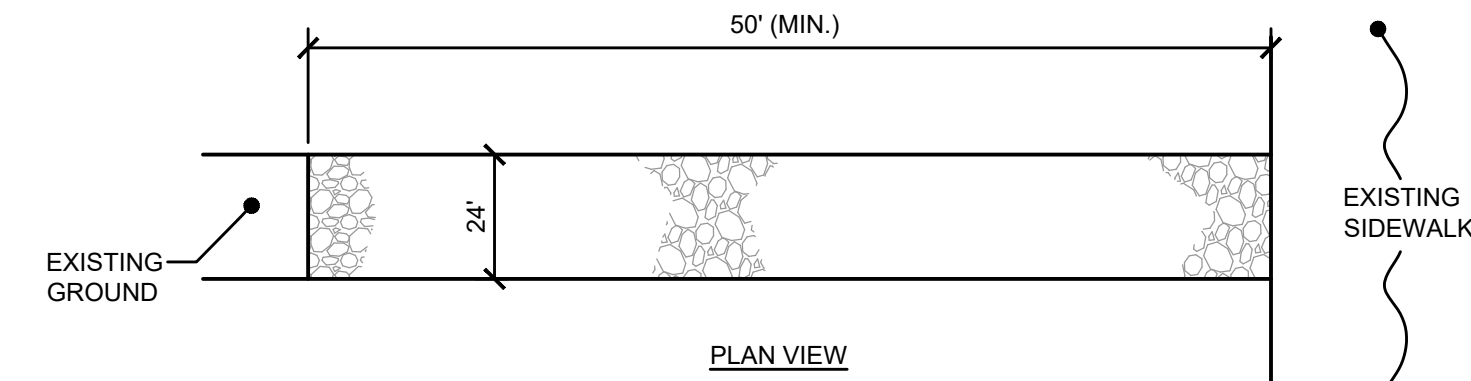
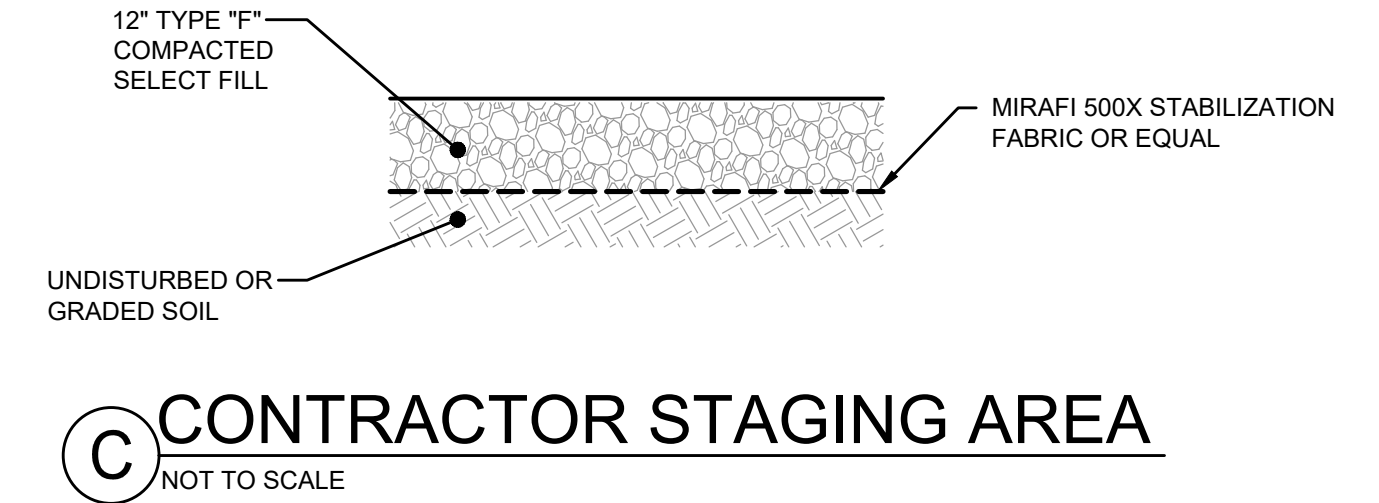
- NOTES:**
- ALL CHAIN LINK FENCING AND GATES TO BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH TECHNICAL SPECIFICATION 32 31 13 "CHAIN LINK FENCES AND GATES".

D CHAIN LINK FENCE DETAIL
NOT TO SCALE



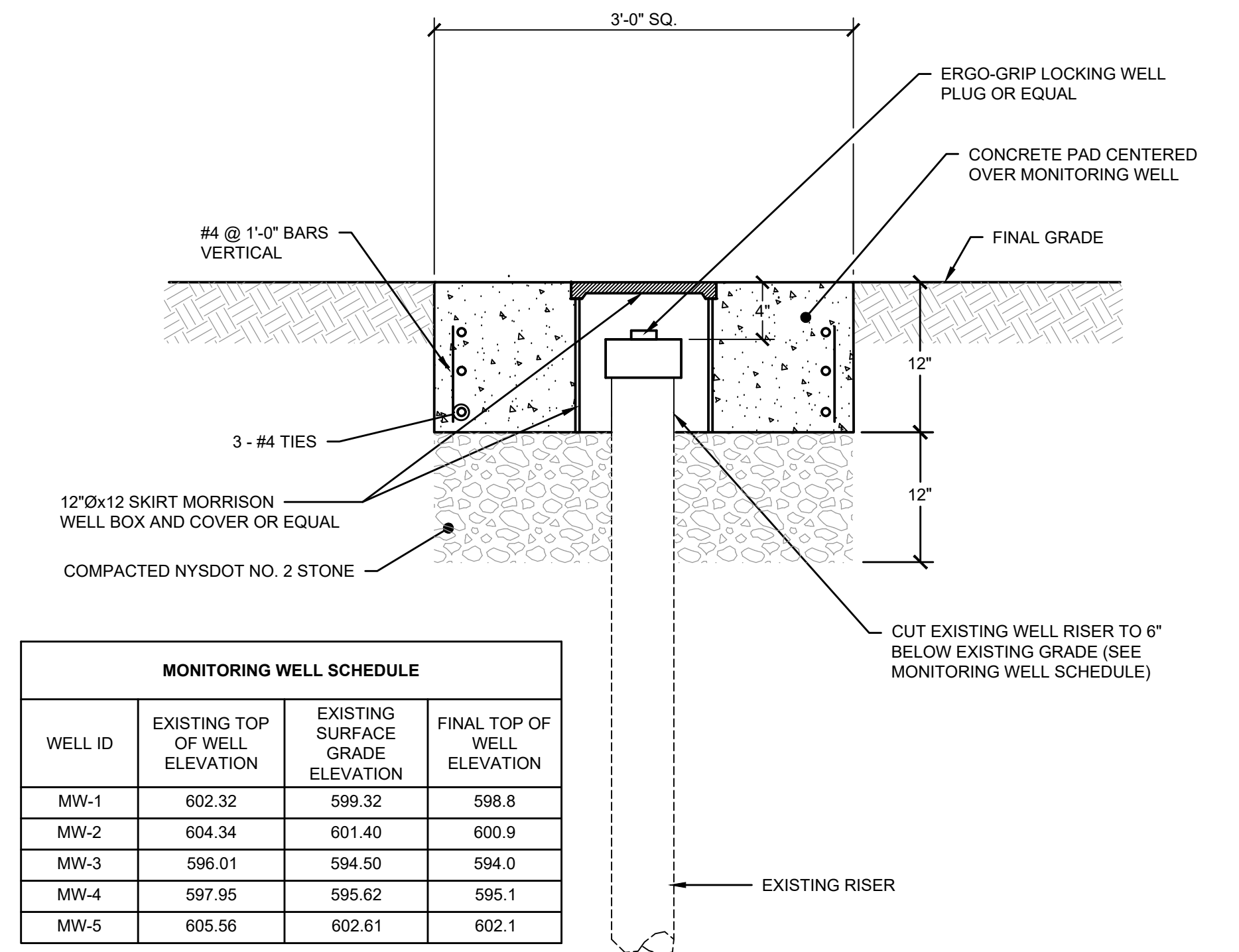
- NOTES:**
- USE FILTREXX SEDIMENT CONTROL SYSTEM BY FILTREXX LAND IMPROVEMENT SYSTEMS OR APPROVED EQUAL.
 - STAKES SHALL BE INSTALLED THROUGH THE MIDDLE OF THE SILT BARRIER AT 10' INTERVALS MAXIMUM USING HARDWOOD STAKES.
 - SILT BARRIER TO BE ALIGNED ALONG CONTOUR AS CLOSELY AS POSSIBLE.
 - BOTH ENDS OF EACH BARRIER SECTION MUST EXTEND AT LEAST 10 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.
 - SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER.
 - ANY SILT BARRIER SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPAIRED OR REPLACED.

B SILT BARRIER
NOT TO SCALE



- NOTES:**
- STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
 - LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET
 - THICKNESS - NOT LESS THAN 6".
 - WIDTH 24" MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE EGRESS OCCURS.
 - FILTER FABRIC (MIRAFI 500X OR EQUAL) - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
 - SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARDS CONSTRUCTION ACCESSES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS NOT POSSIBLE, A MOUNTABLE BERM 3' WIDE (MIN.) WITH 5:1 SLOPES WILL BE PERMITTED.
 - MAINTENANCE - THE ACCESSES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
 - WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO ADJACENT SEDIMENT BASINS.
 - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT STORMWATER POLLUTION PREVENTION PLAN.

E STABILIZED CONSTRUCTION ACCESS DETAIL
NOT TO SCALE



| MONITORING WELL SCHEDULE | | | |
|--------------------------|--------------------------------|----------------------------------|-----------------------------|
| WELL ID | EXISTING TOP OF WELL ELEVATION | EXISTING SURFACE GRADE ELEVATION | FINAL TOP OF WELL ELEVATION |
| MW-1 | 602.32 | 599.32 | 598.8 |
| MW-2 | 604.34 | 601.40 | 600.9 |
| MW-3 | 596.01 | 594.50 | 594.0 |
| MW-4 | 597.95 | 595.62 | 595.1 |
| MW-5 | 605.56 | 602.61 | 602.1 |

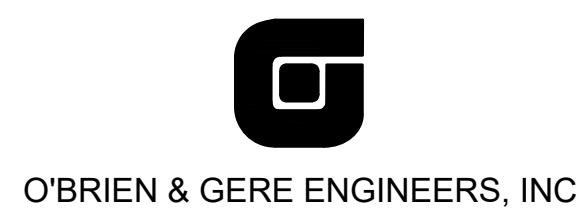
- NOTE:**
- THE CONTRACTOR SHALL CUT THE EXISTING RISER PIPE AT A DEPTH REQUIRED TO PERFORM THE WORK SHOWN HERE OR AS DIRECTED BY THE ENGINEER.

F MONITORING WELL RESTORATION DETAIL
NOT TO SCALE

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| IN CHARGE OF | I. REKS | | | | |
| DESIGNED BY | D. KAHN | | | | |
| CHECKED BY | B. PLATT | | | | |
| DRAWN BY | D. KENT | 0 | 09/27/19 | ISSUED FOR CONSTRUCTION | DMC |
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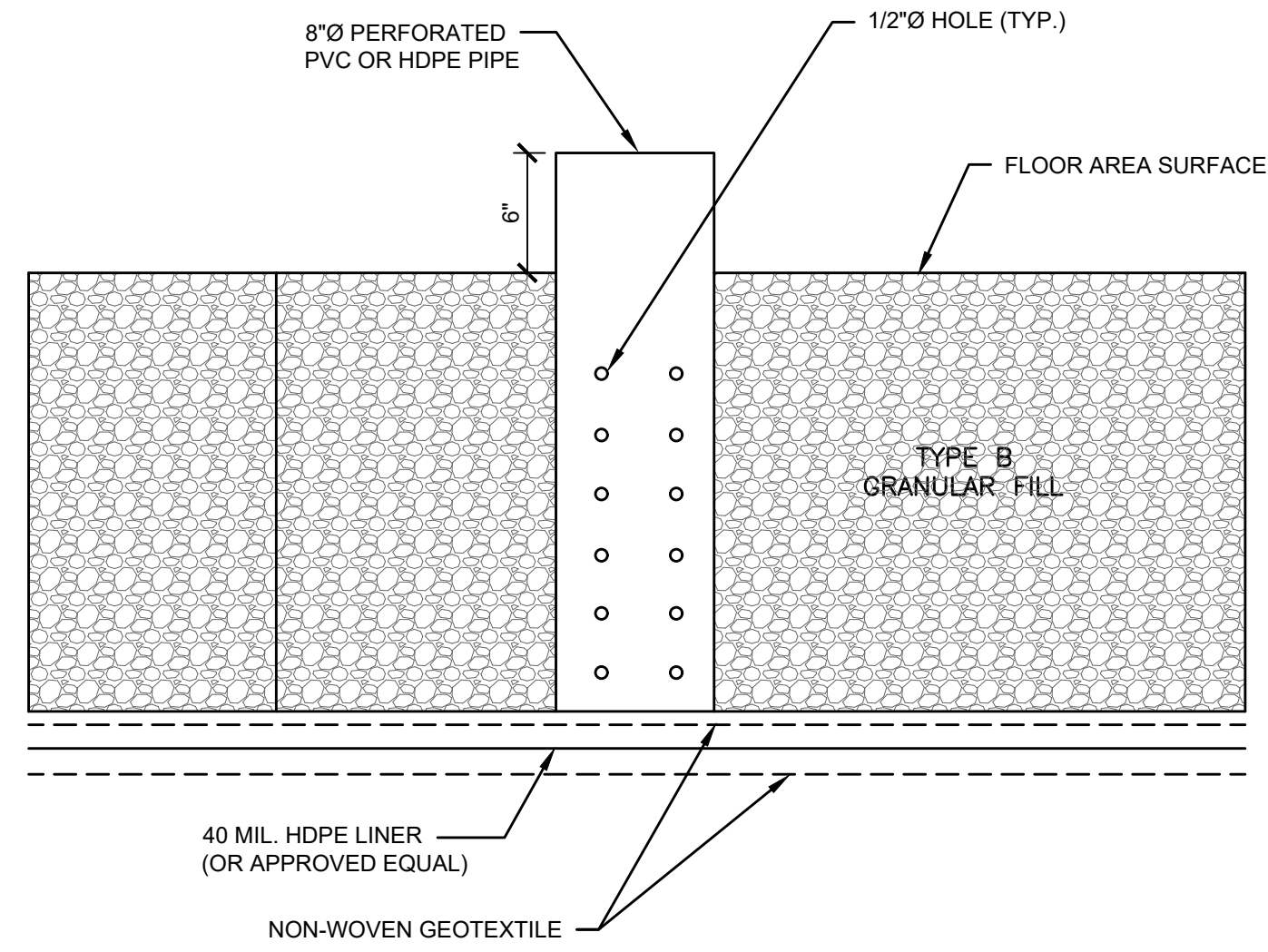
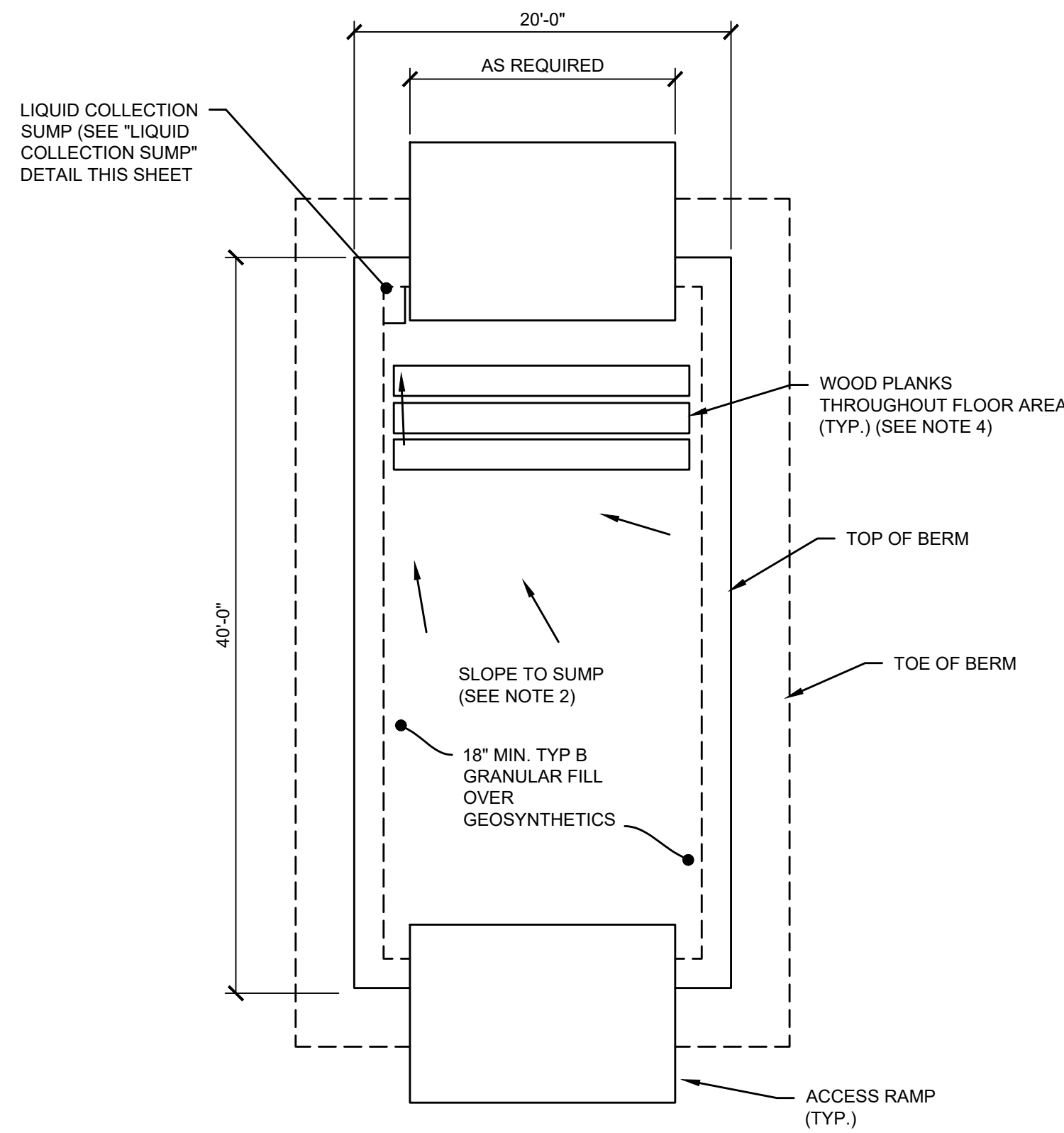


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CIVIL
MISCELLANEOUS DETAILS

FILE NO.
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SEPTEMBER 2019

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LIQUID COLLECTION SUMP DETAIL
NOT TO SCALE

DETAIL NOTES:

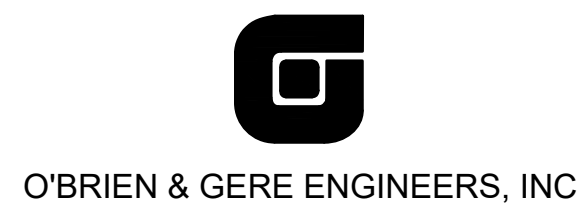
1. THE SUB-GRADE SURFACE SHALL BE UNIFORM AND FREE OF DELETERIOUS MATERIALS (E.G., SHARP STONES, WOODY DEBRIS, ETC.) THAT COULD DAMAGE THE HDPE LINER.
2. THE DECONTAMINATION PAD (INCLUDING HDPE LINER) SHALL BE SLOPED TOWARD A COLLECTION SUMP TO FACILITATE THE REMOVAL OF LIQUIDS. LIQUIDS SHALL BE COLLECTED AND HANDLED IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED "CONSTRUCTION WATER MANAGEMENT PLAN".
3. COMPACTION OF TYPE "E" SELECT FILL MATERIAL SHALL BE SUFFICIENT DENSITY TO PROVIDE A FIRM AND UNIFORM SURFACE. PLACEMENT AND COMPACTION OF FILL MATERIAL ABOVE GEOSYNTHETICS SHALL BE PERFORMED IN A MANNER AND USING APPROPRIATE EQUIPMENT THAT AVOIDS DAMAGING THE GEOSYNTHETICS.
4. WOOD PLANKS SHALL BE PLACED ABOVE THE TYPE "B" SELECT FILL LAYER THROUGHOUT THE WORKING SURFACE OF THE DECONTAMINATION PAD TO PROVIDE A STABLE SURFACE FOR VEHICLES AND EQUIPMENT TO BE DECONTAMINATED. WOOD PLANKS DAMAGED DURING USE SHALL BE REPLACED TO MAINTAIN A STABLE WORKING SURFACE.
5. PERSONNEL DECONTAMINATION AREAS SHALL BE OF SIMILAR DETAIL (DIMENSIONED AS NECESSARY) AND WITHOUT WOODEN PLANKS. PERSONNEL DECONTAMINATION PAD SHALL BE CONSTRUCTED WITHIN THE CONTAMINATION REDUCTION ZONE, AS ESTABLISHED BY THE CONTRACTOR. PERSONNEL SHALL BE DECONTAMINATED IN ACCORDANCE WITH SPECIFICATION 02006 "HEALTH AND SAFETY".
6. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, THE DECONTAMINATION PAD (INCLUDING GEOSYNTHETICS AND FILL MATERIALS) SHALL BE REMOVED BY THE CONTRACTOR AND TRANSPORTED OFFSITE FOR DISPOSAL.

A DECONTAMINATION PAD PLAN
NOT TO SCALE

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| IN CHARGE OF | I. REKS | | | | |
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| CHECKED BY | B. PLATT | | | | |
| DRAWN BY | D. KENT | 0 | 09/27/19 | ISSUED FOR CONSTRUCTION | DMC |
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CIVIL
MISCELLANEOUS DETAILS

FILE NO.
8653.71532 -
DATE
SEPTEMBER 2019

C-502



Appendix B

Technical Specifications

SECTION 00 73 10 SPECIAL PROVISIONS

SP-1 GENERAL CONSTRUCTION SEQUENCE

- A. The Contractor will be solely responsible for scheduling and coordinating completion of the work in an effective and efficient manner, and for protecting the work completed during earlier project phases, in accordance with the requirements of the Contract Documents. However, in general it is anticipated that construction of the work will be completed in the following sequence:
1. The Contractor shall set up temporary office facilities, soil stockpile, equipment staging areas, erosion and sediment controls, construction water transfer system, decontamination pad, remove existing fencing and gates (if required), perform clearing and grubbing, and install temporary access roads as may be required for the execution of the work.
 2. Prior to excavation, a licensed surveyor will stake out the limits of Toxic Substances Control Act (TSCA) regulated and non-TSCA excavation limits. Areas delineated as TSCA-soils will be targeted for removal prior to the removal of non-TSCA-soils. The Contractor shall perform excavation activities, transport and dispose of all excavated materials, install demarcation fabric, backfill, topsoil, and seed mixes in the areas of work, as shown on the Contract Drawings and/or as directed by the Engineer.
 3. The Contractor shall remove and replace temporary fencing and gates and perform all restoration of surfaces at the locations shown on the Contract Drawings or as directed by the Engineer.
 4. On completing all the work required to be performed under the Contract, the Contractor shall demobilize their equipment and facilities from the Site. At the Contractor's own expense, the areas outside the excavations altered or damaged as a consequence of their actions shall be restored to a condition equivalent to those existing prior to the work.

SP-2 WORK SCHEDULE

The work of this Contract shall be scheduled in a manner mutually acceptable to the Department, Engineer, and the Contractor. Unless otherwise especially permitted, no work shall be done between the hours of 8:00 p.m. and 7:00 a.m., nor on Sundays, July 4 (or designated holiday for July 4); Thanksgiving Day and the day after; Christmas Day and the day before; New Year's Day; and the Monday designated holidays for Memorial Day and Labor Day, except as necessary for the proper care and protection of work already performed. The Contractor will be allowed to work on Saturdays, Sundays or Holidays only with approval from the Department and Engineer. If it shall become absolutely necessary to perform work at night, the Engineer shall be informed of a reasonable time in advance of the beginning of performance of such work. Only such work shall be done at night as can be done satisfactorily and in a safe manner. Good lighting and all other necessary facilities for carrying out and inspecting the work shall be provided and maintained at all points where such work is being done. Minimum permissible illumination intensities are identified in 29 CFR 1910.120. All Contractor requests to perform night, Saturday, Sunday or Holiday work shall be made in writing to the Engineer.

SP-3 NOTICES

Whenever, under the terms of this Contract, written notice is required to be given by the Contractor to the Department, it shall be directed to:

Heidi Dudek, P.E.
Project Manager, Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7017

Heidi.dudek@dec.ny.gov

A copy shall be provided as well to the Engineer.

SP-4 SITE SECURITY

The Contractor is not required to provide a security guard but may choose to do so at their own discretion for the care and protection of the work, equipment, and material. However, no additional payment for a security guard shall be made by the Department, the cost for security being included in the Contractor's cost for mobilization.

SP-5 EMERGENCY CALLS

The Contractor shall provide the Department with the phone numbers of at least three responsible persons, to be used during non-working hours and weekends, who shall be in a position to dispatch personnel and equipment to the project site in the event of an emergency.

SP-6 PROGRESS AND COORDINATION MEETINGS

In addition to the Pre-Construction Meeting required, progress and coordination meetings will be held weekly or as directed by the Engineer with the Contractor's supervisory representatives, with decision-making authority, in attendance.

SP-7 STAGING PLAN

Prior to commencement of work, the Contractor shall develop and submit methods and sequencing of all intended operations hereinafter referred to as the Staging Plan. The Staging Plan shall include, but not be limited to, methods, plans, and drawings necessary for staging trailers and equipment, stockpiling materials, designating work zones and requirements for other construction activities. Construction activities shall not be initiated until the methods and sequencing of all operations have been reviewed by the Engineer.

SP-8 ODOR CONTROL

- A. Though not anticipated, if odors are encountered, the Contractor shall prepare an Odor Control Plan that describes provisions that will be implemented to control odor emanating from excavations and stockpiles of waste material and contaminated soil. Primary measures to be implemented to minimize generation of odors shall be to minimize, to the extent practicable, exposed surfaces of waste material and contaminated soil. Secondary measures shall include use of products, approved by the Engineer, to mask objectionable odors. The Engineer shall be sole judge as to whether or not an odor is perceptible and objectionable requiring control measures and if an Odor Control Plan is required. No additional payment shall be made to the Contractor to control odors from the excavations or waste material stockpiles.
- B. The following dust and odor control measures may be used, depending upon specific circumstances, field observations, and air monitoring results:
 1. Odor suppression foams
 2. Bio-Solve
 3. Water Spray
 4. Polyethylene sheeting (for covering excavation faces, material stockpiles, etc.)

SP-9 DUST MONITORING AND CONTROL PROGRAM

- A. Control of fugitive dust created as a result of this project shall be the obligation of the Contractor. Notwithstanding the requirements of the Contract Documents, the Contractor shall also comply with the requirements of OSHA 29 CFR 1910.1000.
- B. Dust Monitoring and Control Program shall meet all the requirements of the Community Air Monitoring Plan (CAMP) and the NYSDOH.
- C. The Contractor shall perform dust suppression activities in active work areas, staging areas, and travel ways utilized during each working day.

SP-10 BORROW MATERIALS

- A. Contractor shall submit an affidavit from the owner of the source of each type of borrow material stating that to the best of their knowledge, the site of the source material was never used as a dump site for chemical, toxic, hazardous or radioactive materials and it is not now nor ever has been listed as a suspected depository for chemical, toxic, hazardous or radioactive materials by any Federal, State or governmental agency, department, or bureau.
- B. The Contractor shall provide documentation of the source of fill to the Engineer for approval in accordance with NYSDEC's *DER-10 Technical Guidance for Site Investigation and Remediation* dated May 2010 (DER-10), which should include the following:
 - 1. The name of the person providing the documentation and relationship to the source of the fill;
 - 2. The location where the fill was obtained
 - 3. Identification of any state or local approvals as a fill source; and
 - 4. If no prior approval is available for the source, a brief history of the use of the property which is the source of the fill.
 - 5. Bills of lading shall be provided to the Engineer to document that the fill delivered was from a DER-approved source(s).
 - 6. Analytical test results as described below.
- C. The Contractor shall sample each different type of off-site material incorporated into the work at the location or locations identified by the Engineer as identified herein and in Section 5 of DER-10. The Contractor shall perform analyses for Target Compound List (TCL) volatile organic compounds (VOCs) on 2 grab samples, TCL semi volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, cyanide (total and amenable), polychlorinated biphenyls (PCBs), herbicides, pesticides, 1,4-dioxane and PFAS for one composite sample of the first 100 cubic yards from each source identified as a virgin mine or borrow pit. If the source is not 'virgin', then additional analyses will be required based on volume at the frequency identified in Table 5.4(e) of DER-10. Laboratory data shall be submitted to the Engineer for review, on the Department's behalf, immediately upon receipt and prior to use of the material on-site. The Engineer shall be the sole judge as to what constitutes each different type of material; however, the definition of "different" shall include, but not necessarily be limited to, variances in the physical properties of the same material, as well as the same material derived from separate borrow sources or separate areas in the same borrow pit.
- D. NYSDEC has recently clarified their imported soil requirements to address emerging contaminants. All imported material for use on a NYSDEC remedial site as a soil cap, soil cover, or as backfill must be tested for 1,4-dioxane and PFAS contamination in conformance with DER-10, section 5.4(e). Soil samples must be analyzed for 1,4-dioxane using EPA Method 8270 as well as the full list of PFAS compounds (currently 21) using EPA Method 537.1 (modified). For 1,4-dioxane, soil exceeding the Unrestricted SCO of 0.1 ppm must be rejected per DER 10: Appendix 5 - Allowable Constituent

Levels for Imported Fill or Soil, Subdivision 5.4(e). If PFOA or PFOS is detected in any sample at or above 1 ppb, then a soil sample must be tested by the Synthetic Precipitation Leaching Procedure (SPLP) and the leachate analyzed. If the SPLP results exceed 70 ppt combined PFOA and PFOS, then the source of backfill must be rejected. Samples may be analyzed concurrently for both PFAS in soil and in the SPLP leachate. Category B deliverables are required for PFAS analysis.

- E. If the materials are found to be unacceptable by the Engineer, the Contractor shall remove and properly dispose of the materials in accordance with all applicable Federal, State and local laws and regulations at the Contractor's expense and liability.

SP-11 MATERIALS ACCEPTABILITY TESTING

The Contractor shall be responsible for the performance and cost of all conformance testing required by the Technical Specifications including, but not limited to, physical and chemical characterization of material being imported to the site, gradation and compaction properties of soil utilized as backfill, in-place compaction tests, and health and safety monitoring. The Contractor shall include provision for the costs of these tests in the various payment items established for the particular tasks.

SP-12 UTILIZATION OF ON-SITE MATERIALS

The Contractor is not permitted to utilize on-site material for purposes of meeting Contractor's material requirements, unless shown, specified or otherwise directed by the Engineer in writing.

SP-13 EXISTING UTILITIES

- A. Special precautions shall be observed to not cause interference or damage to any existing utilities.
- B. The Contractor shall notify the proper utility companies at least seventy-two (72) hours before construction is started adjacent to such utilities. Proof of such notification shall be filed with the Engineer. Failure to provide such proof shall be cause for an automatic cessation of the work. Utilities shall be protected in the manner prescribed by the utility company. No additional compensation will be made for coordination or requirements of others relative to existing utilities.

SP-14 SUPPLEMENTAL INFORMATION

- A. Certain site and chemical information may be shown on separate sheets or made available by the Department or Engineer to Bidders, Contractors, and other interested parties. Neither such information nor the documents on which it may be shown shall be considered a part of the Contract Documents or Contract Drawings, it being understood that such information is made available only as a convenience, without express or implied representation, assurance, or guarantee that the information is adequate, complete, or correct, that it represents a true picture of the site and chemical conditions to be encountered, or that all pertinent site and chemical data in the possession of the Department or Engineer has been furnished.
- B. It shall be the Contractor's responsibility to satisfy the Contractor as to the nature, character, quality and quantity of conditions likely to be encountered. Any reliance upon the site information and chemical data available shall be at the Contractor's risk. The Contractor agrees that he shall neither have nor assert against the Department or Engineer any claim for damages for extra work or otherwise or for relief from any obligation for this Contract based upon the failure by the Department or Engineer to obtain or to furnish all site or chemical information in the Department's or Engineer's possession or based upon any inadequacy or inaccuracy of the information furnished; provided, however that the Contractor may be entitled to an adjustment in the contract price under the circumstances and to the extent provided in the Contract.

SP-15 EMERGENCY RESPONSE

In the event of any action or occurrence during the performance of the Work which causes or threatens a release of waste material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Contractor shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release and shall immediately notify the Engineer and Department, and NYSDEC's Project Engineer. The term "waste material" as used in this section shall mean: (1) any "hazardous substance" under Section 101(14) of CERCLA. 42 U.S.C. §9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA. 42 U.S.C. §9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA. 42 U.S.C. §6903(27).

SP-16 REPORTING REQUIREMENTS

- A. Contractor shall submit to Engineer and Department written progress reports, weekly or less frequently if less frequent submission is approved in writing by the Department that: (a) describe the Work that has been performed during the previous week; (b) include a summary of all results of sampling and tests and all other data received or generated by Contractor or its subcontractors or agents in the previous month; (c) identify all work plans, plans and other deliverables completed and submitted during the previous week; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next two weeks and provide other information relating to the progress of construction, including but not limited to bar charts; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the work, and a description of efforts made to mitigate those delays or anticipated delays; and (f) include any modifications to the work plans or other schedules that the Engineer has proposed to NYSDEC or that have been approved by NYSDEC. Contractor shall submit these progress reports to the Department on Friday of each work week.
- B. Contractor shall notify the Engineer and the Department of any change in the schedule described in the weekly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than two days prior to the performance of the activity.

SP-17 TRAFFIC CONTROL PLAN

- A. The Contractor is required to keep main public roads to the Site open at all times unless prior arrangements for temporary closing are made with the appropriate authorities. The cost of such traffic control is to be borne solely by the Contractor.
- B. Prior to the start of any construction activities, the Contractor and the Engineer shall make a joint condition survey of road at the entrance(s) to the Site to be utilized by the Contractor. The condition survey shall be performed using a video camera. During the video survey, the Engineer and Contractor will verbally document any pre-existing damage to the roadways and the location of the damage.

SP-18 SHOP DRAWINGS AND SAMPLES**A. Listing of Items**

Following execution of the Contract by the Contractor, the Engineer will submit to the Contractor a list of equipment, materials, and other items for which shop drawings, layouts, samples, will be required. This listing shall not be construed to be all-inclusive and may be added to, or deleted from, as may be required in the opinion of the Engineer.

B. Acceptance of Manufacturers or Vendors

The Contractor, with such promptness and in such sequence as to cause no delay in the Work, shall submit to the Engineer the name of the manufacturer or vendor for each item on the list or addition to the list submitted. No awards shall be made by the Contractor, and no work under any item shall proceed, until acceptance of the manufacturer or vendor has been given by the Engineer. Such acceptance will be only on the basis of the manufacturer's or vendor's experience and reputation and will not imply that the shop drawings or samples for the item will be acceptable. Review of shop drawings for an item will depend upon full compliance with the Contract Documents as demonstrated by material submitted.

C. Electrical Interconnections

Where the Project includes electrical equipment and electrical control systems and where the Work of the Project involves the Contractor and Subcontractor(s), it shall be the responsibility of the Contractor and Electrical Subcontractor, if applicable, to coordinate and complete power, control, and electrical signal interconnections for all equipment included in the Project.

D. Shop Drawing Submittal Requirements

Shop drawings and data shall be submitted to the Engineer for each item on the latest revised list determined from Section A. above. Submittals shall be made sufficiently in advance of the time when items included therein are to be incorporated into the Work to permit proper review, necessary revisions, and re-submittals without causing a delay in the performance of the Work.

Shop drawings shall present complete and accurate information relative to all working dimensions, equipment weights, assembly, and section views, and all necessary details pertaining to coordinating the Work of the Contract, lists of materials and finishes, parts lists and the description thereof, lists of spare parts and tools where such parts or tools are required, and any other items of information that are required to demonstrate detailed compliance with the Contract Documents. Drawings for electrical equipment shall include elementary and interconnection diagrams.

Except as otherwise specified or directed by the Department and Engineer, Contractor's submittal of Shop Drawings shall constitute Contractor's representation that submitted Shop Drawings and the specifications pertaining thereto have been thoroughly reviewed by Contractor for consistency with the Specifications and that submitted Shop Drawings strictly comply with the requirements of the Contract Documents; that the Contractor has determined and verified all quantities, dimensions, field construction criteria, materials catalog numbers, and similar data, and that Contractor has reviewed or coordinated each shop drawing with the requirements of the Work and the Contract Documents. The return to Contractor of Shop Drawings stamped "Reviewed" shall in no way relieve Contractor from sole responsibility for strictly complying with the specifications in the Contract Documents. Contractor shall reimburse Department for the costs (including labor costs) and expenses of Engineer incurred in the review of Shop Drawings which have been twice before returned marked as "Rejected" or "Resubmit".

1. Unless otherwise permitted in specific cases, all data shall be transmitted to the Engineer by the Contractor. Each shop drawing submitted shall indicate the following:
 - a. Project name and contract number
 - b. Manufacturer of the equipment
 - c. Notation as to whether original submittal or re-submittal
 - d. Date received by Contractor from manufacturer or vendor
 - e. Date submitted to Engineer

Each shop drawing submittal shall be accompanied by a transmittal letter indicating the item or items submitted, with particular reference to latest revised list of equipment, materials, and other

items described above and the appropriate section of the Contract Documents to which the items apply. The transmittal letter shall also indicate whether the submittal constitutes a complete set of drawings for the item, a partial set of drawings for which additional submittals are to be expected by the Engineer, or a partial set of drawings to complete a previous submittal. In any case, the Contractor shall indicate by the transmittal letters when the submittals for an item are intended to be complete.

Unless otherwise stated in the Special Provisions, the Contractor shall submit a copy of drawings, catalog data, and similar items for review. The submittals shall be transmitted to the Engineer for review in electronic format and will be returned to the Contractor in the same format.

If the Engineer requires hard copies, it will so inform the Contractor upon return of the material noted as "Reviewed". Additional copies of "Reviewed" shop drawings will be requested in the cases where the subject matter shown thereon requires coordination of two or more Contracts. Copies of such drawings, when received, will be retransmitted by the Engineer.

A current file of "Reviewed" shop drawings will be maintained by the Engineer and, where so stated in the Special Provisions, said current file of "Reviewed" shop drawings will be at the job site. The Contractor may have access to said "Reviewed" shop drawing file during normal office hours. It shall be the responsibility of the Contractor to avail itself of information in said "Reviewed" shop drawing file and to be aware of coordination requirements involving its work in the event it does not receive appropriate shop drawings from the Engineer.

E. Engineer's Review of Shop Drawings

The Engineer's review of shop drawings is for general compliance with the Contract Documents only and is not a complete check of the method of assembly, erection, construction or detailed review of the specifications. Such review shall in no way be construed as permitting any departure whatsoever from the Contract Documents, except where the Contractor has previously requested and received written approval of the Engineer for such departure. When requested by Contractor, proposed departures from the Contract Documents will be considered by the Department and Engineer at Contractor's expense, whether or not accepted. The cost of Engineer's conflict review and any revisions made as a result of Contractor's requested departure shall be at the expense of the Contractor. The Contractor shall reimburse Department for the referenced costs and expenses of Engineer upon demand.

Review of shop drawings by the Engineer will be limited to complete submittals except where review of a partial submittal is specifically requested by the Contractor and where such review of a partial submittal is necessary for timely completion of the Work of the Contract. Where shop drawings of related items are necessary for review of a particular submittal, the Engineer will so inform the Contractor, who will promptly submit such shop drawing of said related items.

1. Drawings and similar data will be reviewed and stamped by the Engineer as follows:
 - a. "Reviewed," if no change or rejection is made.
 - b. "Reviewed and Noted," if minor changes or additions are made but resubmittal is not considered necessary. Submittal will bear the corrective marks.
 - c. "Resubmit," if the changes requested are extensive or if re-transmittal of the submittal to another Contractor, after correction, is required. In this case, the Contractor shall resubmit the items after correction.
 - d. "Rejected," if it is considered that the data submitted cannot, with reasonable revision, meet the requirements of the Contract Drawings and Specifications.

F. Resubmittals

Any changes, other than those indicated as requested, made in drawings or other data shall be specifically brought to the attention of the Engineer upon resubmittal. Changes or additions shall not be made in, or to, "Reviewed" data without specific notice to the Engineer.

If, after reasonable correction and resubmittal of the shop drawings for an item of material or equipment, acceptance is not given, the Contractor shall submit the name of another manufacturer or vendor to supply the item required in accordance with Section B. Should progress of the Work be delayed by the changing of the manufacturer or vendor, such a cause will not be considered an extenuating circumstance beyond the control of the Contractor, and charges for delay if otherwise applicable, will be levied and shall be born solely by the Contractor.

G. Samples

Samples shall be submitted to the Engineer as required on the latest revised list determined from Section A. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the Work, so that rejections thereof will not cause delay. A letter of transmittal from the Contractor requesting review shall accompany such samples.

The procedures set forth in Sections E and F above for shop drawings shall be used for processing samples.

SP-19 RETENTION OF RECORDS

Contractor and its agents and subcontractors shall preserve all documents, records, and information of whatever kind, nature or description relating to the performance of the Work for ten (10) years after Substantial Completion, as defined by the Contract Documents.

SP-20 CONTRACTORS INSURANCE

The following organizations are to be included on the indicated policies as additional insured:

1. New York State Department of Environmental Conservation
2. O'Brien & Gere Engineers, Inc.
3. City of Buffalo, New York
4. Parsons Engineering of New York, Inc.

The following are the mailing addresses for the respective additional insured:

New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7017

O'Brien & Gere Engineers, Inc.
333 West Washington St.
PO Box 4873
Syracuse, NY 13221-4873

City of Buffalo
 65 Niagara Sq.
 Buffalo, NY 14202

Parsons Engineering of New York, Inc.
 100 High Street
 Boston, Massachusetts 02110

SP-21 SPILL MANAGEMENT

Solvents, oils, and other materials used in the course of the Work which may be harmful to the environment shall be properly disposed of in appropriate containers and removed from the site. Any soils contaminated by the Contractor's operation shall be removed and replaced with clean backfill or topsoil upon the direction of the Engineer at the Contractor's expense. Such materials and contaminated soils shall be disposed of in accordance with state and local requirements.

New York State Department of Environmental Conservation Petroleum Bulk Storage Law governing (Article 17, Title 10 of the Environmental Conservation Law) regulates the storage and handling of petroleum products. Any person with the knowledge of a leak or spill must report it within 2 hours to the NYSDEC. The spill hotline number is 800-457-7362.

SP-22 PROJECT PHOTOGRAPHS

A minimum of 50 digital photographs shall be taken of preconstruction and final construction conditions. The final photographs shall be taken from the same locations as the preconstruction photographs. One each of the pre- and final construction photographs shall be aerial. The altitude shall be such to obtain maximum coverage of the project.

Digital photographs or video of the construction zones shall be recorded at a minimum frequency of once per week. Narrative shall be provided identifying locations, salient features, compass bearing, etc. Upon the completion of the project, the Contractor shall submit a complete file of the individual digital project photographs to the Engineer.

SP-23 VIBRATION MINIMIZATION AND MONITORING PLAN

It shall be the responsibility of the Engineer to implement a vibration monitoring program, where vibrations associated with construction activities shall be monitored and recorded to protect adjacent structures and action levels (peak particle velocities) will be prescribed. One Blastmate III (or approved equivalent) monitoring device will be placed at the eastern end of the wall, the western end of the wall, and within 20 feet of the work zone (total of 3 monitors) for that day. The vibration monitor shall be moved along the wall as excavation progresses. The monitoring device will be equipped with an alarm system that will notify the Engineer and Contractor immediately in the event that the peak particle velocity exceeds 0.5 in/sec. When peak particle velocities exceed 0.5 in/sec, the Engineer shall notify the Contractor, and a plan will be developed to mitigate vibrations during subsequent work. If peak particle velocities reach 2.0 in/sec, the Contractor shall cease vibration inducing operations immediately until further notice from the Department and the Engineer. Contractor identified modifications to the construction activity (e.g., equipment used to perform the work or approach to performing work) may be required to reduce vibrations. The Contractor shall provide in their daily report any corrective actions undertaken to reduce peak particle velocities following an exceedance.

SECTION 01 35 29 HEALTH AND SAFETY

PART 1 – GENERAL

1.1 SUMMARY

- A. Contractor shall be solely responsible for the protection of the personnel working on the site and the residents living in the vicinity of the site from exposure to on-site contaminants generated or released as a result of the Contractor's work on site.
- B. Contractor shall prepare, submit to Engineer, and implement a site-specific health and safety plan (HASP) to protect the personnel working on the site, the residents living in the vicinity of the site, and those occupying adjacent properties from exposure to on-site contaminants encountered, generated, or released as a result of the Contractor's work on site.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Community Air Monitoring Plan (CAMP)

1.3 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. National Institute for Occupational Safety and Health (NIOSH), United States Department of Health and Human Services
 - a. 85-115 - Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities
 - b. NIOSH Manual of Analytical Methods – analysis for total particulate ($\mu\text{g}/\text{m}^3$) method 0500
 - 2. Code of Federal Regulations (CFR)
 - a. 29 CFR 1910 and 1926 - OSHA Safety and Health Standards, and citations adopted by reference
 - b. OSHA Analytical Methods Manual, Part I, Volume 3, Methods 55-80 for Polynuclear Aromatic Hydrocarbons
 - c. 49 CFR Parts 171-178 - Department of Transportation (DOT) Hazardous Materials Regulations
 - 3. United States Environmental Protection Agency (USEPA)
 - a. Standard Operating Safety Guides
 - b. EPA Analytical Method TO-15 (mini cans)
 - 4. American Conference of Governmental Industrial Hygienists (ACGIH)
 - a. ACGIH Threshold Limit Values and Biological Exposure Indices

1.4 SUBMITTALS

- A. The following items shall be submitted:
 - 1. Site Specific Health and Safety Plan including, but not limited to:
 - a. Contractor Organizational Chart
 - b. Results of Health and Safety Risk Analysis performed by the Contractor

- c. Employee Protection Plan
 - d. Vapor Emission Response Plan
 - e. Employee Training and Experience
 - f. Summary of Medical Surveillance Program
 - g. List of Standard Operating Procedures incorporated into the HASP
 - h. A method to monitor entry and exit from the work site
 - i. Personnel and Equipment Decontamination Procedures
 - j. A Spill Containment Program
 - k. Emergency Response Plan and Emergency Reporting Procedures
 - l. Fire Emergency Protection Plan
 - m. Confined Space Entry Procedures
2. Certificates of completion of Health and Safety Training as required by 29 CFR 1910.120(e).
 3. Resumes of the Contractor's Project Manager, Field Supervisor, and of the health and safety staff expected to work at this site.
 4. Evidence of coordination for emergency response with local police, fire, medical and hazardous materials responders.
 5. Name and location of proposed permitted off-site disposal facility for used personal protective equipment (PPE).
 6. List of authorized personnel authorized to enter the site.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The responsibility for development, implementation, and enforcement of the HASP lies with the Contractor and his health and safety personnel.
- B. Prior to commencement of on-site activities, the Contractor shall prepare a site-specific HASP, which shall be implemented during performance of the work. The HASP shall be prepared and administered by a Certified Industrial Hygienist (CIH). All pertinent aspects of applicable regulations shall be addressed. The protective measures in the HASP shall be consistent with applicable protocols and provisions of the OSHA regulations and other applicable regulations. The HASP developed by the Contractor shall include, but not be limited to, employee air monitoring, programs for accident prevention, personnel protection, and emergency response/contingency planning. A corporate safety and health manual may be furnished along with the HASP but this shall not satisfy the site-specific HASP requirement.
- C. At least one copy of the HASP shall be present at the site at all times.

PART 3 - EXECUTION

3.1 ORGANIZATIONAL RESPONSIBILITIES

- A. Key Personnel and Organizational Chart. The lines of authority, responsibility and communication shall be presented in the HASP. The Contractor must provide an organization chart and resumes of the Contractor's key personnel involved in all phases of the Site construction activities. This chart must include Senior-Level Management, Project Manager, CIH, independent third-party Site Health and Safety Officer (HSO), Field Supervisor, and Foreman Personnel. Resumes are required for the Project Manager, Field Supervisor, Health and Safety Officer, and Health and Safety Staff.
- B. Site Health and Safety Officer (HSO). The Contractor's CIH must identify and hire an independent third-party Site Health and Safety Officer (HSO) for the project. That individual must be responsible to the Contractor's CIH and shall have the authority and knowledge necessary to implement the site Health and Safety Plan (HASP) and verify compliance with applicable safety and health requirements.
 1. The HSO shall have the following responsibilities and authority to perform the following functions:
 - a. Be present during site operations.
 - b. Have the authority to enforce the HASP and stop operations if personnel safety and health may be jeopardized.
 - c. Evaluate health monitoring data and make necessary field decisions regarding safety and health.
 - d. Initiate evacuation of the site if necessary.
 2. The HSO shall meet the following minimum qualifications:
 - a. HSO shall possess a sound working knowledge of State and Federal occupational safety and health regulations and shall have formal educational training in occupational safety and health. Documentation shall be provided that the HSO has completed the 40 hr. OSHA Training Course, the 8 hr. OSHA Supervisor's Training Course and met the field experience requirements.
 - b. Have documented experience that the HSO has worked on two (2) projects similar in nature to this one.

3.2 RISK ANALYSIS

- A. Health and Safety Evaluation. The Contractor shall perform and provide in the HASP the results of a health and safety risk analysis for each location and operation to be performed.
- B. The risk analysis shall be based upon the best information available regarding the contaminants and conditions present at the site as well as the practices and tools to be applied in the operation and shall include but not be limited to the following:
 1. Overview of the following information:
 - a. Location, site topography, accessibility, and size of the site.
 - b. Description of the site operation and tasks to be performed.
 - c. Approximate duration of the operation and of each task.
 - d. Chemical and physical properties of the known or suspected hazardous substances and health hazards.
 - e. Known or potential safety hazards associated with each task.

- f. Known or suspected pathways of hazardous substance dispersion pertinent to the operation and tasks performed.
- 2. An evaluation of the known or suspected contaminants and conditions that may pose inhalation, skin absorption/contact or ingestion hazards. A copy of the Material Safety Data Sheet (MSDS), chemical fact sheet, or other relevant information shall be included in the Site-specific HASP prepared by the Contractor.
- 3. An evaluation of known or potential safety and health hazards associated with each task on the site.
- 4. An evaluation of engineering and work practice controls to be applied to minimize potential harm to the community and employees on site from hazardous substances and activities during completion of the task.
 - a. Engineering and Work Practice Controls. The Contractor must consider the need to apply engineering and/or work practice controls as a means of protecting the community and personnel in the performance of site specific tasks.
 - 1) When practicable, engineering controls shall be implemented to reduce and maintain community and employee exposures to or below acceptable levels for those tasks with known or suspected hazards.
 - 2) Work practice controls shall be applied when engineering controls are deemed impractical and shall be incorporated as site-specific standard operating procedures (SOP) for personal precautions and routine operations.
- 5. An evaluation of the status and capabilities of emergency response teams.

3.3 MEANS TO CONTROL EMPLOYEE AND COMMUNITY EXPOSURE

A. Employee Protection Plan

- 1. The Contractor shall prepare and implement an Employee Protection Plan (EPP) in accordance with 29 CFR 1910.120(h). The EPP shall be developed to specify and evaluate the engineering and work practice controls to be implemented to minimize exposure of employees working on the site. The EPP shall be incorporated into the site HASP as a separate section of that document.

B. Employee and Community Air Monitoring Plans

- 1. The Contractor shall prepare and implement an Employee Air Monitoring Plan (EAMP) to identify times of elevated airborne contaminant concentrations, to determine the level of the concentrations relative to background, and to respond to elevated levels. The Contractor shall provide the personnel, instruments, and materials necessary to perform such air monitoring and to implement the response. The identity of the individual responsible for administering the program shall be included in the site organization chart. In addition to the odor control requirements specified in the Special Provisions, the Contractor shall define specific air monitoring methods, sampling media, and sample analyses to be implemented during construction of the remedial action at the Site to protect Employees and others on site. The EAMP shall include proposed responses to levels above the Contractor's action levels. The EAMP shall be incorporated into the site HASP as a separate section of that document.

C. Community Air Monitoring and Response

- 1. The Engineer shall implement a Community Air Monitoring Plan (CAMP) using portable aerosol monitors for particulates during the Construction Contractor's invasive work. Also, observation of odor at the site perimeter and in the direction of off-site receptors will be documented and reported to the NYSDEC representative. Although not responsible to perform the community air monitoring,

the Construction Contractor shall be responsible for conducting the construction work so that the level of particulate matter less than 10 micrometers in diameter (PM-10) leaving the downwind side of the site (if any) shall be maintained below 150 $\mu\text{g}/\text{m}^3$ above the upwind particulate level, based on a 15 minute averaging period. The Contractor shall provide means to minimize odor and implement additional odor controls to reduce objectionable odors, if observed and deemed to be objectionable by the Engineer, when necessary.

2. Particulate Emission Response

- a. Actions shall be initiated by the Contractor to reduce the particulate emissions from the work area whenever the particulate levels exceed 100 $\mu\text{g}/\text{m}^3$ above the upwind particulate level (e.g. background) at the perimeter of the work area, as measured by the Engineer. Particulate levels exceeding 150 $\mu\text{g}/\text{m}^3$ above the upwind particulate level at the perimeter of the work area will require that work activities be halted by the Contractor. If particulate levels in the work zone or downwind location are below or decrease to below 150 $\mu\text{g}/\text{m}^3$ over background, work activities can resume with continued monitoring.

3.4 TRAINING

A. Training Requirements for On-Site Personnel

1. The Contractor will ensure that all employees engaged in on-site activities which expose or potentially expose them to hazardous substances and/or health hazards have satisfied the general and site specific training requirements of 29 CFR 1910.120 prior to the start of the employee's activities at the site.
2. Employees who have not received the required training prior to the start of the employee's site operations are not to engage in site operations until such training has been completed.
3. The Contractor shall provide written certification of completed training and acquired experience for all employees requiring training and/or experience. Such certification shall be supplied prior to the start of the employee's site operations.

B. Personal Protective Equipment and Levels of Protection

1. The Contractor shall provide and use, under each item of work requiring such protection, personal protective equipment (PPE) under the provisions of 29 CFR 1910.132 and 29 CFR 1910.120.
2. The Contractor shall include in the HASP a list of components for each protective ensemble, the LOP selected for each task, the rationale for each task-specific selection, any contaminant action levels to be followed in LOP decision making.
3. All used PPE shall be properly disposed of by the Contractor at a permitted off-site facility approved by the Department. Used PPE shall not be disposed of on Site nor shall it be burned. The Contractor shall be responsible for characterizing used PPE, decontamination (as necessary), temporary storage, transportation, and disposal of used PPE in accordance with applicable Federal, State, and local regulations.

3.5 MEDICAL SURVEILLANCE

A. Medical Surveillance Program. The Contractor shall show evidence of a medical surveillance program (MSP) for employees engaged in on-site operations, consistent with 29 CFR 1910.120(f).

1. The MSP shall include physical examinations supervised or administered by a board-certified physician familiar with occupational medicine. The Contractor shall include the name and business address of the certified physician in the HASP.
2. The Contractor shall address the need for personal exposure monitoring and post exposure medical screening in the HASP and include a summary of applicable monitoring and screening.

B. Personnel Certification

1. The Contractor shall provide written approval by a certified physician of the medical fitness for work of all employees designated to engage in on-site operations, prior to the employee's start of those operations.

C. Employee Heat and Cold Stress Prevention

1. As dictated by seasonal conditions, the Contractor shall implement an employee heat or cold stress prevention program during site operations and shall incorporate the program into the site HASP.

3.6 SITE STANDARD OPERATING PROCEDURES

- A. The Contractor shall be responsible for developing and implementing necessary standard operating procedures (SOP) for site operations.

3.7 SITE CONTROL

A. Work Zones

1. The Contractor shall be responsible for conducting operations at the site in such a controlled fashion as to minimize the possibility of employee and community contact with contaminants present on the site and to prevent the removal of contaminants generated on the site by personnel or equipment leaving the site.
2. The Contractor shall delineate work zones in which specific operations or tasks will occur and shall institute specific site entry, and decontamination procedures at Contractor designated control points in accordance with provisions set forth in 29 CFR 1910.120 and HWR 89-4031. At a minimum, three (3) work zones will be established to perform this work - an exclusion/contamination zone, a contamination reduction zone, and a support/clean zone. A map or diagram showing the work zones and a description of the site control plan shall be included in the HASP.

B. Routine and Emergency Communications

1. The Contractor shall incorporate plans for routine and emergency communications appropriate for the site and project in the HASP.

C. Daily Visitor Log

1. The Contractor, in accordance with his security plan shall keep a daily visitor log, copies to be provided to the Department/Engineer upon request. A time clock shall be used to record the arrival and departure times. This log shall include:
 - a. Person visiting the site
 - b. Affiliation
 - c. Date
 - d. Arrival time
 - e. Departure time
 - f. Purpose of visit

D. Personnel

1. The Contractor shall provide the Department and Engineer a list of all Contractor and subcontractor personnel who are authorized to enter the site prior to the start of operations, updating the list as necessary. No unauthorized persons shall be permitted to enter the site.

E. Other

1. The Contractor shall be responsible for conducting operations in accordance with Federal, State and local regulations and requirements for storage of the Contractor's hazardous materials (i.e. gasoline, lube oils, etc.) on-site, including locating staging areas, labeling/signage, etc.
2. The Contractor shall use a "buddy system" as required.

3.8 DECONTAMINATION

- A. The Contractor shall develop and implement personnel and equipment decontamination procedures appropriate for site specific locations and activities and include those procedures in the HASP. The procedures shall include, but not necessarily be limited to, the necessary equipment and personnel and the steps to achieve contractor's specified level of decontamination, provisions for any personnel protection, and a discussion or diagram outlining the steps or stations in the procedures. The procedures must include containment and removal of any decontamination solutions and spent disposable protective apparel.
- B. Decontamination shall be conducted in accordance with 29 CFR 1910.120 (k) and shall minimize employee contact with hazardous substances or with equipment that has contacted hazardous substances as well as minimize off-site transport of contamination. The Contractor shall clean roadways as necessary to prevent contamination being transported from the work areas into other parts of the plant or off-site by construction or plant traffic.
- C. The Contractor shall provide provisions to facilitate personal hygiene at breaks and following daily operations.

3.9 SPILL CONTAINMENT

- A. The Contractor shall incorporate a spill containment program prepared in accordance with 29 CFR 1910.120 in the HASP.

3.10 CONTINGENCY PLANNING

- A. Emergency Response Plan. Prior to the start of site operations, the Contractor shall develop and implement an emergency response plan (ERP) to handle potential on-site emergencies. The ERP shall be incorporated into the site HASP as a separate section of that document and shall be periodically reviewed and, as necessary, amended to keep it current with new or changing site conditions or information.
 - 1. The Contractor shall address the following requirements:
 - a. Prior to the start of site operations, the Contractor shall attend any and all meetings necessary with local officials and/or those responsible for local emergency management and public safety (to include fire, police, hazardous material response teams, hospitals, and local health officials) for the purpose of coordinating the site-specific ERP with any emergency response efforts that would be performed by such agencies.
 - b. The Contractor shall contact the local medical facility selected for inclusion into the HASP and the ERP to ensure that said facility is willing and is capable of providing that medical support necessary to satisfy those anticipated hazards and emergencies detailed in the HASP and the ERP. Written verification of such contact, including the name of the individual contacted, shall be furnished to the Department and Engineer prior to the start of site operations.
- B. Accident and Exposure Reports
 - 1. The Contractor shall notify the Engineer of all on-site accidents at the time of occurrence and follow up in writing within 24 hours. This notification shall include, but not be limited to, the date, time and identity of individual(s) involved in the accident, witnesses to the accident, the nature of the accident, the actions taken to treat the victim(s), and the steps taken to prevent recurrence.
 - 2. The Contractor shall notify the Engineer of all person(s) exposed at levels exceeding OSHA standards at the time of occurrence or determination and follow up in writing within 24 hours. This notification shall include, but not be limited to, the date, time, and identity of individual(s) involved in the exposure, witnesses to the exposure, the nature of the exposure episode, what the

individual(s) were exposed to, the personal protective equipment worn during the exposure, and the steps taken to prevent recurrence.

3.11 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall develop procedures for handling and responding to small and large fires. This Fire Protection Plan (FPP) shall be included in the HASP as a separate document. The FPP shall include procedures for requesting emergency assistance and notifying the Department and Engineer of the incident. The Contractor shall insure that fire traffic lanes are available (not blocked) and all fire exits are properly marked.

3.12 CONFINED SPACE OPERATIONS

- A. Standard Operating Procedures
 - 1. Should site operations include activities within confined spaces, the Contractor shall develop and implement SOPs in accordance with 29 CFR 1910.146 and shall incorporate them in the HASP as a separate section of that document.

3.13 DRUM AND CONTAINER HANDLING OPERATIONS

- A. Standard Operating Procedures
 - 1. Should site operations include activities requiring the handling of drums and containers, (both encountered on-site and brought on-site), the Contractor shall develop and implement SOP's in accordance with 29 CFR 1910.120(j) and incorporate them in the HASP.

3.14 OPERATIONS WITHIN AND ADJACENT TO POWER LINES

- A. Standard Operating Procedures
 - 1. Should site operations include activities requiring the operation of cranes or derricks within or adjacent to power lines, the Contractor shall develop and implement SOP's in accordance with 29 CFR 1926.550(a) - Cranes and Derricks and incorporate them in the HASP.
 - 2. The requirements of the local electric utility shall also be incorporated into the HASP.

3.15 OPERATIONS NEAR EXISTING UTILITIES

- A. Standard Operating Procedures
 - 1. In advance of the work, the Contractor shall identify and locate buried utilities in the area of work.
 - 2. Special precautions shall be observed to not cause interference or damage to any existing utilities.
 - 3. The Contractor shall notify the proper utility companies at least seventy-two (72) hours before construction is started adjacent to such utilities. Utilities shall be protected in the manner prescribed by the utility company.

END OF SECTION

SECTION 02 21 13 SITE SURVEYING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes furnishing all labor, material, and equipment required to perform and provide complete surveys, as specified herein or as specified by the Engineer.

1.2 SUBMITTALS

- A. The following items shall be submitted:
1. Surveyor Qualifications: Prior to the start of any survey work, submit the name, address, State registration number, and telephone number of the surveyor and other persons proposed for survey-related duties to the Engineer for approval.
 2. All survey submittals shall be signed by a surveyor licensed in New York State.
 3. Provide periodic survey calculations required to support requests for payments and verification of volumes and areas.
 4. Record Drawings
 - a. Topographic maps – prepare and submit:
 - 1) After excavation showing excavation depths (elevation data) and horizontal limits of each excavation.
 5. Submit the following with each record drawing submittal.
 - a. Records
 - 1) AutoCad Civil3D 2016 (or newer) electronic files
 - 2) Field Data
 - 3) Coordinate List

1.3 QUALITY ASSURANCE

- A. All work in this section shall be performed by a surveyor licensed in New York State.
- B. Mapping shall conform to the National Map Accuracy Specifications and shall bear the seal of a licensed land surveyor registered in New York State. The surveyor shall also have a minimum of two years' experience in construction surveying, and layout and maintenance of record construction drawings, with a record of performing horizontal and vertical control requirements as stated in this section.

PART 2 - PRODUCTS

2.1 SUPPLEMENTAL RECORD DRAWINGS

- A. Contractor shall provide a reproducible base map at a scale of 1:20 and with decimal units upon which the Contractor shall plot the required survey information for each required submittal.
- B. Map shall contain a title block with the name and address of the Contractor and the signature of the registered surveyor.
- C. Drawings shall include:
 - 1. Labeled contour lines
 - 2. Property line locations
 - 3. Horizontal grid systems
 - 4. Cross sections and details modified to show "as-built" conditions
 - 5. Utility pipe invert elevations and locations
 - 6. Details and cross sections not on original drawings
 - 7. Field changes of elevations, dimensions, and details
 - 8. Planimetric features (e.g., edge of pavement)
- D. Indicate on drawings locations of all physical features on site, including utilities, buildings, roadways, catch basins, manholes, utility poles, fences, gates, drainage ditches, monitoring wells, light poles, trees, and bench marks.
- E. Indicate excavation limits on drawings for both the proposed limits (based on Contract Drawings) and completed limits.
- F. Electronic versions in PDF and AutoCAD format shall be provided. PDF version shall be stamped by a licensed surveyor.

2.2 FIELD DATA

- A. Field survey notes
 - 1. Copy of field notes, notations, and descriptions or total station electronic files used and compiled during the field survey

2.3 COORDINATE LIST

- A. Final coordinate list of all survey points with specific coordinates and elevations.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The surveyor/Contractor shall verify site conditions within the project area and locations of site reference and survey control points prior to starting work. The surveyor/Contractor shall promptly notify the Engineer of any discrepancies discovered.
- B. The surveyor/Contractor shall locate all utilities in the work area. The surveyor/Contractor shall verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during work.

3.2 HORIZONTAL AND VERTICAL CONTROL

- A. The Contractor shall take all reasonable measures to protect site reference points prior to starting and during site work.
- B. Immediately notify the Engineer of loss, damage, or destruction of any reference point, or any relocation required because of changes in grade or other reasons.
- C. X, Y, and Z coordinates of bench marks and control points shall be determined and recorded with a maximum permissible error of 0.01 ft vertical and 0.001 ft horizontal.
- D. The Contractor shall provide control points at each location of work using closed traverse and leveling loops.
- E. The Contractor shall provide grade and offset stakes to control the location and depth of excavation and backfill.
- F. The Contractor shall survey the location and elevation of all excavation and backfill limits to document the areas remediated.
- G. The Contractor shall provide survey control as required to properly complete and document the work.
- H. Lack of adequate survey control or improperly maintained "as-builts" will be the basis for rejection of the Contractor's application for payment until corrected.

3.3 COORDINATE LIST

- A. The Contractor shall compute the coordinates of each surveyed point on the New York State Plane Coordinate System using the 1983 North American Datum (NAD).
- B. The elevations shall be on the North American Vertical Datum of 1988 (NAVD88).

3.4 SURVEY NOTES

- A. The Contractor shall record all fieldwork in a clear, legible, and complete manner.
- B. The Field Survey Book(s) shall contain a complete description of the nature and location of the new and existing points. The record shall also include a sketch of the point locations, and the monument witness points.
- C. The Contractor shall maintain survey notes on-site for review and use by Engineer.

3.5 UTILITIES

If utilities are encountered within the excavation areas, the contractor shall perform the following activities:

- A. The Contractor shall locate all utilities in the work area.
- B. The Contractor shall verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during work.
- C. The Contractor shall record elevations of all encountered buried piping and utilities exposed, and all structures left in place during the course of the project for incorporation in the project record documents.

END OF SECTION

SECTION 02 81 00 OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

- A. The Contractor shall properly transport and dispose of all items, including solid and liquid wastes removed from the site, to appropriate disposal facilities. This includes Polychlorinated Biphenyl (PCB) wastes, metals wastes, characteristic hazardous waste, as well as construction debris and other waste material (e.g. trees and brush removed from the areas of excavation) generated by the Contract work. The Contractor shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the Treatment, Storage, and Disposal Facility (TSDF), Solid Waste Management Facility (SWMF), and Publicly Owned Treatment Works (POTW) are complied with as applicable, and that Federal, State, and local government requirements are complied with.

1.2. RELATED WORK SPECIFIED ELSEWHERE

- A. Section 31 23 01 – Excavation
 B. Section 31 23 02 – Structural Excavation, Backfill and Compaction
 C. Section 31 05 16 – Aggregates for Earthwork

1.3 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except when more stringent requirements have been specified herein:
1. American Society for Testing and Materials (ASTM)
 - a. ASTM D698 Test Method for Laboratory Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³)
 - b. ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - c. ASTM D3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

1.4 SUBMITTALS

- A. The following items shall be submitted:
1. Transportation Plan: The Contractor shall submit a Transportation Plan to the Engineer prior to the start of work for review. This shall include:
 - a. Type and number of vehicles used;
 - b. Travel routes and times; and
 - c. Copies of transportation permits.
 2. Disposal Facilities: The Contractor shall submit to the Engineer information regarding proposed facilities for disposal of each type of waste. All proposed facilities must be permitted. Information submitted shall include, but not be limited to:
 - a. Name;
 - b. Owner;

- c. Type of facility/permit;
 - d. Contact person, phone number;
 - e. Location;
 - f. Hours of operation; and
 - g. Copies of permits.
3. Paint filter procedure to be performed.
 4. Written confirmation that the TSDF will accept the waste and the transporter is authorized to deliver the waste.
 5. Waste Transportation Permits and safety records for the transporters hauling waste.
 6. Manifest and Bill of Lading forms
 7. Daily summary sheet of truck loads

1.5 PERMITS AND REGULATIONS

- A. The Contractor shall comply with all Federal, State, and local regulations regarding transportation and disposal of non-hazardous special wastes. These include, but are not limited to:
 1. Trucks used for transportation of wastes shall be permitted for such use;
 2. Vehicle operator possession of a commercial driver's license with hazardous waste materials endorsement (if applicable);
 3. Registration of vehicle as a special hazardous waste carrier (if applicable);
 4. Utilization of shipping papers and/or hazardous waste manifest;
 5. Proper marking and placarding of vehicles;
 6. Placement of emergency response procedures and emergency telephone numbers in vehicle, and operator familiarity with emergency response procedures; and
 7. Compliance with load height and weight regulations.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. All equipment supplied shall be in good working condition. Equipment and machinery delivered to the site, including haul trucks that have visible oil or hydraulic fluid leaks, will not be allowed on site until satisfactorily repaired. The Contractor is responsible for the cleanup of any oil or hydraulic fluid spills at the Contractor's expense.
- B. The Contractor shall not allow soil to be tracked off-site at any time during the project. Visible soil tracks on streets will not be allowed. The Contractor shall take sufficient precautions to prevent loose soils from adhering to tire treads, wheel wells, etc. Any loose soil spread shall be cleaned up.
- C. Trucks used for transportation of material for off-site disposal shall be water tight. The disposal facilities shall be equipped with solid covers (e.g., tightly woven fabric, no mesh covers) that shall be utilized during the transportation of wastes from the Site to the disposal facility. All trucks shall be covered prior to leaving the site.

PART 3 – EXECUTION

3.1 DECONTAMINATION

- A. Transport vehicles shall be decontaminated upon leaving the Exclusion Zone at the site and again at the disposal facility as required.

3.2 TRANSPORTATION AND DISPOSAL

- A. Materials shall be transported only at the times and by the routes indicated in the approved Transportation Plan, unless permission is received by the Engineer to do otherwise. The Contractor shall observe the legal load limits.
- B. Prior to shipment of wastes off-site, the Contractor shall confirm by written communication from the designated TSDF that it is authorized, has the capacity, and will provide or assure that the ultimate disposal method is followed for the particular waste on the manifest. Additionally, the Contractor shall confirm by written communication from the designated transporter(s) that they are authorized to deliver the manifested waste to the designated TSDF or SWMF.
- C. Based on the results of the waste characterization activities performed by the Contractor, the excavated soil/debris deemed suitable shall be disposed of at an approved landfill, following local flow control requirements (if applicable). Other materials generated during the remedial activities will be transported off-site for treatment/disposal based on the results of characterization sampling.
- D. All waste transporters hauling waste materials shall submit a copy of their current Waste Transportation Permit (obtained in accordance with 6 NYCRR Part 364) and safety records (including any incidents reported since January 1, 2008 [i.e., the previous 5 years]).
- E. All loads shall be lined, shall be securely covered with a solid lining/cover (i.e., non-mesh), and all tailgates shall be equipped with tailgate locks.

3.3 SAMPLING

- A. The Contractor shall be responsible for all cost associated with sampling of wastes to be disposed of as may be required by the disposal facility.

3.4 MANIFESTING/ BILL OF LADING

- A. The Contractor shall provide and complete all required manifest forms and Bill of Lading forms for the Owner for proper transportation and disposal of materials off-site. The Contractor shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the TSDF, SWMF, POTW, Federal, State, and local governments are complied with and properly documented. All Manifests and/or Bills of Lading must be signed by the Owner (or an authorized representative) and the truck driver.
- B. The Contractor shall prepare and submit a daily summary sheet that indicates the temporary staging area analytical data and at a minimum, the following information regarding each truck load
 1. Load number (sequential)
 2. Uniform Hazardous Waste Number or Bill of Lading Number
 3. Truck ID Number (license plate number of truck and/or trailer used)
 4. Estimated gross weight
 5. Estimated tar weight
 6. Estimated net load weight
 7. Actual load weight
 8. Material type (non-hazardous, hazardous, debris, etc.)
 9. Destination

END OF SECTION

SECTION 31 05 16 AGGREGATES FOR EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes select fill materials used as either embedment or special backfill, as specified, as directed by the Engineer, or as shown on the Contract Drawings.

1.2 REFERENCES

- A. Materials and installation shall comply with the latest revision of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 1. ASTM International - D422 - Method for Particle-Size Analysis of Soil
 2. DER-10 Technical Guidance for Site Investigation and Remediation, NYSDEC

1.3 SUBMITTALS

- A. The following items shall be submitted:
 1. The name and location of the source of each material.
 2. Affidavit from owner of source and hazardous waste testing results in accordance with the Special Provisions.
 3. Samples and test reports of each material, including gradation, sieve analyses, and type of material.

1.4 DEFINITIONS

- A. Embedment or Lining
 1. Any type granular material specified or directed to be placed below an imaginary line drawn one foot above the inside diameter of the pipe crown and within the trench limits.
- B. Special Backfill
 1. Pipelines
 - a. Any select fill material specified or directed to be placed above an imaginary line drawn one foot above the inside diameter of the pipe crown and within the trench limits.
 2. Structures
 - a. Any select fill material specified or directed to be placed within the excavation limits, either in, under or adjacent to the structure.
- C. Special Granular Material
 1. Special granular material shall mean any of the granular materials listed below or other materials ordered by the Department

PART 2 - PRODUCTS

2.1 SELECT FILL MATERIALS

- A. Type A Select Fill
 1. Crushed Gravel

- a. Thoroughly washed crushed, durable, sharp angled fragments of gravel and free from coatings. Crushed particles shall be a minimum of 85% by weight of the particles with at least two fractured faces. The total area of each fractional face shall exceed 25% of the maximum cross-sectional area of the particle.
- b. Crushed Gravel shall have the following gradation by weight:

| % Passing | Sieve |
|-----------|---------|
| 100 | 1½-inch |
| 0-25 | ¾-inch |
| 0-5 | ½-inch |

B. Type B Select Fill

1. Crushed Stone

- a. Thoroughly washed clean, sound, tough, hard crushed limestone or approved equal free from coatings. Gradation for crushed stone shall be the same as specified for Type A Select Fill.

C. Type C Select Fill

1. Crushed Stone

- a. Thoroughly washed, clean, sound, tough, hard, crushed limestone or approved equal free from coatings. It shall have the following gradation by weight.

| % Passing | Sieve |
|-----------|----------|
| 100 | 1-inch |
| 0-15 | 1/4-inch |

D. Type D Select Fill

1. Washed Sand

- a. Washed coarse sand having the following gradation by weight:

| % Passing | Sieve |
|-----------|----------|
| 100 | 3/8-inch |
| 95-100 | No. 4 |
| 80-100 | No. 8 |
| 50-85 | No. 16 |
| 25-60 | No. 30 |
| 10-30 | No. 50 |
| 2-10 | No. 100 |

E. Type E Select Fill

1. Run-of-Bank Gravel

- a. Run-of-bank gravel or other acceptable granular material free from organic matter, having the following gradation by weight, as determined by washing through the sieve in accordance with ASTM D422.

| % Passing | Sieve |
|-----------|------------|
| 100 | 1-1/2-inch |
| 30-65 | 1/4-inch |
| 0-10 | No. 200 |

F. Type F Select Fill

1. Run-of-crusher Stone

- a. Run-of-crusher hard durable limestone, or approved equal, having the following gradation by weight:

| % Passing | Sieve |
|-----------|----------|
| 100 | 1½- inch |
| 95-100 | 1-inch |
| 65-80 | ½-inch |
| 40-60 | ¼-inch |
| 0-10 | No. 200 |

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install special backfill in accordance with the backfilling provisions of the Section entitled "Excavation" and the Section entitled "Restoration of Surfaces", where specified or directed.

3.2 DISPOSAL OF DISPLACED MATERIALS

- A. Materials displaced through the use of Select Fill shall be wasted or disposed of by the Contractor in accordance with the section entitled "Off-Site Transportation and Disposal" or as otherwise specified.

3.3 SETTLEMENTS

- A. Any settlements in the finished work shall be repaired by the Contractor to establish the proposed or existing grade, as the case may be.
- B. The contractor shall repair all settlements. No additional cost will be made for settlement repair.

END OF SECTION

SECTION 31 05 19.14 GEOTEXTILE DEMARCATION FABRIC

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes the furnishing of all labor, material, equipment and performing all operations required for testing, furnishing, hauling, and placing geotextile demarcation fabric as specified herein, shown on the Contract Drawings, or as specified by the Engineer.

1.2 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. American Society for Testing and Materials (ASTM)
 - a. ASTM D4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
 - b. Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
 - c. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
 - d. ASTM D4533 Test Method for Trapezoid Tearing Strength of Geotextiles
 - e. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
 - f. ASTM D4751 Test Method for Determining the Apparent Opening Size of a Geotextile
 - g. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
 - h. ASTM D5101 Test Method for Measuring Soil-Geotextile System Clogging Potential (By the Gradient Ratio)
 - i. ASTM D5261 Test Method for Mass per Unit of Geotextiles

1.3 SUBMITTALS

- A. The following items shall be submitted:
 - 1. Manufacturer's technical data, including material specifications.
 - 2. Manufacturer's installation requirements.
 - 3. Samples of any material shall be submitted at the Engineer's request.
 - 4. Manufacturer's certification that all materials furnished are in compliance with the applicable requirements of the referenced standards and this specification.

PART 2 - PRODUCTS

2.1 MANUFACTURES

- A. The following manufacturers are named to establish a standard of quality necessary for the project:
 - 1. TC Mirafi
 - 2. Or equal

2.2 GEOTEXTILE DEMARCATION FABRIC

- A. The geotextile demarcation fabric shall be Mirafi 160N/O or approved equal.
- B. The geotextile demarcation fabric shall be an orange nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain relative position.
- C. The geotextile demarcation fabric shall conform to the following minimum average roll physical strength requirements:

| Mechanical Properties | Test Method | Unit | Minimum Average Roll Value | |
|------------------------------|-------------|--|----------------------------|-----------|
| | | | MD | CD |
| Grab Tensile Strength | ASTM D4632 | lbs (N) | 175 (779) | 175 (779) |
| Grab Tensile Elongation | ASTM D4632 | % | 75 | 75 |
| Trapezoid Tear Strength | ASTM D4533 | lbs (N) | 85 (378) | 85 (378) |
| CBR Puncture Strength | ASTM D6241 | lbs (N) | 480 (2136) | |
| Apparent Opening Size (AOS) | ASTM D4751 | U.S. Sieve (mm) | 100 (0.15) | |
| Permittivity | ASTM D4491 | sec ⁻¹ | 1.5 | |
| Flow Rate | ASTM D4491 | gal/min/ft ² (l/min/m ²) | 105 (4278) | |
| Physical Properties | Test Method | Unit | Typical Value | |
| UV Resistance (at 500 hours) | ASTM D4355 | % strength retained | 80 | |
| Weight | ASTM D5261 | oz/yd ² (g/m ²) | 6.5 (220) | |
| Thickness | ASTM D5199 | Mils (mm) | 65 (1.790) | |

- D. During all periods of shipment and storage, the geotextile shall be protected from adverse weather, heavy winds or precipitation, direct sunlight, ultraviolet light, temperatures greater than 140°F, mud, dirt, dust, debris, and vandals. To the extent possible, the geotextile shall be maintained wrapped in a heavy duty protective covering. In the event of damage, the Contractor shall immediately make all repair and replacements at no additional cost to the Department.
- E. The Contractor shall provide testing services specified herein as necessary for the geotextile material and thread. Also, the Contractor shall provide testing and field services required during installation of the geotextile.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Prior to installation of the geotextile demarcation fabric, the surface material on which the demarcation fabric is to be installed will be free of organic matter, irregularities, protrusions, and any abrupt changes in grade that could damage the demarcation fabric. The surface will be maintained in a smooth and uniform condition during installation of the demarcation fabric. The surface on which the geotextile is to be placed shall be inspected and accepted by the Engineer prior to placement of the geotextile demarcation fabric.
- B. The geotextile shall be placed at the locations shown on the Contract Drawings. At the time of the installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.
- C. The geotextile shall be laid smooth and free of tension, stress, folds, wrinkles, or creases. When geotextile is used in trenches, the geotextile shall be placed with the long dimension perpendicular to the centerline of the trench, unless otherwise approved by the Engineer. The geotextile shall be placed to provide minimum overlaps of 1.5 feet. Overlaps shall be made with uphill or upstream fabric lapped over downhill or downstream fabric.
- D. The geotextile shall be protected at all times during construction from damage by surface runoff and construction activities, and any geotextile so damaged shall be removed and replaced with undamaged geotextile. Any damage to the geotextile during its installation or during placement of soil layers or other activities shall be replaced by the Contractor at the Contractor's expense.
- E. The Work shall be scheduled so that the covering of the geotextile (i.e., backfilling) with the specified material is accomplished within 5 days after placement of the geotextile. Failure to comply shall require replacement of geotextile.
- F. The geotextile shall be protected from damage due to the placement of materials by limiting the height of drop of the material to less than 1 foot unless otherwise accepted by Engineer.

END OF SECTION

SECTION 31 23 01 EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes excavation and backfilling including the loosening, removing, refilling, transporting, storage and disposal of all materials classified as "earth" necessary to be removed for the construction and completion of all work under the Contract, and as shown on the Contract Drawings, specified or directed.
- B. Where certain features related to Earthwork are shown on the Contract Drawings, the Contractor shall be entirely responsible for final sequencing, scheduling, coordinating and planning the actual areas and their implementation in accordance with all laws and property ownership. These may include storage and staging areas, temporary stock pile areas, vehicle parking areas, temporary haul roads for construction ingress and egress, and other similar zones and land uses.
- C. All excavated soils shall be transported and placed within the on-site excavated material staging area to facilitate characterization followed by off-site disposal.
- D. Contaminated soils and sediments containing greater than 50 mg/kg of PCBs shall be transported to a Toxic Substances Control Act Compliant Facility (TSCA) in accordance with Specification 02 81 00 "Off-Site Transportation and Disposal".
- E. Soils which fail the Toxic Characteristic Leaching Procedure Testing and are determined to be characteristic hazardous waste and are Non-TSCA Waste (*i.e.*, less than 50 mg/kg of PCBs), shall be transported to a Resource Conservation Recovery Act (RCRA) Compliant Facility in accordance with Specification 02 81 00 "Off-Site Transportation and Disposal".
- F. Soils that are Non-TSCA Waste (*i.e.*, less than 50 mg/kg of PCBs), and are not characteristic hazardous waste, shall be transported to a RCRA Compliant Facility in accordance with Specification 02 81 00 "Off-Site Transportation and Disposal".

1.2 REFERENCES

- A. The publications listed below form a part of the specification to the extent referenced. Comply with the latest revision of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 1. ASTM International
 - a. A328 Specification for Steel Sheet Piling
 - b. D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³)
 - c. D1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - d. D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³)
 - e. D1760 Specification for Pressure Treatment of Timber Products
 - f. D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

- g. Method 9095 (Paint Filter Test), "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA pub. No. SW-846)

1.3 DEFINITIONS

- A. Excavation (including Trenching)
1. Grubbing, stripping, removing, storing and re-handling of all materials of every name and nature necessary to be removed for all purposes incidental to the construction and completion of all the work under construction.
 2. All sheeting, sheet piling, bracing and shoring, and the placing, driving, cutting off and removing of the same.
 3. All diking, ditching, fluming, coffer-damming, pumping, bailing, draining, well pointing, or otherwise for disposing of water.
 4. The removing and disposing of all surplus materials from the excavations in the manner specified.
 5. The maintenance, accommodation and protection of traffic and pedestrian travel and the temporary paving of highways, roads and driveways.
 6. The supporting and protecting of all tracks, rails, buildings, curbs, sidewalks, pavements, overhead wires, poles, trees, vines, shrubbery, pipes, sewers, conduits or other structures or property in the vicinity of the work, whether over or underground or which appear within or adjacent to the excavations, and the restoration of the same in case of settlement or other injury.
 7. All temporary bridging and fencing and the removing of same.
- B. Earth
1. All materials such as sand, gravel, clay, loam, ashes, cinders, pavements, muck, roots or pieces of timber, soft or disintegrated rock, not requiring blasting, barring, or wedging from their original beds, and specifically excluding all ledge or bedrock and individual boulders or masonry larger than one-half cubic yard in volume.
- C. Backfill
1. The refilling of excavation and trenches to the line of filling indicated on the Contract Drawings or as directed using materials suitable for refilling of excavations and trenches; and the compacting of all materials used in filling or refilling by rolling, ramming, watering, puddling, etc., as may be required.
- D. Spoil
1. Surplus excavated materials not required or not suitable for backfills or embankments.
- E. Embankments
1. Fills constructed above the original surface of the ground or such other elevation as specified or directed.
- F. Limiting Subgrade
1. The underside of the pipe barrel for pipelines
 2. The underside of footing lines for structures
- G. Excavation Below Subgrade
1. Excavation below the limiting subgrades of structures or pipelines.
 2. Where materials encountered at the limiting subgrades are not suitable for proper support of structures or pipelines, the Contractor shall excavate to such new lines and grades as required

1.4 COORDINATION REQUIREMENTS

- A. Coordinate layout and installation of all Contract work with earthwork activities and space requirements.

1.5 SUBMITTALS

- A. Sheeting, bracing, and shoring drawings stamped and signed by a licensed Professional Engineer in the State of the project, if sheeting, bracing, or shoring is required.
- B. A representative list of satisfactory and similar operations, including contact names and telephone numbers shall be submitted, if well point dewatering is required.

PART 2 - PRODUCTS

2.1 WOOD SHEETING AND BRACING

- A. Wood sheeting and bracing shall be sound and straight; free from cracks, shakes and large or loose knots; and shall have dressed edges where directed.
- B. It shall conform to National Design Specifications for Stress Grade Lumber having a minimum fiber stress of 1200 pounds per square inch.
- C. Sheeting and bracing to be left in place shall be pressure treated in accordance with ASTM D1760 for the type of lumber used and with a preservative approved by the Engineer.

2.2 STEEL SHEETING AND BRACING

- A. Steel sheeting and bracing shall be sound.
- B. It shall conform to ASTM A328 with a minimum thickness of 3/8 inch.

2.3 GEOTEXTILE MATERIALS

- A. Geotextile for Structural Subgrade Reinforcement: Shall be an integrally formed, biaxial geogrid manufactured from polypropylene, complying with the following measurements per test methods referenced:
 1. Tensile Strength @ 2% Strain: 410 lb/ft (MD Value); ASTM D6637.
 2. Tensile Strength @ 5% Strain: 810 lb/ft (MD Value); ASTM D6637.
 3. Ultimate Tensile Strength: 1310 lb/ft (MD Value); ASTM D6637.
 4. Aperture Dimensions: 1x1.3 in. (Nom).
 5. Minimum Rib Thickness: 0.05 in. (Nom.)
 6. Product shall be Tensar Earth Technologies, Inc., Biaxial Geogrid BX1200 or approved equal.
- B. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measure per test methods referenced:
 1. Grab Tensile Strength: 157 lbf; ASTM D 4632.
 2. Sewn Seam Strength: 142 lbf; ASTM D 4632.
 3. Tear Strength: 56 lbf; ASTM D 4533.
 4. Puncture Strength: 56 lbf; ASTM D 4833.
 5. Apparent Opening Size: No. 70 sieve, maximum; ASTM D 4751.

6. Permittivity: 0.1 per second, minimum; ASTM D 4491.
 7. Product shall be Mirafi 160N or approved equal.
- C. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following measured per test methods referenced:
1. Grab Tensile Strength; 247 lbf; ASTM D 4632.
 2. Sewn Seam Strength; 222 lbf; ASTM D 4632.
 3. Tear Strength: 90 lbf; ASTM D 4533.
 4. Puncture Strength: 90 lbf; ASTM D 4833.
 5. Apparent Opening Size: No.60 sieve, maximum; ASTM D 4751.
 6. Permittivity: 0.02 per second, minimum; ASTM D 4491.
 7. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
 8. Product shall be Mirafi 500X or approved equal.
- D. Geotextile Demarcation Fabric: See Section 31 05 19.14

PART 3 - EXECUTION

3.1 UNAUTHORIZED EXCAVATION

- A. Whenever excavations are carried beyond or below the lines and grades shown on the Contract Drawings, or as given or directed by the Engineer, all such excavated space shall be refilled with select fill, controlled low strength material, concrete or other materials as the Engineer may direct. All backfilling and compacting of unauthorized excavations shall be at the Contractor's expense.
- B. All material which slides, falls or caves into the established limits of excavations due to any cause whatsoever, shall be removed and disposed of at the Contractor's expense and no extra compensation will be paid to the Contractor for refilling of the void areas left by the slide, fall or cave-in, including any materials or select fill required.

3.2 CONTROL OF WATER

- A. General
 1. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the control and removal of all water entering the excavations and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work or the proper placing of pipes, structures, or other work.
 2. Unless otherwise specified, all excavations which extend down to or below the static groundwater elevations shall be dewatered by lowering and maintaining the groundwater beneath such excavations at all times when work thereon is in progress, during subgrade preparation and the placing of the structure or pipe thereon.
 3. Water shall not be allowed to rise over or come in contact with any masonry, concrete or mortar, until at least 24 hours after placement, and no stream of water shall be allowed to flow over such work until such time as the Engineer may permit.
 4. Where the presence of fine-grained subsurface materials and a high groundwater table may cause the upward flow of water into the excavation with a resulting quick or unstable condition, the Contractor shall install and operate a well point system to prevent the upward flow of water during construction.

5. Water pumped or drained from excavations, or any sewers, drains or water courses encountered in the work, shall be disposed of in a suitable manner without injury to adjacent property, the work under construction, or to pavements, roads, drives, and water courses. No water shall be discharged to sanitary sewers. Sanitary sewage shall be pumped to sanitary sewers or shall be disposed of by an approved method.
6. All dewatering activities shall be conducted in accordance with laws and permits. All such discharges shall be controlled and pre-treated as necessary.
7. Any damage caused by or resulting from dewatering operations shall be the sole responsibility of the Contractor.

B. Work Included

1. The construction and removal of cofferdams, sheeting and bracing, and the furnishing of materials and labor necessary thereof.
2. The excavation and maintenance of ditches and sluiceways.
3. The furnishing and operation of pumps, well points, and appliances needed to maintain control of water related to the work in a satisfactory manner.
4. The installation and removal of temporary sediment and discharge control devices.

C. Well Point Dewatering Systems

1. Installation

- a. The well point system shall be designed and installed by or under the supervision of an organization whose principal business is well pointing, and which has at least five consecutive years of similar experience and can furnish a representative list of satisfactory similar operations, including contact names and telephone numbers.
- b. Well point headers, points and other pertinent equipment shall not be placed within the limits of the excavation in such a manner or location as to interfere with the laying of pipe or trenching operations or with the excavation and construction of other structures.
- c. Detached observation wells of similar construction to the well points shall be installed at intervals of not less than 50 feet along the opposite side of the excavation from the header pipe and line of well points, to a depth of at least 5 feet below the proposed excavation. In addition, one well point in every 50 feet shall be fitted with a tee, plug and valve so that the well point can be converted for use as an observation well. Observation wells shall be not less than 1 inches in diameter.
- d. Standby gasoline or diesel-powered equipment shall be provided so that in the event of failure of the operating equipment, the standby equipment can be readily connected to the system. The standby equipment shall be maintained in good order and actuated regularly not less than twice a week.

2. Operation

- a. Where well points are used, the groundwater shall be lowered and maintained continuously (day and night) at a level not less than 2 feet below the bottom of the excavation. Excavation will not be permitted at a level lower than 2 feet above the water level as indicated by the observation wells.
- b. The effluent pumped from the well points shall be examined periodically by qualified personnel to determine if the system is operating satisfactorily without the removal of fines.
- c. The water level shall not be permitted to rise until construction in the immediate area is completed and the excavation backfilled.

3.3 STORAGE OF MATERIALS

A. Sod

1. Any sod cut during excavation and suitable for final restoration shall be removed and stored during construction so as to preserve the grass growth. Sod damaged while in storage shall be replaced in like kind at the sole expense of the Contractor.

B. Topsoil

1. Topsoil suitable for final grading shall be removed and stored separately from other excavated material.
2. Control erosion run-off from stockpiles by installing silt fencing. Maintain silt fence during construction and remove upon completion of work.

C. Excavated Materials

1. All excavated materials shall be stored in locations so as not to endanger the work, and so that easy access may be had at all times to all parts of the excavation. Stored materials shall be kept neatly piled and trimmed, so as to mitigate impact to public travel and to adjoining property owners.
2. Special precautions shall be taken to permit access at all times to fire hydrants, fire alarm boxes, driveways, and other points where access may involve the safety and welfare of the general public.

3.4 DISPOSAL OF MATERIALS

A. Spoil Material

1. All spoil materials shall be disposed of as required by the local, state or federal regulations and as described in the contract documents.
2. The surface of all spoil areas shall be graded and dressed, and no unsightly mounds or heaps shall be left on completion of the work. On-site disposal areas, if permitted, shall be permanently restored with turf establishment or as otherwise specified.

3.5 SHEETING AND BRACING

A. Installation

1. The Contractor shall furnish, place and maintain such sheeting, bracing and shoring as may be required to support the sides and ends of excavations in such manner as to prevent any movement which could, in any way, injure the pipe, structures, or other work; diminish the width necessary for construction; otherwise damage or delay the work of the Contract; endanger existing structures, pipes or pavements; or cause the excavation limits to exceed the right-of-way limits.
2. In no case will bracing be permitted against pipes or structures in trenches or other excavations.
3. Sheeting shall be driven as the excavation progresses, and in such manner as to maintain pressure against the original ground at all times. The sheeting shall be driven vertically with the edges tight together, and all bracing shall be of such design and strength as to maintain the sheeting in its proper position. Seepage that carries fines through the sheeting shall be plugged to retain the fines.
4. Where breast boards are used between soldier pile, the boards shall be back packed with soil to maintain support.
5. The Contractor shall be solely responsible for the adequacy of all sheeting and bracing.

B. Removal

1. In general, all sheeting and bracing, whether of steel, wood or other material, used to support the sides of trenches or other open excavations, shall be withdrawn as the trenches or other open excavations

are being refilled. That portion of the sheeting extending below the top of a pipe or structural foundation shall not be withdrawn, unless otherwise directed, before more than 6 inches of earth is placed above the top of the pipe or structural foundation and before any bracing is removed. The voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

2. The Contractor shall not remove sheeting and bracing until the work has attained the necessary strength to permit placing of backfill.

C. Left in Place

1. If, to serve any purpose of his own, the Contractor files a written request for permission to leave sheeting or bracing in the trench or excavation, the Engineer may grant such permission, in writing, on condition that the cost of such sheeting and bracing be assumed and paid by the Contractor.
2. The Contractor shall leave in place all sheeting, shoring and bracing which are shown on the Contract Drawings or specified to be left in place or which the Engineer may order, in writing, to be left in place. All shoring, sheeting and bracing shown or ordered to be left in place will be paid for under the appropriate item of the Contract. No payment allowance will be made for wasted ends or for portions above the proposed cutoff level, which are driven down instead of cut-off.
3. In case sheeting is left in place, it shall be cut off or driven down as directed so that no portion of the same shall remain within 12 inches of the street subgrade or finished ground surface.

3.6 BACKFILLING

A. General

1. All excavations shall be backfilled to the original surface of the ground or to such other grades as may be shown, specified or directed.
2. Unless otherwise specified, backfilling shall be done with suitable excavated materials that can be satisfactorily compacted during refilling of the excavation. In the event the excavated materials are not suitable, Select Fill as specified in Section 31 05 15 "Aggregates for Earthwork" or ordered by the Engineer shall be used for backfilling.
3. Any settlement occurring in the backfilled excavations shall be refilled and compacted.
4. Imported material shall be sampled in accordance with DER-10.

B. Unsuitable Materials

1. Stones and pieces of rock greater than six inches in any single dimension shall not be used in any portion of the backfill.
2. All stones and pieces of rock shall be distributed through the backfill and alternated with earth backfill in such a manner that all interstices between them shall be filled with earth.
3. Stone and pieces of rock greater than 1.5-inches in any single dimension shall not be used in the initial backfill (centerline of pipe to 12-inches above the top of pipe).
4. Pieces of pavement, frozen earth, or other miscellaneous debris shall not be allowed in any part of the backfill.

C. Compaction and Density Control

1. Where compaction is specified, material shall be placed in maximum lifts of 6 inches.
2. The compaction shall be as specified for the type of earthwork (i.e., structural, trenching or embankment).
 - a. The compaction specified shall be the percent of maximum dry density.

- b. The compaction equipment shall be suitable for the material encountered.
- 3. Where required, to assure adequate compaction, in-place density test shall at the expense of the Contractor be made by an approved testing laboratory.
 - a. The moisture-density relationship of the backfill material shall be determined by ASTM D698, Method D.
 - 1) Compaction curves for the full range of materials used shall be developed.
 - b. In-place density shall be determined by the methods of ASTM D1556 or ASTM D2922 and shall be expressed as a percentage of maximum dry density.
- 4. Where required, to obtain the optimum moisture content, the Contractor shall add, at its expense, sufficient water during compaction to assure the specified maximum density of the backfill. If, due to rain or other causes, the material exceeds the optimum moisture content, it shall be allowed to dry, assisted if necessary, before resuming compaction or filling efforts.
- 5. The Contractor shall be responsible for all damage or injury done to pipes, structures, property or persons due to improper placing or compacting of backfill.

3.7 OTHER REQUIREMENTS

A. Drainage

- 1. All material deposited in roadway ditches or other water courses shall be removed immediately after backfilling is completed and the section, grades and contours of such ditches or water courses restored to their original condition, in order that surface drainage will be obstructed no longer than necessary.

B. Unfinished Work

- 1. When, for any reason, the work is to be left unfinished, all trenches and excavations shall be filled and all roadways, sidewalks and watercourses left unobstructed with their surfaces in a safe and satisfactory condition. The surface of all roadways and sidewalks shall have a temporary pavement.

C. Hauling Material over Public Roads and Streets

- 1. When it is necessary to haul material over public streets or pavements, the Contractor shall provide suitable, tight vehicles so as to prevent deposits on the streets or pavements. In all cases where any materials are dropped from the vehicles, the Contractor shall clean up the same as often as required to keep the crosswalks, streets and pavements clean and free from dirt, mud, stone and other hauled material.

D. Dust Control

- 1. It shall be the sole responsibility of the Contractor to control the dust created by any and all of his operations to such a degree that it will not endanger the safety and welfare of the general public.
- 2. Calcium chloride and petroleum products shall not to be used for dust control.

E. Test Pits

- 1. For the purpose of obtaining detail locations of underground obstructions, the Contractor shall make excavations in advance of the work.

END OF SECTION

SECTION 31 23 02 STRUCTURAL EXCAVATION, BACKFILL AND COMPACTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes excavation, backfill and compaction as required for the construction of structures, sidewalks or other features in accordance with the applicable provisions of Section 31 23 01 entitled "Excavation" unless modified herein, or as shown on the Contract Drawings.

1.2 REFERENCES

- A. Comply with the latest revision of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. Refer to the Section entitled "Excavation".
 - 2. ASTM International
 - a. D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³)

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 LIMITS OF EXCAVATION

- A. Excavations shall be made to the elevations or subgrades specified and shall be only of sufficient size to allow suitable room for the proper construction of structures and appurtenances, including allowances for sheeting, de-watering, and other similar work necessary for completion of the Contract.
- B. Normal subgrade for structures shall be the underside of footing lines or mud mats, if installed.
- C. In no case will undercutting excavation faces be permitted.

3.2 SUBSURFACE REINFORCEMENT

- A. Where an unstable subgrade is encountered and subject to the approval of the Engineer, select fill may be used for subgrade reinforcement if satisfactory results can be obtained thereby. Such material shall be applied in thin layers, each layer being entirely embedded in the subsoil by thorough tamping.
- B. All excess material shall be removed to compensate for the displacement by the select fill and the finished elevation shall not be above the specified subgrade.
- C. Where subgrade reinforcement is unsatisfactory, a concrete mud mat of sufficient thickness to withstand subsequent construction operations shall be installed below the specified elevation and the structural concrete deposited thereon.

3.3 SUBSURFACE

- A. Subsurface for all concrete structures shall be undisturbed original earth or, mud mat on undisturbed original earth, or where excavation below subgrade is ordered, it shall be thoroughly compacted special backfill or concrete mud mat as specified or directed and shall be sufficiently stable to remain firm and intact during the preparation for the placing of concrete thereon.

3.4 REMOVAL OF WATER

- A. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the removal of all water entering the excavations and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work or the proper placing of pipes, structures, or other work.
- B. The removal of water shall be in accordance with the Section entitled "Excavation" and the Remedial Action Work Plan.

3.5 BACKFILLING

- A. Backfilling shall be with suitable excavated materials which can be compacted as specified. In the event the excavated materials are not suitable, special backfill as specified or ordered by the Engineer shall be used for backfilling.
- B. Backfilling around structures shall not be commenced before the structure has developed sufficient strength to withstand the loads applied. No backfill material shall be allowed to fall directly on a structure, until at least 12 inches of material has been hand-placed and compacted nor shall any material be pushed directly against a structure in backfilling.
- C. Backfill shall be deposited in horizontal layers and at no greater thickness than can be compacted to obtain the specified minimum densities.

3.6 COMPACTION

- A. Where structures, driveways, sidewalks or other features are to be constructed on the backfilled area the entire backfill shall be compacted to obtain 95% maximum dry density. Other areas shall be compacted to obtain 85% maximum density. Dry density as determined by the density test designated by ASTM D1557.
- B. The density shall be determined as set forth in the Section entitled "Excavation".
- C. In place density compaction testing as set forth in Section entitled "Excavation" shall be completed as directed by the Engineer.

END OF SECTION

SECTION 31 25 00 EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

This Section includes temporary erosion and sediment control measures intended to minimize erosion of soils and sedimentation of lands and waters adjacent to or affected by the proposed Interim Remedial Measure for the 1318 Niagara Street, Buffalo NY site.

1.1 REFERENCES

- A. All work shall be performed in compliance with the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-15-002). Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications:
 - 1. NYSDEC Standards and Specifications for Erosion and Sediment Control. (NYSDEC 2016).
 - 2. New York State Stormwater Management Design Manual (the design Manual) prepared by the Center for Watershed Protection for the NYSDEC (2015).
- B. Approval from the NYSDEC shall be received prior to disturbance of more than 5 acres at one time.

1.2 SUBMITTALS

- A. Submit shop drawings of silt fence and vegetative seed mixes for approval.

PART 2 - MATERIALS

2.1 GENERAL

- A. Provide all necessary supervision, labor, equipment and materials needed to perform the specified work. Materials may include vegetation, silt fence, silt barrier, stone, erosion control fabric, and other manufactured products to reduce erosion and control sedimentation.

2.2 SILT BARRIER

- A. Silt barrier socks shall be Filtrexx Sediment Control System units or approved equal and range between 12-24 inches in height. Mulch used inside the units shall be from native woody vegetation and shall be free of any refuse, contaminants or other materials toxic to plant growth. Chips from allelopathic species such as black walnut (*Juglans nigra*) shall not be used.
- B. Material from plants identified on the Prohibited and Regulated Invasive Species - 6 NYCRR Part 575 (http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf) shall not be used.

2.3 STABILIZED CONSTRUCTION ACCESS

- A. Stone used for stabilized construction accesses shall be a minimum of 2-inch stone. Equivalent material (i.e., reclaimed concrete) may be used with approval.
- B. Geotextile bedding shall consist of Mirafi 500X or equal.
- C. Overall dimensions and installation notes are as shown on the Contract Drawings.

2.4 TEMPORARY VEGETATION

- A. See Section 3.02.

2.5 DUST CONTROL

- A. Measures may include water application or mulching but shall not include use of chemical additives.

PART 3 - CONSTRUCTION DETAILS

3.1 SEQUENCE

- A. A temporary stabilized construction access shall be installed in the ingress and egress locations. If needed, vehicles/equipment shall be washed on the access prior to leaving the site. Periodic top dressing of the access shall be performed as necessary as material accumulates to prevent tracking of material onto off-site roadways.
- B. Silt fence or silt barrier shall be installed along toes of embankments, on downstream portions of the site perimeter, and around spoil piles and stockpiles.
- C. Staging/laydown areas for vehicles and construction equipment shall be located on stabilized portions of the site.
- D. Additional erosion and sediment control (ESC) facilities shall be installed as shown on the Contract Drawings. These facilities shall remain in place until construction activities are completed and the site is stabilized.
- E. Stockpiled and exposed soil shall be stabilized, topsoiled, seeded, and mulched in accordance with the Contract Documents.
- F. Upon stabilization of the site and approval of final site inspection, temporary ESC measures shall be removed.

3.2 TEMPORARY STABILIZATION

- A. The project approach includes planting the project area with permanent vegetation as soon as practicable. In the event of unforeseen project delays (i.e., longer than the time frames in Permit No. GP-0-15-002), areas shall be temporarily stabilized with the following measures:
 - B. Spread additives into soil by approved methods.
 - C. The seed shall not be more than two years old. Germination tests of the seed proposed to be used shall be made not more than six months prior to seeding operations. The seed mixture may be varied to suit special conditions of soil peculiar to the areas to be seeded. Seed that has become wet, moldy, or otherwise damaged in transit or storage shall not be acceptable.
 - D. At the discretion of the Engineer, temporary seed shall be applied as follows: oats at a rate of 45 pounds per acre and white clover at a rate of 5 pounds per acre. If performed between October 1 and March 31, winter wheat shall also be applied at a rate of 10 pounds per acre. Spread seed by hand or approved sowing equipment.
 - E. After sowing has been completed, apply mulch evenly over the entire seeded area at a rate of 2 tons per acre.

3.3 PERMANENT STABILIZATION

- A. Permanent stabilization measures shall be initiated pursuant to the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC 2016) as soon as practicable. For portions of the site where soil disturbance activities have permanently ceased, stabilization measures must be implemented within 7 days of the conclusion of activities. This requirement does not apply if the installation of stabilization measures is precluded by snow cover or frozen ground conditions; however, measures shall be implemented as soon as practicable.

3.4 ADDITIONAL STORMWATER CONTROLS

- A. Listed below is a description of additional controls and measures that shall be implemented at the site to minimize sediment and chemical transport via stormwater:
 1. Proper precautions shall be taken so soil does not spill or is tracked onto adjacent roadways during earthwork. Soil shall be removed from roadways as soon as practicable so that it does not enter surface and subsurface drainage systems.
 2. Dust control measures shall be provided before dust migrates off-site. Measures may include water application or mulching but shall not include use of chemical additives.
 3. Planting materials shall be properly stored and/or contained.
 4. Chemicals (e.g., herbicides) with spill potential shall have secondary containment (e.g., spill pallets) or be stored indoors in sealed, non-leaking containers.

3.5 MAINTENANCE

- A. Construction period operation and maintenance:
 1. Clean, repair and/or replace silt fences, silt barriers, and construction accesses as necessary.
 2. Remove sediment from silt fence and silt barriers when it has accumulated to one half the design capacity.
 3. Clean and/or sweep affected roadways daily, or more frequently if otherwise required based on periodic inspections.
 4. Observe equipment and vehicles within the work area, particularly for identification of vehicles leaking petroleum products that could enter stormwater drainage facilities.
 5. Stabilized construction accesses and construction access pathways shall be resurfaced as necessary.
 6. Remove debris and litter on a weekly basis or more frequently if necessary.
- B. Post-construction operation and maintenance:
 1. Vegetation within the project area shall be monitored and maintained. Dead vegetation shall be replaced as necessary to maintain a minimum ground coverage of 80%.
 2. Areas shall be maintained and/or reseeded or stabilized to protect against erosion.
 3. Sloughing or erosion of embankments shall be repaired.

3.6 INSPECTION DURING CONSTRUCTION

A. General

A qualified inspector¹ shall inspect the proposed erosion and sediment control measures and disturbed areas of the construction site for compliance with the SWPPP until the site is stabilized. The qualified inspector shall conduct at least one site inspection every seven calendar days. A typical inspection report form for conducting the inspections is included in Appendix E of the SWPPP.

The qualified inspector shall complete the inspection report form following each inspection. The inspection report form shall include the inspector's name, date, findings of the inspections, notes, and actions taken to repair/replace defective control measures. A site map indicating locations of areas of concern and drainage pathways shall be included. Within one business day of the completion of an inspection, the qualified inspector shall notify site personnel of any corrective actions that need to be taken. Corrective actions shall be initiated within one business day of this notification and shall be completed within seven calendar days following the date of the inspection. Further mitigation measures shall be taken if warranted. Each inspection report is to remain on file at the site as part of the SWPPP until the site is stabilized and the SPDES Notice of Termination (NOT) is submitted to the NYSDEC.

Prior to construction, at least one "trained contractor"² shall be identified who shall be responsible for implementation of the SWPPP and inspection of the erosion and sediment controls in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC 2016). At least one trained contractor shall be on site on a daily basis while soil disturbance activities are being performed.

¹ Qualified inspector means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other NYSDEC endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four hours of training every three years.

² Trained contractor means an employee from the contracting (construction) company that has received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the trained contractor shall receive four hours of training every three years. It can also mean an employee from the contracting (construction) company that meets the qualified inspector qualifications (*e.g.*, licensed Professional Engineer, CPESC, Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity). The trained contractor shall be responsible for the day to day implementation of the SWPPP.

B. Temporary Construction Shutdown (Winter Conditions)

When soil-disturbing activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to disturbed areas, periodic inspections by the trained contractor may be halted. However, the qualified inspector must perform a site inspection at least once every 30 calendar days. The NYSDEC shall be notified in writing prior to reducing the inspection frequencies. Inspections by the trained contractor and qualified inspector shall resume in accordance with this Section as soon as soil disturbance activities resume.

3.7 NON-STORMWATER DISCHARGES

- A. Areas at the site dedicated for construction vehicle transit or equipment staging shall be identified by the trained contractor which shall be monitored and where runoff can be controlled. Cleaning of construction vehicles and equipment shall occur in designated staging/laydown areas. Chemicals and detergents shall not be used unless within a designated decontamination area.
- B. Water used for dust control measures shall be applied using proper quantities and equipment to avoid runoff to the extent practicable. No chemical additives shall be used.

3.8 SPILL PREVENTION

- A. The following spill prevention measures shall be performed:
 1. Products shall be kept in their original containers with the original manufacturer's label to the extent practicable.
 2. Materials with potential for spillage that are stored on-site shall be stored in a neat, orderly manner in their appropriate containers and in secondary containment.
 3. Substances shall not be mixed with one another unless recommended by the substance manufacturer.
 4. Whenever possible, product shall be used up or packages resealed before proper management of contents and containers off site.
 5. Manufacturers' recommendations for proper use and disposal shall be followed.
 6. Inspection shall be made for proper use of materials.
 7. On-site vehicles shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage of petroleum products. Petroleum products shall be stored in closed containers which are clearly labeled. Used oils shall be disposed of properly.
 8. Materials shall be brought on-site in the minimum quantities required to limit on-site storage.
 9. Refueling of vehicles and equipment shall occur a minimum of 50-feet from streams, lakes and wetlands.

3.9 SPILL CONTROL PRACTICES

- A. Spills of petroleum, toxins, or hazardous material shall be reported to the appropriate State or local government agencies. Spills shall be cleaned upon discovery.
- B. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the recommended methods and cleanup supplies.
- C. Materials and equipment necessary for spill cleanup shall be kept in an on-site material storage area. Equipment and materials shall include but not be limited to shovels, rags, gloves, goggles, spill control materials, sand, sawdust, and trash containers specifically for this purpose.
- D. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- E. A spill report shall be completed and shall include a description of the spill, what caused it, and the corrective measures taken. Spills shall be reported the NYS Spill Hotline (1-800-457-7362) within 2 hours of discovery unless the quantity is known to be less than 5 gallons and is contained.

3.10 CERTIFICATIONS

- A. Contractor Certification - Each Contractor involved in soil disturbance shall understand and sign a form (see Appendix D-3) containing the following certification statement:
 - 1. "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or the operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."
- B. Prior to construction, at least one qualified inspector shall be identified who shall understand and sign a form (see Appendix E) containing the following certification statement:
 - 2. "I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

3.11 NOTICE OF INTENT/TERMINATION

- A. The completed and signed SPDES Notice of Intent (NOI) shall be submitted to the NYSDEC prior to initiation of construction activities. The SPDES NOT shall be completed and submitted to the NYSDEC upon completion of construction and stabilization of the project area.

END OF SECTION

SECTION 32 01 00.91 RESTORATION OF SURFACES

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes restoration and maintenance of all types of surfaces, sidewalks, curbs, gutters, culverts and other features disturbed, damaged or destroyed during the performance of the work under or as a result of the operations of the Contract.
- B. The quality of materials and the performance of work used in the restoration shall produce a surface or feature equal to the condition of each before the work began.

1.2 REFERENCES

- A. Materials and installation shall comply with the latest revision of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. American Society for Testing and Materials (ASTM)
 - a. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³)
 - b. D1557- Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³)

1.3 SUBMITTALS

- A. Submit the following in with the General Provisions:
 - 1. A schedule of restoration operations. After an accepted schedule has been agreed upon it shall be adhered to unless otherwise revised with the approval of the Engineer.
 - 2. A Deviation Schedule if there is a proposed change from the original schedule.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. In general, permanent restoration of paved surfaces will not be permitted until one month has elapsed after excavations have been completely backfilled as specified. A greater length of time may be granted before permanent restoration of surfaces is undertaken if additional time is required for shrinkage and settlement of the backfill.
- B. The replacement of surfaces at any time, as scheduled or as directed, shall not relieve the Contractor of responsibility to repair damages by settlement or other failures.

3.2 TEMPORARY PAVEMENT

- A. Immediately upon completion of refilling of the trench or excavation, the Contractor shall place a temporary pavement over all disturbed areas of streets, driveways, sidewalks, and other traveled places where the original surface has been disturbed as a result of construction operations.
- B. Unless otherwise specified or directed the temporary pavement shall consist of compacted run-of-crusher limestone to such a depth as required to withstand the traffic to which it will be subjected.
- C. Where concrete pavements are removed, the temporary pavement shall be surfaced with asphalt "cold patch". The surface of the temporary pavement shall conform to the slope and grade of the area being restored.
- D. Control of dust shall be the Contractor's responsibility. All surfaces shall be treated as frequently as may be required in the opinion of the Engineer.
- E. Temporary pavement shall be maintained by the Contractor in a safe and satisfactory condition until such time as the permanent pavement is completed. The Contractor shall immediately remove and restore all pavement that is deemed unsatisfactory to the Engineer.

3.3 PERMANENT PAVEMENT REPLACEMENT

- A. The permanent and final repaving of all streets, driveways and surfaces where pavement has been removed, disturbed, settled or damaged by or as a result of performance of the Contract shall be repaired and replaced by the Contractor, with a new and similar pavement.
 - 1. The top surface shall conform with the grade of existing adjacent pavement and the entire replacement shall meet the current specifications of the local government for each type of pavement.
 - 2. Where the local government has no specification for the type of pavement, the work shall be done in conformity with the State Department of Transportation.
 - 3. Transportation Standard which conforms to the closest type of surface requiring replacement, as determined by the Engineer.

3.4 PREPARATION FOR PERMANENT PAVEMENT

- A. When scheduled and within the time specified, the temporary pavement shall be removed and a base prepared, at the depth required by the local government or Highway Permit, to receive the permanent pavement.
 - 1. The base shall be brought to the required grade and cross-section and thoroughly compacted before placing the permanent pavement.
 - 2. Any base material that has become unstable for any reason shall be removed and replaced with compacted base materials.
- B. Prior to placing the permanent pavement, all service boxes, manhole frames, manhole covers, and similar structures within the area shall be adjusted to the established grade and cross-section.
- C. The edges of existing asphalt pavement shall be sawcut to a minimum of 1 foot beyond the excavation or disturbed base, whichever is greater.
 - 1. All cuts shall be parallel or perpendicular to the centerline of the street, unless otherwise shown or directed.

3.5 ASPHALT PAVEMENT

- A. The permanent asphalt pavement replacement shall be replaced with bituminous materials of the same depth and kind as the existing materials unless otherwise specified.
- B. Prior to placing of any bituminous pavement, a tack coat sealer shall be applied to the edges of the existing pavement and other features.
- C. The furnishing, handling, and compaction of all bituminous materials shall be in accordance with the State Department of Transportation Standards.

3.6 CONCRETE PAVEMENT AND PAVEMENT BASE

- A. Concrete pavements and concrete bases for asphalt, brick or other pavement surfaces shall be replaced with 4,000 psi concrete, air-entrained.
- B. Paving slabs or concrete bases shall be constructed to extend 1 foot beyond each side of the trench and be supported on undisturbed soil. Where such extension of the pavement will leave less than 2 feet of original pavement slab or base, the repair of the pavement slab or base shall be extended to replace the slab to the original edge of the pavement or base unless otherwise indicated on the Contract Drawings.
- C. Where the edge of the pavement slab or concrete base slab falls within the excavation, the excavation shall be backfilled with Special Backfill compacted to 95% maximum dry density as determined by ASTM D 698 up to the base of the concrete.
- D. The new concrete shall be of the same thickness as the slab being replaced and shall contain reinforcement equal to the old pavement.
 - 1. New concrete shall be placed and cured in accordance with the applicable provisions of the State Department of Transportation Standards.

3.7 STONE OR GRAVEL PAVEMENT

- A. All pavement and other areas surfaced with stone or gravel shall be replaced with material to match the existing surface unless otherwise specified.
 - 1. The depth of the stone or gravel shall be at least equal to the existing.
 - 2. After compaction the surface shall conform to the slope and grade of the area being replaced.

3.8 CONCRETE WALKS, CURBS AND GUTTER REPLACEMENT

- A. Concrete walks, curbs, and gutters removed or damaged in connection with or as a result of the construction operations shall be replaced with new construction.
The minimum replacement will be a flag or block of sidewalk.
- B. Walks shall be constructed of 4,000 psi concrete, air-entrained with NYSDOT #1 stone aggregate on a 4-inch base of compacted gravel or stone.
 - 1. The walk shall be no less than 4 inches in thickness. Otherwise, the thickness of the replaced walk where greater than 4 inches shall have construction joints spaced no more than 25 feet apart, shall have expansion joints spaced no more than 50 feet apart, and shall be sloped at right angles to the longitudinal centerline at approximately an inch per foot of width.
- C. One-half (1/2) inch expansion joint material shall be placed around all objects within the sidewalk area as well as objects to which the new concrete will abut, such as valve boxes, manhole frames, curbs, buildings and others.

- D. Walks shall be hand-floated and broom-finished, edged and grooved at construction joints and at intermediate intervals matching those intervals of the walk being replaced.
 - 1. The intermediate grooves shall be scored a minimum of 1/4 of the depth of the walk.
 - 2. The lengths of blocks formed by the grooving tool, and distances between construction and expansion joints shall be uniform throughout the length of the walk in any one location.
- E. The minimum length of curb or gutter to be left in place or replaced shall be 5 feet. Where a full section is not being replaced, the existing curb or gutter shall be sawcut to provide a true edge.
 - 1. The restored curb or gutter shall be the same shape, thickness and finish as being replaced and shall be built of the same concrete and have construction and expansion joints as stated above for sidewalks.

3.9 LAWNS AND IMPROVED AREAS

- A. The area to receive topsoil shall be graded to a depth of not less than 6 inches or as specified below the proposed finished surface.
- B. The furnishing and placing of topsoil, seed and mulch shall be in accordance with the Section 32 93 13 entitled "Topsoil and Seeding".
- C. When required to obtain germination, the seeded areas shall be watered in such a manner as to prevent washing out of the seed.
- D. Any washout or damage that occurs shall be regraded and reseeded until a good sod is established.
- E. The Contractor shall maintain the newly seeded areas, including regrading, reseeding, watering, and mowing in accordance with Section 32 93 13 entitled "Topsoil and Seeding".

3.10 OTHER TYPES OF RESTORATION

- A. Swales and other water courses shall be reshaped to the original grade and cross-section and all debris removed. Where required to prevent erosion, the bottom and sides of the water course shall be protected.
- B. Storm sewers and culverts damaged or removed as a result of the construction operations shall be replaced with like size and material and shall be replaced at the original location and grade. When there is minor damage to a pipe, and with the consent of the Engineer, a repair may be undertaken if satisfactory results can be obtained.
- C. Should brick pavements be encountered in the work, the restoration shall be as set forth in the Special Provisions, or as directed.

END OF SECTION

SECTION 32 31 13 CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes labor, materials and equipment to properly install fence framework, fabric, and gates as shown on the Contract Drawings or at the discretion of the Engineer, complete with accessories.
- B. Features of chain link fences and gates shall be as shown or scheduled on the Contract Drawings.

1.2 REFERENCES

- A. Materials and installation shall comply with the latest revision of the following codes, standards and specifications, except where more stringent requirements have been specified herein or shown on the Contract Drawings:
 - 1. American Society for Testing and Materials (ASTM)
 - a. *A90 - Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles*
 - b. *A121 - Specification for Zinc-Coated (Galvanized) Steel Barbed Wire*
 - c. *A392 - Specification for Zinc-Coated Steel Chain-Link Fence Fabric*
 - d. *A428 - Test Method for Weight of Coating on Aluminum-Coated Iron or Steel Articles*
 - e. *A491 - Specification for Aluminum-Coated Steel Chain-Link Fence Fabric*
 - f. *A585 - Specification for Aluminum-Coated Steel Barbed Wire*
 - g. *A817 - Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric*
 - h. *A824 - Specification for Metallic-Coated Steel Marcellled Tension Wire for Use with Chain-Link Fence*
 - i. *A1011 - Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low-Alloy with Improved Formability*
 - j. *B117 - Method of Salt Spray (Fog) Testing*
 - k. *C94 - Ready-Mixed Concrete*
 - l. *F567 - Standard Practice for Installation of Chain-Link Fence*
 - m. *F626 - Specification for Fence Fittings*
 - n. *F1043 - Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework*
 - o. *F1083 - Standard Specification for Pipe, Steel and Hot Dipped Zinc Coated, (Galvanized) Welded, for Fence Structures*
 - p. *F3000 - Standard Specification for Polymer Privacy Insert Slats for Chain Link Fabric and Privacy Chain Link Fabric Manufactured Containing Pre-Installed Privacy Slats*

1.3 COORDINATION REQUIREMENTS

- A. Coordinate layout and installation of chain link fences and gates with surveyor, site features and Engineer.

- B. Pre-installation Meetings: Coordinate with the Department and Engineer prior to installation of fences and gates.
- C. Scheduling: Schedule fence and gate installation with the Department and Engineer one week in advance of the work.

1.4 SUBMITTALS

- A. Manufacturer's certification that all materials furnished are in compliance with the applicable requirements of the referenced standards, this specification and the Contract Drawings.
- B. Product Data: "Catalog cuts" and specification sheets indicating details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing details marked to specifically indicate the materials proposed for this project. Indicate selections with arrows, and cross out irrelevant data.
- C. Certificates: Submit manufacturer's affidavit stating compliance with applicable provisions of ASTM specifications specified herein.
- D. Qualification Statements: Provide statement indicating fence installer has five years' experience in installing the specified fence and gate.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store fence and gate materials to prevent damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The following manufacturers are named to establish a standard of quality necessary for the Project:
 1. Allied Tube & Conduit Corp.
 2. Anchor Fence, Inc.
 3. Page Aluminized Steel Corp.
 4. Or equal

2.2 GENERAL

- A. Framework: Type I
 1. Type I - Schedule 40 steel pipe with 1.8 ounces of zinc coating per square foot of surface area conforming to Standard Specification ASTM F1083
 2. Pipe shall be straight, true to section and conform to the following weights:

| Pipe Size Outside Diameter | Type I Weight Lbs./Ft. |
|-------------------------------|---------------------------|
| 1 5/8" | 2.27 |
| 2" | 2.72 |
| 2-1/2" | 3.65 |
| 3" | 5.79 |

| Pipe Size Outside Diameter | Type I Weight Lbs./Ft. |
|-------------------------------|---------------------------|
| 3-1/2" | 7.58 |
| 4" | 9.11 |

B. Fabric: Zinc-Coated Steel.

1. Zinc-coated fabric shall be galvanized after weaving with a minimum 2.0 ounces of zinc per square foot of surface area and conform to ASTM A 392, Class 2.

C. Fittings:

1. Pressed steel or cast iron, galvanized with a minimum of 1.2 ounces of zinc per square foot of surface area, or cast aluminum alloy, all conforming to ASTM F 626.

2.3 CONCRETE MIX

- A. ASTM C 94 Portland Cement concrete with maximum 3/4" aggregate having a minimum compressive strength of 2,500 PSI at 28 days.

2.4 MATERIALS AND CONSTRUCTION

A. Fence Posts

1. Fence posts shall be sized as follows:

| Fabric Height | Line Post O.D. | Terminal Post O.D. |
|------------------|----------------|--------------------|
| | Type I | Type II |
| Under 6' | 2" | 2" |
| 6' to 9' | 2-1/2" | 2-1/2" |
| 9' to 12' | 3" | 3" |

B. Gate Posts

1. Gate posts shall be sized as follows:

| Single Gate Width | Double Gate Width | Type I Post O.D. |
|----------------------|----------------------|------------------|
| Up to 6' | Up to 12" | 3" |
| 7' to 12' | 13' to 25' | 4" |
| 13' to 18' | 25' to 36' | 6 5/8" |

C. Rails and Braces

1. Rails and braces shall be 1 5/8" O.D., Type I or Type II.

D. Fabric

1. Fabric shall be galvanized or aluminum-coated steel wire, 9 gage, woven in a 2-inch diamond mesh with top selvage knuckled and bottom selvage knuckled. Fence heights up to 12 feet shall be one-piece widths.
- E. Gates
1. Gates shall have frame assembly of 2-inches O.D., Type I pipe with welded joints. Weld areas repaired with zinc-rich coating applied per manufacturer's directions. Fabric shall match fence. Gate accessories, hinges, latches, center stops, keepers and necessary hardware shall be of quality required for industrial and commercial application. Latches shall permit padlocking of gate.
- F. Fittings
1. Post caps shall be pressed steel, cast iron or cast aluminum alloy designed to fit snugly over posts to exclude moisture. Supply cone type caps for terminal posts and loop type for line posts.
 2. Rail and brace ends shall be pressed steel, cast iron or cast aluminum alloy, cup-shaped to receive rail and brace ends.
 3. Top rail sleeves shall be tubular steel, 0.051 thickness by 7 inches long, expansion type.
 4. Tension bars shall be steel strip, $\frac{5}{8}$ inch wide by $\frac{3}{16}$ inch thick.
 5. Tension bands shall be pressed steel, 14 gage thickness by $\frac{3}{4}$ inch wide.
 6. Brace bands shall be pressed steel, 12 gage thickness by $\frac{3}{4}$ inch wide.
 7. Truss rods shall be steel rod, $\frac{3}{8}$ inch diameter merchant quality with turnbuckle.
- G. Tension Wire
1. Tension wire shall be marcelled 7 gage steel wire with minimum coating of 0.80 ounces of zinc or 0.40 ounces of aluminum per square foot of wire surface and conforming to ASTM A824.
- H. Tie Wires
1. Tie wires shall be aluminum 9 gage, alloy 1100-H4, A58 self-locking fabric bands or equal.
- I. Hog Rings
1. Hog rings shall be steel wire, 9 gage with a minimum zinc coating of 0.80 ounces per square foot of wire surface.

PART 3 - EXECUTION

3.1 GENERAL

- A. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install fence and gate as shown on the Contract Drawings and in accordance with the manufacturer's installation instructions.
- B. Fence installation shall conform to requirements of ASTM F 567.
- C. Provide fence heights as shown on Contract Drawings.
- D. Space line posts at intervals not exceeding ten feet.
- E. The Contractor shall utilize existing line post holes. If new holes are required, the Contractor shall

soft dig utilizing a vac truck and/or air knife at the proposed line post locations.

- F. Set terminal, gate and line posts plumb in concrete footings as shown on Contract Drawings. Top of footing shall be 2 inches above grade and sloped to direct water away from posts.
- G. Brace gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.
- H. Install top rail through line post loop caps connecting sections with sleeves to form a continuous rail between terminal posts. Fasten top rail to terminal posts.
- I. Stretch bottom tension wire between terminal posts 6 inches above grade and fasten to outside of line posts with tie wires.
- J. Pull fabric taut to provide a smooth uniform appearance, free from sag, with bottom selvage 2-inches above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15-inch intervals. Tie to line posts and top rails with tie wires spaced at maximum 12-inches on posts and 24-inches on rails. Attach to bottom tension wire with hog rings at maximum 24-inch intervals.
- K. Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete. Adjust and lubricate hardware for smooth operation.
- L. Install nuts for fittings, bands and hardware bolts on inside of fence. Peen ends of bolts or score threads to prevent removal.
- M. Install privacy screening (if specified on construction drawings) in accordance with the manufacturer's recommendations

END OF SECTION

SECTION 32 93 13 TOPSOIL AND SEEDING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes topsoil, fertilizer, seed, mulch anchorage, and associated work and maintenance required until acceptance.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 31 23 01– Excavation
- B. Section 32 01 00.91 – Restoration of Surfaces

1.3 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. American Society of Testing and Materials (ASTM)
 - a. ASTM D422 Method for Particle-Size Analysis of Soils
 - b. ASTM D2974 Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Materials
 - c. ASTM D4972 Standard Test Method for pH of Soils
 - d. ASTM D5268 Specification for Topsoil used for Landscaping Purposes

1.4 SUBMITTALS

- A. The following items shall be submitted:
 - 1. Documentation giving location of properties from which the topsoil will be obtained, names and addresses of the owners, and depth to be stripped.
 - 2. Documentation giving the seed vendor's certified statement for the grass seed mixture required, stating common name, scientific name, percentage by weight, and percentages of purity and germination.
 - 3. Documentation giving data concerning hydro-seeding equipment (if used), including all material application rates.
 - 4. Documentation regarding test results for particle size, acidity, fertility, and texture performed on representative samples of soil.
 - 5. Affidavit from owner of source and hazardous waste testing results in accordance with the Special Provisions.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil

1. The topsoil shall be unfrozen, natural, fertile, friable, clayey loam soil characteristic of productive soils in the vicinity and shall comply with ASTM D5268. No admixtures of subsoil shall be allowed. Topsoil must be uniform in composition and texture, clean and free from clay lumps, stones, weeds, sticks, brush, stumps, roots, toxic substances, and debris or similar substances 2-inches or more in greatest dimension.
2. All topsoil incorporated into the completed contract, whether originating on-site or off-site, shall be screened.
3. Prior to and during installation of the topsoil layer, material from the borrow source shall be tested in accordance with the following standards and frequencies:

| <u>Parameter</u> | <u>Standard</u> | <u>Minimum Frequency</u> | <u>Criteria</u> |
|--------------------------------|-----------------|--------------------------|---|
| Topsoil Particle Size | ASTM D422 | Once per 500 cy | Monitoring consistency of borrow source |
| Topsoil pH | ASTM 4972 | Once per 500 cy | pH in the range of 5.5 and 7.6 |
| Topsoil Organic Content | ASTM 2974 | Once per 500 cy | not less than 5% nor more than 20% |

4. All topsoil shall be compliant with the commercial use standards listed in NYCRR PART 375 and shall satisfy the Protection of Groundwater Soil Cleanup Objectives Part 375-6.7(d)(1)(ii)(b).

B. Fertilizer

1. Fertilizer shall be a standard quality commercial carrier of available plant food elements. A complete prepared and packaged material containing a minimum of 10 percent nitrogen, 10 percent phosphoric acid and 10 percent potash.
2. Each bag of fertilizer shall bear the manufacturer's guaranteed statement of analysis.

C. Seed Mixtures

1. Seed mixtures shall be of commercial stock of the current season's crop and shall be delivered in unopened containers bearing the guaranteed analysis of the mix.
2. All seed shall meet the State standards of germination and purity.
3. The seed mixture is specified in Table 1-1 or approved equal.

Table 1-1 Seed Mixtures

| Species | Percent By Weight |
|---------------------------|--------------------------|
| Kentucky Bluegrass | 50 |
| Perennial Rye | 50 |

¹Install seed mix as specified at a rate of 200 pounds per acre. If seed mix is applied in the fall (October 15 to December 1), add 20 pounds per acre of winter wheat (*Triticum aestivum*) or cereal rye (*Secale cereale*).

4. Seeding shall be watered as needed to achieve consistent germination and growth.
- D. Mulch
1. Mulch shall be un-rotted stalks of oats, wheat, rye or other approved crops which are free from noxious weeds, salt, mold, or other objectionable material.
 2. Other sources of mulch may be utilized if they are biodegradable and are approved by the Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All disturbed areas to be top-soiled shall receive a minimum of 6-inches of topsoil. The areas to receive topsoil shall be graded to a depth of not less than 6 inches or as specified below the proposed finished surface.
- B. The topsoil shall not be placed until the subgrade is in suitable condition and shall be free of frost and excessive moisture. All debris and inorganic material shall be removed and the surface loosened for a depth of 2 inches prior to the placing of topsoil.
- C. Top-soiled surfaces shall be seeded in accordance with this Section. All surfaces shall then be fertilized and mulched in accordance with this section.

3.2 APPLICATION PROCEDURES

- A. The finished surface shall conform to the lines and grades of the area before disturbed or as shown on the Contract Drawings. Any irregularities shall be corrected before the placement of fertilizer and seed.
- B. The Contractor shall proceed with the complete landscape work as rapidly as portions of the site become available, working within seasonal limitations of each type of work required.
- C. The fertilizer shall be applied uniformly at the rate of 20 pounds per 1000 square feet.
 1. Following the application of the fertilizer and prior to application of the seed, the topsoil shall be scarified to a depth of at least 2 inches with a disc or other suitable method traveling across the slope if possible.
- D. When the topsoil surface has been fine graded, the seed mixture shall be uniformly applied upon the prepared surface with a mechanical spreader at a rate of not less than 8 pounds per 1000 square feet.
 1. The seed shall be raked lightly into the surface and rolled.
 2. Seeding shall be suspended when wind velocities exceed 5 miles per hour or as directed by the Engineer.
- E. Mulch shall be hand or machine spread to form a continuous blanket over the seed bed, approximately 2 inches uniform thickness at loose measurement. Excessive amounts of bunching of mulch will not be permitted.
 1. Mulch shall be anchored by an acceptable method.
 2. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.
 3. Any anchorage or mulch that has not disintegrated at time of first mowing, shall be removed. Anchors may be removed or driven flush with ground surface.

- F. Seed bed shall be moistened following application of mulch. A muddy soil condition will not be acceptable.
- G. Hydro-seeding may be accepted as an alternative method of applying fertilizer, seed and mulch. The Contractor must submit all data regarding materials and application rates to the Engineer for review.
- H. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed.
- I. The stand of grass resulting from the seeding shall not be considered satisfactory until accepted by the Engineer. An acceptable lawn shall have a minimum of 90% of the area covered with plants of the specified seed mix and no areas greater than one foot square of bare surface. If areas are determined to be unacceptable, the remaining mulch will be removed and all areas shall be reseeded, re-fertilized and re-mulched as per the above application procedures at the Contractor's expense.

3.3 MAINTENANCE

- A. The Contractor shall begin maintenance period immediately after planting of landscape materials.
- B. The Contractor shall maintain grass areas, for the periods required to establish an acceptable growth, but not less than 60 days after date of substantial completion. If seeded in the fall and not given a full 60 days of maintenance, or if not considered acceptable by the Engineer at that time, continue maintenance during following spring until acceptable, grass stand is established.
- C. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed.

END OF SECTION



Appendix C
Construction Work Plan
(CWP)

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE CONSTRUCTION WORK PLAN



September 2019



TABLE OF CONTENTS

| | |
|--|---|
| 1. Introduction | 1 |
| 2. Mobilization and Site Preparation..... | 1 |
| 2.1 Erosion Controls..... | 1 |
| 2.2 Site Fencing and Stabilized Construction Access | 1 |
| 2.3 Staging Area..... | 1 |
| 3. Excavation..... | 1 |
| 3.1 Sequencing of Excavation..... | 1 |
| 3.2 Dust and Odor Control..... | 2 |
| 3.3 Construction Water Management..... | 2 |
| 4. Subsurface Utilities and Excavation Adjacent to Buildings | 2 |
| 4.1 Review of Subsurface Utilities..... | 2 |
| 4.2 Protection of Existing Buildings | 2 |
| 5. Backfill | 3 |
| 5.1 Type 'E' Select Fill | 3 |
| 5.2 Topsoil | 3 |
| 6. Restoration | 3 |
| 6.1 Seeding | 3 |
| 6.2 Monitoring Wells..... | 3 |
| 6.3 Site Fencing..... | 3 |
| 7. Demobilization..... | 3 |

1. INTRODUCTION

The Construction Work Plan (CWP) has been developed to perform excavation and remedial operations for the 1318 Niagara Street site (Site) in Buffalo, NY. The scope of construction work will primarily consist of removing polychlorinated biphenyl (PCB)-impacted soils from the Site. This CWP identifies the anticipated methods and procedures to be followed during execution of the work scope in accordance with the NYSDEC approved design specifications. O'Brien & Gere Engineers, Inc., Part of Ramboll (OBG) is the engineer and Groundwater and Environmental Services, Inc. (GES) is the contractor for the work described in this document.

2. MOBILIZATION AND SITE PREPARATION

2.1 EROSION CONTROLS

GES will install silt barriers as specified by detail 'B', sheet **C-501** of the design drawings. Because the site slopes downward in elevation to the west, the selected erosion control measure will be installed at the western property boundary as indicated on the design drawings.

2.2 SITE FENCING AND STABILIZED CONSTRUCTION ACCESS

GES will install the stabilized construction access at the location of the existing curb-cut along Niagara Street as specified by detail 'E', sheet **C-501** of the design drawings. The existing fence to the north and east of the site will be removed before excavation. Temporary construction fencing will be installed at the northern and eastern property boundaries. The construction fencing on the east side of the site will be left in place until grass establishes in the Spring of 2020. The existing fence on the west side of the property will be left in place until excavation is complete. Once excavation is complete, the existing fence will be removed from CSX Transportation property and a new fence will be installed on the north and western property line of the 1318 Niagara Street property.

2.3 STAGING AREA

When possible, excavated material will be directly loaded into trucks. However, some excavated soil will be temporarily staged on top of 40-mil polyethylene sheets. The staging area will be moved from west to east as excavations progress from west to east across the site. Stockpiles will be covered at the end of each work day and before anticipated rain events.

3. EXCAVATION

3.1 SEQUENCING OF EXCAVATION

Prior to excavation, a licensed surveyor will stake out the limits of Toxic Substances Control Act (TSCA) regulated and non-TSCA excavation limits. Areas delineated as TSCA-soils will be targeted for removal prior to removal of non-TSCA-soils. When possible, trucks will be directly loaded daily with excavated soil by a single excavator. Once targeted TSCA excavations have been completed, or when no trucks certified to transport TSCA-soils are available, non-TSCA-soils will be removed from west to east. Before transitioning from TSCA to non-TSCA the excavator bucket will either be replaced or decontaminated. The contractor shall provide 6 mil polyethylene sheeting to cover the ground in all areas being used to load excavated material into trucks whether in or out of the limits of work.

The concrete pad at the northeastern corner of the site will be removed last, prior to removal of the stabilized construction entrance. Before the concrete pad is removed, it may be used as a staging area for contractor equipment. A surveyor will be on-site to record elevation data from the bottom of completed excavations and to confirm that the target depth has been reached across the site.

3.2 DUST AND ODOR CONTROL

Dust monitoring will consist of continuous real-time air measurements of particulate matter less than 10 microns (PM₁₀) using portable monitors as described in the *Community Air Monitoring Plan (Appendix D)*.

Primary measures to be implemented to minimize the generation of dust and odor shall be minimizing, to extent practicable, exposed surfaces of waste material and contaminated soil. If the downwind PM₁₀ level is 100 µg/m³ above the upwind level for a 15-minute period or if airborne dust is observed leaving the site perimeter, secondary measures shall be employed. Water spray and polyethylene sheeting (for covering excavation faces, material stockpiles, etc.) as a dust control measure may be used, depending on specific circumstances, field observations, and air monitoring results.

If, after implementation of dust suppression techniques, downwind PM₁₀ levels are greater than 150 µg/m³ above the upwind level, work will be stopped, and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM₁₀ concentration to within 150 µg/m³ of the upwind level and in preventing visible off-site dust migration.

3.3 CONSTRUCTION WATER MANAGEMENT

Due to the shallow depth of excavations proposed, groundwater is not anticipated to be encountered. Historic monitoring well logs show groundwater at a depth of approximately 15 feet or greater. Rainwater will be allowed to infiltrate into shallow excavations during construction. Excavations will not be backfilled until all planned excavations are completed to prevent rainwater from potentially impacted areas from running off into clean fill. Stockpiles will be covered during rain events to prevent impacted material from running off site or into remediated zones. Decontamination water will be collected in a tote over a temporary decontamination pad. This water will be disposed of at a NYSDEC approved facility.

4. SUBSURFACE UTILITIES AND EXCAVATION ADJACENT TO BUILDINGS

4.1 REVIEW OF SUBSURFACE UTILITIES

Prior to excavation, GES will call Dig Safely New York (8-1-1) to perform a subsurface utility mark out for 1318 Niagara Street and the limits of excavation work. GES will review available information detailing the existing subsurface utility lines located along and inside the property.

On the south-east side of 1330 Niagara Street, there is a gas utility that borders 1318 Niagara Street. The utility is currently fenced off from the 1318 Niagara Street property and is entirely above-ground, west of the sidewalk. This utility will be protected during demolition and removal of the concrete pad on the 1318 Niagara Street property.

Additionally, a prior dig-safe mark out identified a water valve on the sidewalk on the east side of 1318 Niagara Street. It is assumed that this utility once supplied water to the building that used to exist on site and has been abandoned. GES will excavate this utility by hand (or use other soft dig techniques) to identify the depth and location of the water utility, and any other utilities identified by the dig-safe mark out.

4.2 PROTECTION OF EXISTING BUILDINGS

The proposed excavations take place along existing buildings to the north and the south of the site. As shown in detail 'A', sheet C-501 of the design drawings, excavations and backfill within 2 feet of an existing building shall be completed by hand. 1 foot of soil, maximum, shall be removed from within 5 feet of an existing building. In areas where the proposed excavation is deeper than 1 foot along a building, the excavation will slope down from the 5-foot offset from the building at a 1:1 to the target depth, and the final grade will be increased by 1 foot to provide 2 feet of cover above material left in place.

5. BACKFILL

The names and locations of off-site borrow sources for common fill material and topsoil required for backfilling purposes will be submitted prior to importing materials on site. GES will collect and submit samples of the borrow source that meets the geotechnical properties required for the project for sieve analysis and chemical properties. Results of chemical and geotechnical testing will be submitted to OBG for review for compliance with NYSDEC DER-10 requirements and NYSDEC's emerging contaminant sampling guidance specified on the design drawings.

5.1 TYPE 'E' SELECT FILL

Following the completion of the proposed excavations and appropriate sampling described in the *Sampling and Analysis Plan (Appendix E)*, an excavator will be used to place backfill in the excavations. Backfilling in some areas prior to completion of all excavations may be necessary to allow for other site activities. Backfill shall be compacted to 85% modified proctor maximum density. A dozer or skid steer will be used for spreading and grading the common fill. An onsite surveyor will confirm that subgrades are restored to 6 inches below pre-construction surface elevations prior to topsoil placement.

5.2 TOPSOIL

Following the placement and compaction of common fill, GES will place 6 inches (minimum) of topsoil across the site with a dozer or skid steer. The site will be mechanically raked prior to placing topsoil to promote bonding of the topsoil to the subgrade and promote infiltration.

6. RESTORATION

6.1 SEEDING

Once backfilling is complete, grass seed will be applied via hydroseeding to the site as indicated in specification 32 93 13 Topsoil and Seeding.

6.2 MONITORING WELLS

Following excavation, the five existing monitoring wells will be cut and made flush with final grade as shown on the design drawings Detail 'F', sheet **C-501**. Traffic cones and flags will be used to mark out the monitoring wells during construction to improve visibility. Excavation within two feet of the existing monitoring wells will be completed by hand.

6.3 SITE FENCING

Following excavation, the existing western fence will be removed and replaced by a new chain link fence along the northern and western surveyed property line on the as shown on the design drawings. A construction fence will be left on the eastern boundary of the site until grass seed has established in the Spring of 2020.

7. DEMOBILIZATION

Following excavation and prior to demobilization, GES will perform decontamination of construction equipment used to handle PCB impacted soils. The excavator will be decontaminated on the stabilized construction access at the end of excavation. Following decontamination, the excavator will be backed onto Niagara Street on 60-mil polyethylene sheets. From the street, the excavator will remove the stabilized construction access. Following removal of the stabilized construction access, the bucket of the excavator will be decontaminated once more prior to demobilization. Wipe sampling will be performed to confirm the completion of the decontamination process. Equipment will not be removed from the site until wipe sample results are received by OBG indicating PCB concentrations less than 10 ppm. Silt barriers on the west side of the property and construction fencing on the east side of the property will remain on-site until the grass seed establishes on site in the Spring of 2020. GES will remove the silt barriers and fencing at that time.



Appendix D
Community Air
Monitoring Plan (CAMP)

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE COMMUNITY AIR MONITORING PLAN



September 2019



TABLE OF CONTENTS

| | |
|---|----|
| List of Figures..... | ii |
| List of Exhibits | ii |
| 1. Introduction..... | 1 |
| 2. Community Receptors..... | 1 |
| 3. Monitoring Locations | 1 |
| 4. Dust Monitoring..... | 1 |
| 5. Quality Control and Quality Assurance..... | 2 |
| 6. Data Management and Reporting | 2 |

LIST OF FIGURES

Figure 1 – Perimeter Air Quality Monitoring Boundary

LIST OF EXHIBITS

Exhibit 1 – Generic Community Air Monitoring Plan

1. INTRODUCTION

The objective of this Community Air Monitoring Plan (CAMP) is to describe air monitoring during the interim remedial measure (IRM) for 1318 Niagara Street, in the city of Buffalo, Erie County, New York (Site). The IRM includes earthmoving activities that include the following:

- Temporary construction fencing
- Excavation of impacted soil
- Backfilling of excavated material

Perimeter air monitoring will evaluate potential air quality impacts from earthmoving activities at the Site from dust. Emissions of volatile organic compounds (VOCs) are not anticipated. The air monitoring program described herein has been designed using the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan* (gCAMP) guidance for evaluation of potential airborne contaminant releases as a direct result of investigative and remedial work activities¹.

2. COMMUNITY RECEPTORS

The Site is primarily bordered to the north and south by commercial buildings, to the east by Niagara Street, and to the west by the Penn Central Railroad corridor. Based on review of aerial photographs, the nearest receptors to the Site consist of the Mentholatum Apartment building approximately 275 feet to the north; private homes and commercial properties immediately east of the Site, along Niagara Street; Broderick Park approximately 1,400 feet to the southwest, and a multi-tenant commercial office building bordering the Site to the south.

3. MONITORING LOCATIONS

Air monitoring will be conducted along or within the air monitoring perimeter boundary line, shown on **Figure 1**, established at the Site property line. Air monitoring locations will be selected at the beginning of each work day based on the predicted predominant wind direction for the day. There will be one upwind and one downwind monitoring station; however, in cases where there are two spatially separated work areas, two downwind stations will be operated so one is downwind of each work area. The upwind dust monitor will be used to evaluate ambient background dust for downwind locations.

Air monitoring station locations may be moved during the day if the predominant wind direction shifts into a new quadrant or if the work area changes. Site wind conditions will be monitored each day by a 10-foot weather station. The weather station location will be determined at the start of the perimeter air monitoring effort and will be dependent on the location of clear, unobstructed and secure areas within the Site.

4. DUST MONITORING

Dust monitoring will consist of continuous real-time air measurements of particulate matter less than 10 microns (PM₁₀) using portable aerosol monitors (ThermoFisher ADR-1500 or DustTrak 8533, or equivalent). The ADR and DustTrak are photometric light-scattering instruments that continuously measure airborne particulates from 1 microgram per cubic meter (µg/m³) to over 100 milligrams per cubic meter (mg/m³) and record the results in time-averaged concentrations.

¹ *Generic Community Air Monitoring Plan*, New York State Department of Health, Revision 1, June 2000.

Dust monitoring work perimeter limits will be based on guidance contained in the NYSDOH gCAMP. Dust levels will be expressed as 15-minute time-averaged concentrations. Work perimeter limits and corrective responses will be as follows:

- **Control Level** - If the downwind PM₁₀ level is 100 µg/m³ above the upwind level for a 15-minute period or if airborne dust is observed leaving the site perimeter, then additional dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM₁₀ levels do not exceed 150 µg/m³ above the upwind level and provided that no visible dust is migrating from the work area.
- **Work Perimeter Limit** - If, after implementation of dust suppression techniques, downwind PM₁₀ levels are greater than 150 µg/m³ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM₁₀ concentration to within 150 µg/m³ of the upwind level and in preventing visible off-site dust migration.

Background will be identified by the upwind station concentrations for each 15-minute period. Each dust monitor will automatically alert an air monitoring technician (either visual or audible alarm, pager, or text message) to indicate high readings that may lead to potential exceedances of work perimeter limits. The air monitoring technician will then alert the site construction manager.

5. QUALITY CONTROL AND QUALITY ASSURANCE

Calibration checks and daily routine maintenance of real-time dust analyzers will be conducted at the beginning of each day following applicable manufacturer's guidelines. Records of daily field activities, instrument field checks and daily calibrations will be documented in a field site log or on pre-printed field forms.

6. DATA MANAGEMENT AND REPORTING

Data will be manually or automatically saved to a PC computer each day. Data will be reviewed to evaluate periods of valid and invalid data, and results summarized in weekly reports, which will include the following for each monitoring day:

- construction activities and air monitoring period,
- air monitoring station locations,
- summary of air monitoring results,
- meteorological summary including shifts in wind direction requiring station re-location, and
- summary of any action level or work perimeter limit exceedances, and corrective response.

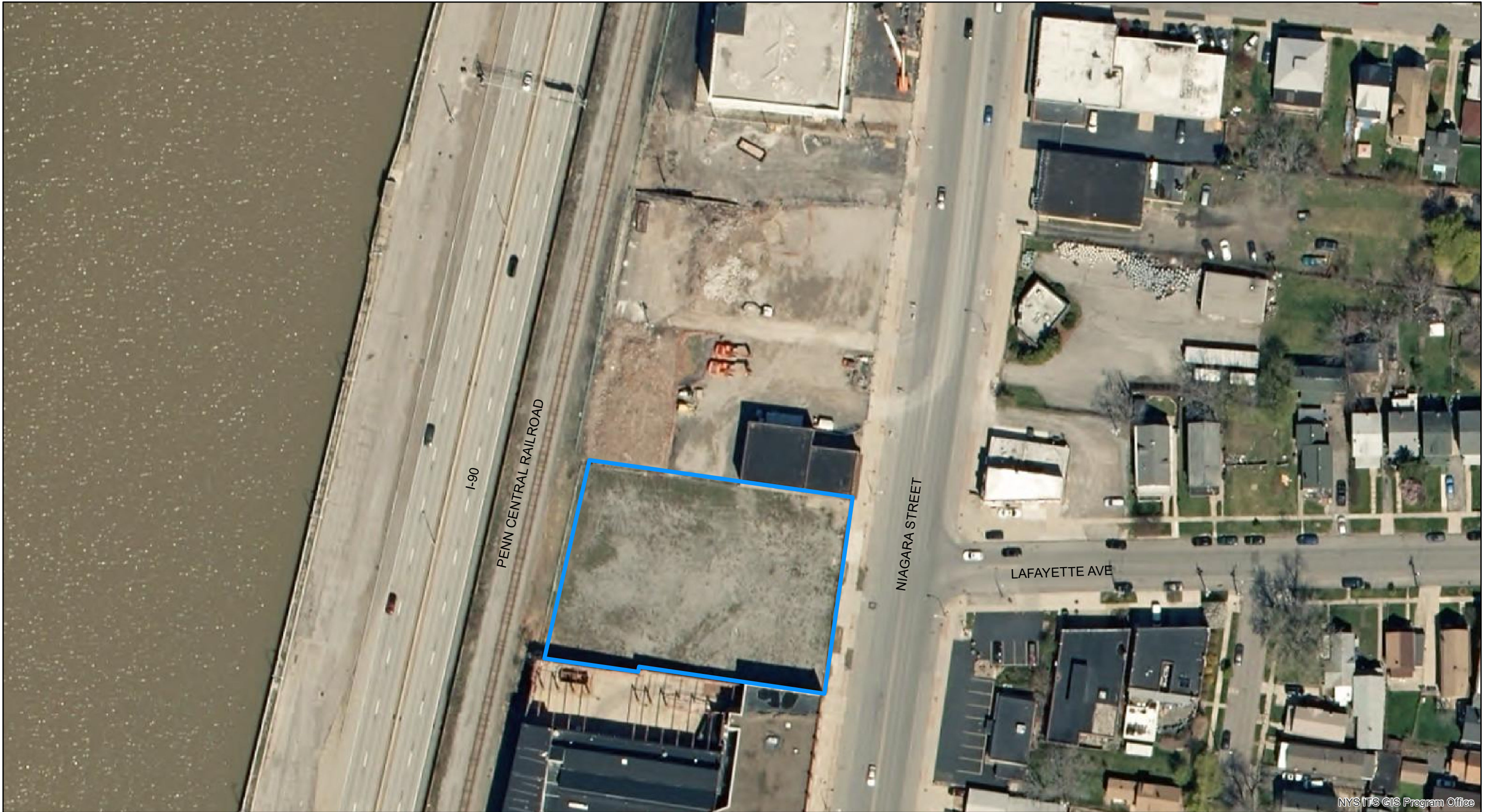
NYSDEC will be notified of exceedances of the action levels pursuant to the requirements in NYSDEC's DER-10 guidance (Section 5.4(a)3).

At the conclusion of the air monitoring program, final results will be presented, as part of the project construction completion report that will include:

- air monitoring methodologies,
- weekly summaries of air monitoring results, and
- a tabulated summary of the action level exceedances, if any occur.



Figures



NYS ITS GIS Program Office

LEGEND

 AIR QUALITY MONITORING BOUNDARY

NYSDEC
INTERIM REMEDIAL MEASURE
1318 NIAGARA STREET
BUFFALO, NY



PERIMETER AIR QUALITY
MONITORING BOUNDARY



O'BRIEN & GERE ENGINEERS, INC.

8653.71532
JUNE 2019



Exhibits

New York State Department of Health Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

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Appendix E
Sampling and Analysis
Plan

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE SAMPLING AND ANALYSIS PLAN



September 2019



TABLE OF CONTENTS

| | |
|---|-----|
| List of Tables..... | iii |
| List of Figures..... | iii |
| List of Attachments..... | iii |
| 1. Introduction..... | 1 |
| 1.1 Background..... | 1 |
| 2. Excavation Approach..... | 1 |
| 3. Confirmation and Documentation Sampling..... | 2 |
| Confirmation Sampling..... | 2 |
| Documentation Sampling..... | 2 |
| 4. Soil Sampling And Analysis Procedures..... | 2 |

LIST OF TABLES

- 1 Sample Data Sources

LIST OF FIGURES

- 1 Distribution of Soil Samples
- 2 Confirmation and Documentation Sampling Locations

LIST OF ATTACHMENTS

- 1 Soil Sample Analytical Data

1. INTRODUCTION

This Sampling and Analysis Plan (SAP) has been developed to support the implementation of the interim remedial measure (IRM) for the 1318 Niagara Street site (Site) in Buffalo, NY. The objective of the IRM is to remove and dispose of soil in areas where the concentrations of polychlorinated biphenyls (PCBs) exceeds 1 ppm in the first 2 feet of soil, as established by the NYSDEC Restricted Residential soil cleanup objective. The purpose of this SAP is to document the sampling and analysis program that will be used for the confirmation and documentation samples collected after excavation.

This SAP provides information pertaining to sampling strategy, sample collection, and analysis of samples from the bottom of excavations following the removal of the soil.

1.1 BACKGROUND

Investigations were completed at the 1318 Niagara Street site, at the intersection of Niagara Street and Lafayette Avenue between 2011 and 2018 to characterize the horizontal and vertical extent of polychlorinated biphenyls (PCBs) within the Site. **Figure 1** illustrates the distribution of the sample locations completed and presents the depths of soil containing PCBs at concentrations below 1 ppm, between 1 and 10 ppm, between 10 and 50 ppm, and above 50 ppm. The analytical data associated with these sample locations are provided in tables included as **Attachment 1**. A site investigation was conducted by LiRo Engineers, Inc. in June and July 2011 to characterize the Site chemical and physical conditions. Additional site investigations were conducted by GES between April 2015 and July 2018. The locations of samples SB-101-193 are based on handheld GPS points collected by GES. Samples SB-194-204 were collected in August 2019 and were also located by handheld GPS collected by GES. The sources for the data are included in **Table 1**.

Figure 1 shows a distribution of PCBs with the highest concentrations located south and east of Area C, to the north and south of Area A, and just west of the UST excavation area, and in the northwest corner of the Site below Area B. These locations exhibit soils with concentrations greater than 50 ppm.

Sheet **C-103** of the design drawings presents the proposed limits of excavation for this IRM. As illustrated, 1 to 4 feet of soil will be removed from the surface within the Site boundaries to facilitate placement of the cover material.

2. EXCAVATION APPROACH

Soil to be removed from the excavation areas falls into two categories. Soil containing PCBs at concentrations less than 50 mg/kg will be managed as a solid waste, while soil containing PCBs at concentrations of 50 mg/kg or greater will be managed as a Toxic Substances Control Act (TSCA) waste. In New York State, soil containing PCB concentrations of 50 mg/kg or greater is also required to be managed as hazardous waste. Soil containing PCB concentrations greater than 50 mg/kg will be removed from a given area prior to removal of the remaining material that contains PCBs greater than 1 mg/kg and less than 50 mg/kg.

Sheet **C-103** of the design drawings presents the limits of the 2-4 feet deep removals for soils containing PCBs greater than 50 mg/kg and 1-, 2-, or 4-foot deep removals for soils containing PCBs greater than 1 but less than 50 mg/kg.

The confirmation and documentation sampling program approach that follows considers each of these categories. 1-foot excavations may be backfilled only if confirmation sample results indicate a concentration of 1 ppm or less PCBs. If confirmation sample results indicate a concentration greater than 1 ppm PCBs, a 60-foot by 60-foot by 1-foot deep excavation will be performed, centered on the sample location, and the bottom of the excavation shall be sampled as a documentation sample. 2 to 4-foot excavations may be backfilled once documentation samples have been collected.

3. CONFIRMATION AND DOCUMENTATION SAMPLING

The purpose of the confirmation sampling program is to confirm that the soil material at a depth of less than 2 feet below ground surface (*i.e.*, 1 foot below ground surface) has a concentration of 1 ppm or less PCBs. The purpose of the documentation sampling program is to document the concentration of soil material at a depth of 2 feet or greater below ground surface.

CONFIRMATION SAMPLING

To confirm the concentrations of PCBs at a depth of less than 2 feet below ground surface, samples of soil will be collected from the floor of 1-foot excavations and analyzed for PCBs. Confirmation and documentation samples collected from the base of excavations will be spaced on a grid having a 30-ft spacing for a total of 44 confirmation samples across the site (a frequency of approximately 1 sample per 900 square feet when combined with initial documentation samples). The locations of confirmation samples to be collected from excavation bottoms are shown in **Figure 2**.

DOCUMENTATION SAMPLING

To document the concentrations of PCBs that will remain in place at the base of the excavation, samples of soil will be collected from the floor of excavations and analyzed for PCBs. Confirmation and documentation samples collected from the base of excavations 2 feet in depth or greater will be collected on a grid having a 30-ft spacing for a total of 23 initial documentation samples across the site (a frequency of approximately 1 sample per 900 square feet when combined with confirmation samples). The locations of initial documentation samples to be collected from excavation bottoms are shown in **Figure 2**.

The Site is bordered to the east and west by the Niagara Street sidewalk and CSX Railroad, respectively. A building borders the entire length of the Site to the south and partially to the north. Documentation sampling is proposed along the north, east, and west Site perimeter. Additional sidewall samples will be collected along the sidewalls of the proposed 4-foot excavation. The proposed documentation sampling frequency will be 1 sample every 50 ft, for a total of 14 sidewall samples. Documentation sampling locations along the sidewalls are also shown in **Figure 2**.

4. SOIL SAMPLING AND ANALYSIS PROCEDURES

Soil samples will be collected from the upper 2 inches of the excavation bottom. Sidewall samples will be composites across the other 2 inches of the entire exposed sidewall of the excavation (1, 2, or 4 feet). Samples will be collected using a disposable scoop, or clean trowel or stainless-steel spoon. Samples will be transferred to a disposable aluminum pan and homogenized by mixing with the sampling implement. Subsequent to homogenization, soils will be transferred to the laboratory container appropriate for the analyses and placed in a cooler containing ice for transport to the laboratory. Following sample collection, a handheld GPS will be used to record the sample location.

Non-disposable soil sampling equipment will be decontaminated between samples (washed with a non-phosphate detergent solution and rinsed with deionized water). Water generated during this process will be placed in a container and treated with other water generated during construction. Soil samples will be delivered to a New York State Environmental Laboratory Approval Program- (ELAP-) certified laboratory for analysis. Quality Assurance/Quality Control samples consisting of a field duplicate, Matrix Spike, and Matrix Spike Duplicate will also be collected and submitted for analysis with the samples at a frequency of 1 per 20 samples or a minimum of 1 per sample delivery group.

The collected soil samples will be analyzed for PCBs using USEPA Method 8082 with a Level IV analytical data package, consistent with New York State Analytical Services Protocol (ASP) Category B. The target detection limit for each PCB Aroclor will allow for comparison to the 1 mg/kg soil clean up objective (SCO) for PCBs. At least 10% of the analytical data results will be validated by an independent expert, who will prepare and submit a data usability summary report (DUSR) at the end of the construction program.



Tables

Table 1 - Sample Data Sources

| Sample ID | Sample Date | Report Name | Report Author | Report Date |
|-----------|-------------|-------------|---------------------|-------------|
| SB-01 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-02 | 6/21/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-03 | 6/22/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-04 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-05 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-06 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-07 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-08 | 6/21/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-10 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-11 | 6/21/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-13 | 6/20/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-14 | 6/22/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| SB-101 | 4/6/2015 | | Provided by GES | 2019 |
| SB-102 | 4/6/2015 | | Provided by GES | 2019 |
| SB-103 | 4/6/2015 | | Provided by GES | 2019 |
| SB-104 | 4/6/2015 | | Provided by GES | 2019 |
| SB-105 | 4/6/2015 | | Provided by GES | 2019 |
| SB-106 | 4/6/2015 | | Provided by GES | 2019 |
| SB-107 | 4/6/2015 | | Provided by GES | 2019 |
| SB-108 | 4/6/2015 | | Provided by GES | 2019 |
| SB-109 | 4/6/2015 | | Provided by GES | 2019 |
| SB-110 | 4/6/2015 | | Provided by GES | 2019 |
| SB-111 | 4/6/2015 | | Provided by GES | 2019 |
| SB-112 | 4/6/2015 | | Provided by GES | 2019 |
| SB-113 | 4/6/2015 | | Provided by GES | 2019 |
| SB-114 | 4/7/2015 | | Provided by GES | 2019 |
| SB-115 | 4/7/2015 | | Provided by GES | 2019 |
| SB-116 | 4/7/2015 | | Provided by GES | 2019 |
| SB-117 | 4/7/2015 | | Provided by GES | 2019 |
| SB-118 | 4/7/2015 | | Provided by GES | 2019 |
| SB-119 | 4/7/2015 | | Provided by GES | 2019 |
| SB-120 | 4/7/2015 | | Provided by GES | 2019 |
| SB-121 | 4/7/2015 | | Provided by GES | 2019 |
| SB-122 | 4/27/2015 | | Provided by GES | 2019 |
| SB-123 | 4/27/2015 | | Provided by GES | 2019 |
| SB-124 | 4/27/2015 | | Provided by GES | 2019 |
| SB-125 | 4/27/2015 | | Provided by GES | 2019 |
| SB-126 | 4/27/2015 | | Provided by GES | 2019 |
| SB-127 | 4/27/2015 | | Provided by GES | 2019 |
| SB-128 | 4/27/2015 | | Provided by GES | 2019 |
| SB-129 | 4/27/2015 | | Provided by GES | 2019 |
| SB-130 | 4/27/2015 | | Provided by GES | 2019 |

Table 1 - Sample Data Sources

| Sample ID | Sample Date | Report Name | Report Author | Report Date |
|-----------|-------------|-------------|-----------------|-------------|
| SB-131 | 4/27/2015 | | Provided by GES | 2019 |
| SB-132 | 4/27/2015 | | Provided by GES | 2019 |
| SB-133 | 4/27/2015 | | Provided by GES | 2019 |
| SB-134 | 4/27/2015 | | Provided by GES | 2019 |
| SB-135A | 5/19/2015 | | Provided by GES | 2019 |
| SB-136 | 5/19/2015 | | Provided by GES | 2019 |
| SB-137 | 5/19/2015 | | Provided by GES | 2019 |
| SB-138 | 5/19/2015 | | Provided by GES | 2019 |
| SB-139 | 5/19/2015 | | Provided by GES | 2019 |
| SB-140 | 5/19/2015 | | Provided by GES | 2019 |
| SB-141 | 6/12/2015 | | Provided by GES | 2019 |
| SB-142 | 6/12/2015 | | Provided by GES | 2019 |
| SB-143 | 6/12/2015 | | Provided by GES | 2019 |
| SB-144 | 6/12/2015 | | Provided by GES | 2019 |
| SB-145 | 6/12/2015 | | Provided by GES | 2019 |
| SB-146 | 6/12/2015 | | Provided by GES | 2019 |
| SB-147 | 6/12/2015 | | Provided by GES | 2019 |
| SB-148 | 6/12/2015 | | Provided by GES | 2019 |
| SB-149 | 6/12/2015 | | Provided by GES | 2019 |
| SB-150 | 6/12/2015 | | Provided by GES | 2019 |
| SB-151 | 12/11/2015 | | Provided by GES | 2019 |
| SB-152 | 12/11/2015 | | Provided by GES | 2019 |
| SB-153 | 12/11/2015 | | Provided by GES | 2019 |
| SB-154 | 12/11/2015 | | Provided by GES | 2019 |
| SB-155 | 1/19/2016 | | Provided by GES | 2019 |
| SB-156 | 1/19/2016 | | Provided by GES | 2019 |
| SB-157 | 1/19/2016 | | Provided by GES | 2019 |
| SB-158 | 1/19/2016 | | Provided by GES | 2019 |
| SB-159 | 1/19/2016 | | Provided by GES | 2019 |
| SB-160 | 1/19/2016 | | Provided by GES | 2019 |
| SB-161 | 1/19/2016 | | Provided by GES | 2019 |
| SB-162 | 7/12/2018 | | Provided by GES | 2019 |
| SB-163 | 7/12/2018 | | Provided by GES | 2019 |
| SB-164 | 7/12/2018 | | Provided by GES | 2019 |
| SB-165 | 7/12/2018 | | Provided by GES | 2019 |
| SB-166 | 7/12/2018 | | Provided by GES | 2019 |
| SB-167 | 7/12/2018 | | Provided by GES | 2019 |
| SB-168 | 7/12/2018 | | Provided by GES | 2019 |
| SB-169 | 7/12/2018 | | Provided by GES | 2019 |
| SB-170 | 7/12/2018 | | Provided by GES | 2019 |
| SB-171 | 7/12/2018 | | Provided by GES | 2019 |
| SB-172 | 7/12/2018 | | Provided by GES | 2019 |

Table 1 - Sample Data Sources

| Sample ID | Sample Date | Report Name | Report Author | Report Date |
|-----------|-------------|-------------|---------------------|-------------|
| SB-173 | 7/12/2018 | | Provided by GES | 2019 |
| SB-174 | 7/12/2018 | | Provided by GES | 2019 |
| SB-175 | 7/13/2018 | | Provided by GES | 2019 |
| SB-176 | 7/13/2018 | | Provided by GES | 2019 |
| SB-177 | 7/13/2018 | | Provided by GES | 2019 |
| SB-178 | 7/13/2018 | | Provided by GES | 2019 |
| SB-179 | 7/13/2018 | | Provided by GES | 2019 |
| SB-180 | 7/13/2018 | | Provided by GES | 2019 |
| SB-181 | 7/13/2018 | | Provided by GES | 2019 |
| SB-182 | 7/13/2018 | | Provided by GES | 2019 |
| SB-183 | 7/13/2018 | | Provided by GES | 2019 |
| SB-184 | 7/13/2018 | | Provided by GES | 2019 |
| SB-185 | 7/14/2018 | | Provided by GES | 2019 |
| SB-186 | 7/15/2018 | | Provided by GES | 2019 |
| SB-187 | 7/16/2018 | | Provided by GES | 2019 |
| SB-188 | 7/17/2018 | | Provided by GES | 2019 |
| SB-189 | 7/18/2018 | | Provided by GES | 2019 |
| SB-190 | 7/19/2018 | | Provided by GES | 2019 |
| SB-191 | 7/20/2018 | | Provided by GES | 2019 |
| SB-192 | 7/21/2018 | | Provided by GES | 2019 |
| SB-193 | 7/22/2018 | | Provided by GES | 2019 |
| SB-194 | 8/9/2019 | | Provided by GES | 2019 |
| SB-195 | 8/9/2019 | | Provided by GES | 2019 |
| SB-196 | 8/9/2019 | | Provided by GES | 2019 |
| SB-197 | 8/9/2019 | | Provided by GES | 2019 |
| SB-198 | 8/9/2019 | | Provided by GES | 2019 |
| SB-199 | 8/9/2019 | | Provided by GES | 2019 |
| SB-200 | 8/9/2019 | | Provided by GES | 2019 |
| SB-201 | 8/9/2019 | | Provided by GES | 2019 |
| SB-202 | 8/9/2019 | | Provided by GES | 2019 |
| SB-203 | 8/9/2019 | | Provided by GES | 2019 |
| SB-204 | 8/9/2019 | | Provided by GES | 2019 |
| GP-1 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-2 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-3 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-4 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-5 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-6 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-7 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-8 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-9 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-10 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |

Table 1 - Sample Data Sources

| Sample ID | Sample Date | Report Name | Report Author | Report Date |
|-----------------------------|-------------|-------------|---------------------|-------------|
| GP-11 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-12 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-13 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-14 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-15 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-16 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-17 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-18 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-19 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-20 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-21 | 11/8/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-22 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-23 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-24 | 11/9/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-25 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| GP-26 | 11/10/2011 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (West) - Bottom-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (West) - Westwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (West) - Northwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (West) - Eastwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (West) - Southwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (East) - Bottom-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (East) - Westwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (East) - Northwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (East) - Eastwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area A (East) - Southwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area B - Bottom-1 (West) | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area B - Bottom-1 (East) | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area B - Westwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area B - Northwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area B - Southwall-3 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area C - Bottom-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area C - Westwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area C - Northwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area C - Eastwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area C - Southwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area D - Bottom-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area D - Westwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area D - Northwall-2 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area D - Eastwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area D - Southwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area E - Bottom-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |

Table 1 - Sample Data Sources

| Sample ID | Sample Date | Report Name | Report Author | Report Date |
|----------------------|-------------|-------------|---------------------|-------------|
| Area E - Westwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area E - Northwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area E - Eastwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |
| Area E - Southwall-1 | Jan-2013 | SI_RAR | LiRo Engineers, Inc | 6/14/2013 |

Notes

SI_RAR - Site Investigation and Remedial Alternatives Report dated June 14, 2013

GES - Groundwater and Environmental Services



Figures

8/30/2019 2:26:16 PM

I:\Parsons-Eng.8653171532.Remedial-Design\DWG\MXD\FIG 1 - Distribution of Soil Samples.mxd



NYS ITS GIS Program Office

LEGEND

| CONCENTRATION OF SAMPLES COLLECTED AFTER 2015 | CONCENTRATION OF SAMPLES COLLECTED BEFORE 2015 | MONITORING WELLS |
|---|--|----------------------------------|
| ● < 1 PPM | ▲ < 1 PPM | ◆ MONITORING WELLS |
| ● 1 TO 10 PPM | ▲ 1 TO 10 PPM | — PROPERTY LINE |
| ● 10 TO 50 PPM | ▲ 10 TO 50 PPM | — PREVIOUS IRM EXCAVATION LIMITS |
| ● > 50 PPM | ▲ > 50 PPM | |

NYSDEC
INTERIM REMEDIAL MEASURE
1318 NIAGARA STREET
BUFFALO, NY



DISTRIBUTION OF
SOIL SAMPLES

8653.71532
AUGUST 2019



O'BRIEN & GERE ENGINEERS, INC.

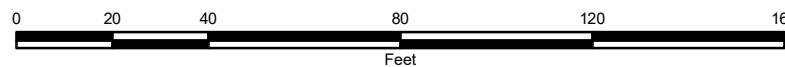


NYS ITS GIS Program Office

Legend

- DOCUMENTATION BOTTOM SAMPLE LOCATIONS
- CONFIRMATION BOTTOM SAMPLE LOCATIONS
- ▲ DOCUMENTATION SIDEWALL SAMPLE LOCATIONS
- PROPERTY LINE
- LIMIT OF 4-FOOT EXCAVATION

NYSDEC
 INTERIM REMEDIAL MEASURE
 1318 NIAGARA STREET
 BUFFALO, NY



CONFIRMATION AND DOCUMENTATION
 SAMPLING LOCATIONS

8653.71532
 SEPTEMBER 2019



O'BRIEN & GERE ENGINEERS, INC.



Attachments

TABLE 1
Preliminary Site Investigation (2009) Surface Soil Sampling Results for PCB's
1318 Niagara Street,
Buffalo, NY

| Sample Designation | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SS-1 | SS-2 | SS-3 | SS-4 | SS-5 |
|----------------------------------|--|---|--------------|-------------|-------------|--------------|-------------|
| Depth Interval (ft. bgs) | | | 0-2" | 0-6" | 0-2" | 0-6" | 0-2" |
| Date Sampled | | | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1221 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1232 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1242 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1248 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1254 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1260 | NS | NS | 48000 | 3100 | 1800 | 35000 | 2400 |
| Polychlorinated biphenyls, Total | 100 | 1000 | 48000 | 3100 | 1800 | 35000 | 2400 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from the Part 375.
- 4) <= not detected - below the laboratory's Reporting Limit (RL).
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = Non Detect

TABLE 1

Preliminary Site Investigation (2009) Surface Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Designation | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SS-6 | SS-7 | SS-8 | SS-9 | SS-10 |
|----------------------------------|--|---|------------|------------|-----------|-----------|------------|
| Depth Interval (ft. bgs) | | | 0-2" | 0-2" | 0-6" | 0-6" | 0-2" |
| Date Sampled | | | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1221 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1232 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1242 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1248 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1254 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1260 | NS | NS | <u>960</u> | <u>210</u> | 43 | 71 | <u>310</u> |
| Polychlorinated biphenyls, Total | 100 | 1000 | <u>960</u> | <u>210</u> | 43 | 71 | <u>310</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from the Part 375.
- 4) <= not detected - below the laboratory's Reporting Limit (RL).
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = Non Detect

TABLE 1

Preliminary Site Investigation (2009) Surface Soil Sampling Results for PCB's
1318 Niagara Street,
Buffalo, NY

| Sample Designation | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SS-11 | SS-12 | SS-13-SED | SS-14-SED | SS-15-SED |
|----------------------------------|--|---|-----------|----------------------|-----------|-----------|-----------------------|
| Depth Interval (ft. bgs) | | | 0-2" | 0-2" | 0-6" | 0-3" | 0-6" |
| Date Sampled | | | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 | 9/24/2009 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1221 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1232 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1242 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1248 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1254 | NS | NS | ND | ND | ND | ND | ND |
| PCB-1260 | NS | NS | 54 | 3000 D | 230 | 96 | 51000 D |
| Polychlorinated biphenyls, Total | 100 | 1000 | 54 | 3000 | 230 | 96 | 51000 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from the Part 375.
- 4) <= not detected - below the laboratory's Reporting Limit (RL).
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = Non Detect

TABLE 14
 SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | MW-01 | MW-01 | MW-02 | MW-03 | MW-04 |
|--------------------------|--|--|--------------|----------------|----------------|----------------|------------|
| Sample Designation | | | MW-01-0'-2' | MW-01-10'-12' | MW-02-16'-18' | MW-03-18'-20' | MW-04-0-4" |
| Depth Interval (ft. bgs) | | | 0.0' to 2.0' | 10.0' to 12.0' | 16.0' to 18.0' | 18.0' to 20.0' | 0" to 4" |
| Date Sampled | | | 6/24/2011 | 6/24/2011 | 6/23/2011 | 6/27/2011 | 6/21/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <96 | <260 | <260 | <240 | <220 |
| PCB-1221 | NS | NS | <96 | <260 | <260 | <240 | <220 |
| PCB-1232 | NS | NS | <96 | <260 | <260 | <240 | <220 |
| PCB-1242 | NS | NS | <96 | <260 | 98 J | <240 | <220 |
| PCB-1248 | NS | NS | <96 | <260 | <260 | <240 | <220 |
| PCB-1254 | NS | NS | <u>110</u> J | <260 | <260 | <240 | <220 |
| PCB-1260 | NS | NS | <96 | <260 | <u>120</u> J | <u>250</u> | <u>560</u> |
| PCBs Total | 100 | 1000 | <u>110</u> | ND | <u>218</u> | <u>250</u> | <u>560</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14
 SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | MW-04 | MW-05 | MW-05 | SB-01 | SB-01 |
|--------------------------|--|--|---------------|-------------|---------------|-------------|----------------|
| Sample Designation | | | MW-04-2'-3.5' | MW-05-0-4" | MW-05-9'-11' | SB-01-0-2' | SB-01-10-11' |
| Depth Interval (ft. bgs) | | | 2.0' to 3.5' | 0" to 4" | 9.0' to 11.0' | 0 to 2' | 10.0' to 11.0' |
| Date Sampled | | | 6/20/2011 | 6/22/2011 | 6/22/2011 | 6/21/2011 | 6/21/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <280 | <260 | <240 | <240 | <270 |
| PCB-1221 | NS | NS | <280 | <260 | <240 | <240 | <270 |
| PCB-1232 | NS | NS | <280 | <260 | <240 | <240 | <270 |
| PCB-1242 | NS | NS | <280 | <260 | <240 | <240 | <270 |
| PCB-1248 | NS | NS | <280 | <u>410</u> | <240 | <240 | <u>540</u> |
| PCB-1254 | NS | NS | <280 | <260 | <240 | <240 | <270 |
| PCB-1260 | NS | NS | <u>1300</u> | <u>970</u> | <240 | <u>2200</u> | <u>220</u> J |
| PCBs Total | 100 | 1000 | <u>1300</u> | <u>1380</u> | ND | <u>2200</u> | <u>760</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14
 SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SB-02 | | SB-02 | | SB-03 | | SB-03 | | SB-04 | |
|--------------------------|--|--|--------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------|
| Sample Designation | | | SB-02-0-2 | SB-02-10.5-11.5 | SB-02-10.5-11.5 | SB-02-10.5-11.5 | SB-03-2 | SB-03-11.0-12.0 | SB-03-11.0-12.0 | SB-03-11.0-12.0 | SB-03-11.0-12.0 | SB-04-13 |
| Depth Interval (ft. bgs) | | | 0.0' to 2.0' | 10.5' to 11.5' | 10.5' to 11.5' | 0.0' to 2.0' | 10.5' to 11.5' | 10.5' to 11.5' | 10.5' to 11.5' | 10.5' to 11.5' | 10.5' to 11.5' | 13' |
| Date Sampled | | | 6/21/2011 | 6/21/2011 | 6/21/2011 | 6/22/2011 | 6/22/2011 | 6/22/2011 | 6/22/2011 | 6/22/2011 | 6/22/2011 | 6/20/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <240 | <250 | | <260 | <240 | <240 | <240 | <240 | <220 | |
| PCB-1221 | NS | NS | <240 | <250 | | <260 | <240 | <240 | <240 | <240 | <220 | |
| PCB-1232 | NS | NS | <240 | <250 | | <260 | <240 | <240 | <240 | <240 | <220 | |
| PCB-1242 | NS | NS | <240 | <u>140</u> | J | <260 | <240 | <240 | <240 | <240 | <220 | |
| PCB-1248 | NS | NS | <240 | <250 | | <260 | <240 | <240 | <240 | <240 | <u>310</u> | |
| PCB-1254 | NS | NS | <240 | <250 | | <260 | <240 | <240 | <240 | <240 | <220 | |
| PCB-1260 | NS | NS | <u>600</u> | <250 | | <260 | <240 | <240 | <240 | <240 | <u>1500</u> | |
| PCBs Total | 100 | 1000 | <u>600</u> | <u>140</u> | | ND | ND | ND | ND | ND | <u>1810</u> | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14
 SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SB-04 | | SB-04 | | SB-05 | | SB-05 | | SB-06 | |
|--------------------------|--|--|-----------|--|-------------|--|-------------|--|------------|---|-------------|--|
| Sample Designation | | | SB-04-14 | | SB-04-15 | | SB-05-3 | | SB-05-4 | | SB-06-3 | |
| Depth Interval (ft. bgs) | | | 14' | | 15' | | 3' | | 4' | | 3' | |
| Date Sampled | | | 6/20/2011 | | 6/20/2011 | | 6/20/2011 | | 6/20/2011 | | 6/20/2011 | |
| Compound | | | Soil | | Soil | | Soil | | Soil | | Soil | |
| Units | ug/kg | ug/kg | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| PCBs | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1221 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1232 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1242 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1248 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1254 | NS | NS | <250 | | <1100 | | <1400 | | <270 | | <200 | |
| PCB-1260 | NS | NS | <250 | | <u>4500</u> | | <u>9500</u> | | <u>200</u> | J | <u>2900</u> | |
| PCBs Total | 100 | 1000 | ND | | <u>4500</u> | | <u>9500</u> | | <u>200</u> | | <u>2900</u> | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14

SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SB-06 | SB-07 | SB-07 | SB-08 | SB-08 |
|--------------------------|--|--|-------------|------------|-------------|------------|------------------|
| Sample Designation | | | SB-06-4 | SB-07-0-4" | SB-07-1-2 | SB-08-7-8' | SB-08-10.5-11.5' |
| Depth Interval (ft. bgs) | | | 4' | 0-4" | 1-2' | 7' to 8' | 10.5' to 11.5' |
| Date Sampled | | | 6/20/2011 | 6/20/2011 | 6/20/2011 | 6/21/2011 | 6/21/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <1200 | <240 | <990 | <270 | <260 |
| PCB-1221 | NS | NS | <1200 | <240 | <990 | <270 | <260 |
| PCB-1232 | NS | NS | <1200 | <240 | <990 | <270 | <260 |
| PCB-1242 | NS | NS | <1200 | <240 | <990 | 89 | <u>170</u> |
| PCB-1248 | NS | NS | <1200 | <u>130</u> | <990 | <270 | <260 |
| PCB-1254 | NS | NS | <1200 | <240 | <990 | <270 | <260 |
| PCB-1260 | NS | NS | <u>9900</u> | <u>330</u> | <u>5600</u> | <270 | <260 |
| PCBs Total | 100 | 1000 | <u>9900</u> | <u>460</u> | <u>5600</u> | 89 | <u>170</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14
 SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SB-10 | SB-10 | SB-10 | SB-11 | SB-11 |
|--------------------------|--|--|-------------|-----------|--------------|-------------|------------|
| Sample Designation | | | SB-10-0-4 | SB-10-3 | SB-10-5 | SB-11-0-4" | SB-11-3 |
| Depth Interval (ft. bgs) | | | 0-4" | 3' | 5' | 0-4" | 3.0' |
| Date Sampled | | | 6/20/2011 | 6/20/2011 | 6/20/2011 | 6/21/2011 | 6/21/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1221 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1232 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1242 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1248 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1254 | NS | NS | <210 | <300 | <4200 | <5100 | <220 |
| PCB-1260 | NS | NS | <u>2200</u> | <300 | <u>73000</u> | <u>7300</u> | <u>240</u> |
| PCBs Total | 100 | 1000 | <u>2200</u> | ND | <u>73000</u> | <u>7300</u> | <u>240</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 14

SI Soil Sampling Results for PCB's (June 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | SB-11 | SB-13 | SB-13 | SB-13 | SS-13 |
|--------------------------|--|--|-----------|------------|-----------|-----------|------------|
| Sample Designation | | | SB-11-4 | SB-13-0-4" | SB-13-2 | SB-13-5 | SS-13 |
| Depth Interval (ft. bgs) | | | 4.0' | 0-4" | 2' | 5' | 0-4" |
| Date Sampled | | | 6/21/2011 | 6/20/2011 | 6/20/2011 | 6/20/2011 | 6/24/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1221 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1232 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1242 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1248 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1254 | NS | NS | <280 | <280 | <270 | <260 | <270 |
| PCB-1260 | NS | NS | <280 | <280 | <270 | <260 | <u>300</u> |
| PCBs Total | 100 | 1000 | ND | ND | ND | ND | <u>300</u> |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-01 | GP-01 | GP-01 | GP-02 | GP-02 | |
|--------------------------|--|--|------------|------------|------------|------------|------------|---|
| Sample Designation | | | GP-01(0-2) | GP-01(2-4) | GP-01(5-7) | GP-02(2-4) | GP-02(4-6) | |
| Depth Interval (ft. bgs) | | | 0' to 2' | 2' to 4' | 5' to 7' | 2' to 4' | 4' to 6' | |
| Date Sampled | | | 11/10/2011 | 11/10/2011 | 11/10/2011 | 11/8/2011 | 11/8/2011 | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | | |
| PCBs | | | | | | | | |
| PCB-1016 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1221 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1232 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1242 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1248 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1254 | NS | NS | <21 | <24 | <21 | <24 | <22 | |
| PCB-1260 | NS | NS | 8.3 | J | <24 | <21 | 570 | D |
| PCBs Total | 100 | 1000 | 8 | ND | ND | 570 | 21000 | D |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-02 | GP-03 | GP-03 | GP-04 | GP-04 |
|--------------------------|--|--|--------------|------------|------------|------------|--------------|
| Sample Designation | | | GP-02(16-20) | GP-03(0-4) | GP-03(4-6) | GP-04(6-8) | GP-04(11-12) |
| Depth Interval (ft. bgs) | | | 16' to 20' | 0' to 4' | 4' to 6' | 6' to 8' | 11' to 12' |
| Date Sampled | | | 11/8/2011 | 11/10/2011 | 11/10/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1221 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1232 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1242 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1248 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1254 | NS | NS | <20 | <22 | <21 | <21 | <22 |
| PCB-1260 | NS | NS | 24 | 18 J | <21 | <21 | <22 |
| PCBs Total | 100 | 1000 | 24 | 18 | ND | ND | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-05 | GP-05 | GP-05 | GP-06 | GP-06 |
|--------------------------|--|--|------------|------------|------------|------------|------------|
| Sample Designation | | | GP-05(0-2) | GP-05(4-6) | GP-05(6-8) | GP-06(0-2) | GP-06(4-6) |
| Depth Interval (ft. bgs) | | | 0' to 2' | 4' to 6' | 6' to 8' | 0' to 2' | 4' to 6' |
| Date Sampled | | | 11/10/2011 | 11/10/2011 | 11/10/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1221 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1232 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1242 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1248 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1254 | NS | NS | <20 | <21 | <20 | <19 | <23 |
| PCB-1260 | NS | NS | <20 | 79 | 71 | 330 | 280 |
| PCBs Total | 100 | 1000 | ND | 79 | 71 | 330 | 280 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-06 | GP-07 | GP-07 | GP-07 | GP-08 |
|--------------------------|--|--|------------|------------|-------------|--------------|------------|
| Sample Designation | | | GP-06(8-9) | GP-07(2-4) | GP-07(8-12) | GP-07(16-20) | GP-08(0-2) |
| Depth Interval (ft. bgs) | | | 8' to 9' | 2' to 4' | 8' to 12' | 16' to 20' | 0' to 2' |
| Date Sampled | | | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1221 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1232 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1242 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1248 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1254 | NS | NS | <20 | <18 | <20 | <20 | <21 |
| PCB-1260 | NS | NS | 44 | 180 | 710 | 62 | <21 |
| PCBs Total | 100 | 1000 | 44 | 180 | 710 | 62 | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-08 | GP-08 | GP-09 | GP-09 | GP-09 |
|--------------------------|--|--|------------|--------------|------------|------------|------------|
| Sample Designation | | | GP-08(5-7) | GP-08(12-14) | GP-09(0-2) | GP-09(2-4) | GP-09(4-6) |
| Depth Interval (ft. bgs) | | | 5' to 7' | 12' to 14' | 0' to 2' | 2' to 4' | 4' to 6' |
| Date Sampled | | | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1221 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1232 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1242 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1248 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1254 | NS | NS | <22 | <20 | <22 | <22 | <22 |
| PCB-1260 | NS | NS | <22 | <20 | 8.2 J | 18 J | <22 |
| PCBs Total | 100 | 1000 | ND | ND | 8 | 18 | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-10 | GP-10 | GP-10 | GP-11 | GP-11 |
|--------------------------|--|--|------------|------------|--------------|------------|------------|
| Sample Designation | | | GP-10(0-2) | GP-10(5-7) | GP-10(10-11) | GP-11(0-2) | GP-11(6-8) |
| Depth Interval (ft. bgs) | | | 0' to 2' | 5' to 7' | 10' to 11' | 0' to 2' | 6' to 8' |
| Date Sampled | | | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/10/2011 | 11/10/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1221 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1232 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1242 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1248 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1254 | NS | NS | <21 | <21 | <21 | <20 | <21 |
| PCB-1260 | NS | NS | 160 | <21 | <21 | 200 | 180 |
| PCBs Total | 100 | 1000 | 160 | ND | ND | 200 | 180 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-11 | GP-12 | GP-12 | GP-12 | GP-13 |
|--------------------------|--|--|--------------|-----------------------|------------|------------|-------------|
| Sample Designation | | | GP-11(10-12) | GP-12(0-2) | GP-12(4-6) | GP-12(7-8) | GP-13(0-2) |
| Depth Interval (ft. bgs) | | | 10' to 12' | 0' to 2' | 4' to 6' | 7' to 8' | 0' to 2' |
| Date Sampled | | | 11/10/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/8/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1221 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1232 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1242 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1248 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1254 | NS | NS | <19 | <20 | <22 | <21 | <18 |
| PCB-1260 | NS | NS | 17 | 25000 D | 230 | 190 | 45 P |
| PCBs Total | 100 | 1000 | 17 | 25000 | 230 | 190 | 45 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-13 | GP-13 | GP-14 | GP-14 | GP-14 |
|--------------------------|--|--|------------|--------------|------------|------------|--------------|
| Sample Designation | | | GP-13(5-7) | GP-13(16-20) | GP-14(0-2) | GP-14(5-7) | GP-14(11-12) |
| Depth Interval (ft. bgs) | | | 5' to 7' | 16' to 20' | 0' to 2' | 5' to 7' | 11' to 12' |
| Date Sampled | | | 11/8/2011 | 11/8/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1221 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1232 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1242 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1248 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1254 | NS | NS | <20 | <19 | <21 | <21 | <22 |
| PCB-1260 | NS | NS | 12 | J | 51 | 16 | JP |
| PCBs Total | 100 | 1000 | 12 | 51 | 16 | ND | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-15 | GP-15 | GP-15 | GP-16 | GP-16 |
|--------------------------|--|--|------------|-------------|--------------|------------|------------|
| Sample Designation | | | GP-15(0-2) | GP-15(9-12) | GP-15(16-20) | GP-16(0-2) | GP-16(2-4) |
| Depth Interval (ft. bgs) | | | 0' to 2' | 9' to 12' | 16' to 20' | 0' to 2' | 2' to 4' |
| Date Sampled | | | 11/8/2011 | 11/8/2011 | 11/8/2011 | 11/8/2011 | 11/8/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1221 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1232 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1242 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1248 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1254 | NS | NS | <20 | <20 | <20 | <21 | <22 |
| PCB-1260 | NS | NS | 26 | 220 | 140 | 490 | D |
| PCBs Total | 100 | 1000 | 26 | 220 | 140 | 490 | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-16 | GP-17 | GP-17 | GP-17 | GP-18 |
|--------------------------|--|--|----------------------|------------|------------|------------|------------|
| Sample Designation | | | GP-16(16-17.75) | GP-17(0-2) | GP-17(5-7) | GP-17(7-8) | GP-18(0-2) |
| Depth Interval (ft. bgs) | | | 16' to 17.75' | 0' to 2' | 5' to 7' | 7' to 8' | 0' to 2' |
| Date Sampled | | | 11/8/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1221 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1232 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1242 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1248 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1254 | NS | NS | <19 | <21 | <21 | <22 | <20 |
| PCB-1260 | NS | NS | 9900 D | 200 | 160 | 180 | 330 |
| PCBs Total | 100 | 1000 | 9900 | 200 | 160 | 180 | 330 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-18 | GP-18 | GP-19 | GP-19 | GP-19 |
|--------------------------|--|--|---------------|-------------|-------------|-------------|--------------|
| Sample Designation | | | GP-18(5-7) | GP-18(8-10) | GP-19(0-2) | GP-19(5-7) | GP-19(14-16) |
| Depth Interval (ft. bgs) | | | 5' to 7' | 8' to 10' | 0' to 2' | 5' to 7' | 14' to 16' |
| Date Sampled | | | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1221 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1232 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1242 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1248 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1254 | NS | NS | <22000 | <21 | <21 | <21 | <19 |
| PCB-1260 | NS | NS | 420000 | 29 | 2400 | 5400 | 2100 |
| PCBs Total | 100 | 1000 | 420000 | 29 | 2400 | 5400 | 2100 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-20 | GP-20 | GP-20 | GP-21 | GP-21 |
|--------------------------|--|--|------------|------------|--------------|------------|-----------------|
| Sample Designation | | | GP-20(0-2) | GP-20(5-7) | GP-20(14-16) | GP-21(0-2) | GP-21(5-7) |
| Depth Interval (ft. bgs) | | | 0' to 2' | 5' to 7' | 14' to 16' | 0' to 2' | 5' to 7' |
| Date Sampled | | | 11/8/2011 | 11/8/2011 | 11/8/2011 | 11/8/2011 | 11/8/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1221 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1232 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1242 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1248 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1254 | NS | NS | <20 | <23 | <20 | <20 | <22 |
| PCB-1260 | NS | NS | 54 | 660 D | 40 | 670 D | 120000 D |
| PCBs Total | 100 | 1000 | 54 | 660 | 40 | 670 | 120000 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-21 | GP-22 | GP-22 | GP-22B | GP-23 |
|--------------------------|--|--|--------------|------------|------------------------|---------------|--------------|
| Sample Designation | | | GP-21(18-20) | GP-22(0-2) | GP-22(5-7) | GP-22B(10-12) | GP-23(0-2) |
| Depth Interval (ft. bgs) | | | 18' to 20' | 0' to 2' | 5' to 7' | 10' to 12' | 0' to 2' |
| Date Sampled | | | 11/8/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1221 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1232 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1242 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1248 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1254 | NS | NS | <19 | <21 | <23 | <23 | <21 |
| PCB-1260 | NS | NS | 85 | 250 | 270000 D | 310 | 490 D |
| PCBs Total | 100 | 1000 | 85 | 250 | 270000 | 310 | 490 |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-23 | GP-23 | GP-24 | GP-24 | GP-24 |
|--------------------------|--|--|------------|--------------|------------|------------|------------|
| Sample Designation | | | GP-23(5-7) | GP-23(10-12) | GP-24(0-2) | GP-24(2-4) | GP-24(4-8) |
| Depth Interval (ft. bgs) | | | 5' to 7' | 10' to 12' | 0' to 2' | 2' to 4' | 4' to 8' |
| Date Sampled | | | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 | 11/9/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1221 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1232 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1242 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1248 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1254 | NS | NS | <22 | <23 | <21 | <22 | <21 |
| PCB-1260 | NS | NS | 290 | <23 | 61 | <22 | <21 |
| PCBs Total | 100 | 1000 | 290 | ND | 61 | ND | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 24

SI Soil Sampling Results for PCB's (November 2011)
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | GP-25 | GP-25 | GP-25A | GP-26 | GP-26 |
|--------------------------|--|--|------------|------------|---------------|------------|------------|
| Sample Designation | | | GP-25(0-2) | GP-25(4-7) | GP-25A(11-12) | GP-26(0-2) | GP-26(5-7) |
| Depth Interval (ft. bgs) | | | 0' to 2' | 4' to 7' | 11' to 12' | 0' to 2' | 5' to 7' |
| Date Sampled | | | 11/10/2011 | 11/10/2011 | 11/10/2011 | 11/10/2011 | 11/10/2011 |
| Compound | | | Soil | Soil | Soil | Soil | Soil |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| PCBs | | | | | | | |
| PCB-1016 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1221 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1232 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1242 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1248 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1254 | NS | NS | <18 | <21 | <20 | <22 | <22 |
| PCB-1260 | NS | NS | 42 | <21 | <20 | <22 | <22 |
| PCBs Total | 100 | 1000 | 42 | ND | ND | ND | ND |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the
- 10) P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns

TABLE 30

IRM - 2 (2013) - Area A West Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area A West | | Area A West | | Area A West | | Area A West | | Area A West | |
|----------------------------------|--|--|-------------------------|----------------------------|---------------------------|----------------------------|---------------------------|-------|-------------|-------|-------------|--|
| Sample Designation | | | Bottom-1 Area A West | Northwall-2 Area A West | Eastwall-2 Area A West | Southwall-1 Area A West | Westwall-2 Area A West | | | | | |
| Depth Interval (ft. bgs) | | | N/A | N/A | N/A | N/A | N/A | | | | | |
| Date Sampled | | | 1/8/2013 | 1/14/2013 | 1/14/2013 | 1/8/2013 | 1/14/2013 | | | | | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | | | | | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| Polychlorinated biphenyls | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1221 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1232 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1242 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1248 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1254 | NS | NS | <300 | <5700 | <2800 | <250 | <1500 | | | | | |
| PCB-1260 | NS | NS | <300 | 44000 | 28000 | 1100 | 13000 | | | | | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | ND | 44000 | 28000 | 1100 | 13000 | | | | | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | ND | 44 | 28 | 1.1 | 13 | | | | | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 31

IRM - 2 (2013) - Area A East Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area A East | | Area A East | | Area A East | | Area A East | |
|---------------------------|--|--|-------------------------|----------------------------|---------------------------|---------------------------|---------------------------|--|-------------|--|
| Sample Designation | | | Bottom-1 Area A East | Northwall-1 Area A East | Eastwall-2 Area A East | Southwall-2Area A East | Westwall-1 Area A East | | | |
| Depth Interval (ft. bgs) | | | N/A | N/A | N/A | N/A | N/A | | | |
| Date Sampled | | | 1/9/2013 | 1/9/2013 | 1/15/2013 | 1/15/2013 | 1/15/2013 | | 1/9/2013 | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | | Soil | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | | ug/kg | |
| Polychlorinated biphenyls | | | | | | | | | | |
| PCB-1016 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1221 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1232 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1242 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1248 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1254 | NS | NS | <290 | <290 | <270 | <280 | <290 | | <290 | |
| PCB-1260 | NS | NS | <290 | 1300 | <270 | 180 | J | | 5200 | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | ND | 1300 | ND | 180 | | | 5200 | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | ND | 1.3 | ND | 0.18 | | | 5.2 | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 32

IRM - 2 (2013) - Area B Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area B | | Area B | | Area B | | Area B | |
|----------------------------------|--|--|-------------------------|-------------------------|-----------------------|----------------------|-----------------------|-------|--------|--|
| Sample Designation | | | Bottom-1 Area B West | Bottom-1 Area B East | Northwall-2 Area B | Eastwall-2 Area B | Southwall-3 Area B | | | |
| Depth Interval (ft. bgs) | | | N/A | N/A | N/A | N/A | N/A | | | |
| Date Sampled | | | 1/8/2013 | 1/8/2013 | 1/10/2013 | 1/10/2013 | 1/14/2013 | | | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | | | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | |
| Polychlorinated biphenyls | | | | | | | | | | |
| PCB-1016 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1221 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1232 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1242 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1248 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1254 | NS | NS | <290 | <280 | <290 | <5800 | <13000 | | | |
| PCB-1260 | NS | NS | 1200 | 6600 | 5600 | 26000 | 150000 | | | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | 1200 | 6600 | 5600 | 26000 | 150000 | | | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | 1.2 | 6.6 | 5.6 | 26 | 150 | | | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 32

IRM - 2 (2013) - Area B Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area B | |
|----------------------------------|--|--|----------------------|--|
| Sample Designation | | | Westwall-2 Area B | |
| Depth Interval (ft. bgs) | | | N/A | |
| Date Sampled | | | 1/10/2013 | |
| Compound | | | Soil | |
| Units | ug/kg | ug/kg | ug/kg | |
| Polychlorinated biphenyls | | | | |
| PCB-1016 | NS | NS | <290 | |
| PCB-1221 | NS | NS | <290 | |
| PCB-1232 | NS | NS | <290 | |
| PCB-1242 | NS | NS | <290 | |
| PCB-1248 | NS | NS | <290 | |
| PCB-1254 | NS | NS | <290 | |
| PCB-1260 | NS | NS | 6700 | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | 6700 | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | 6.7 | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 33

IRM - 2 (2013) - Area C Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area C | | Area C | | Area C | | Area C | | Area C | |
|---------------------------|--|--|-----------------|-----------------------|----------------------|-----------------------|----------------------|-------|--------|--|--------|--|
| Sample Designation | | | Bottom-1 Area C | Northwall-2 Area C | Eastwall-2 Area C | Southwall-2 Area C | Westwall-1 Area C | | | | | |
| Depth Interval (ft. bgs) | | | N/A | N/A | N/A | N/A | N/A | | | | | |
| Date Sampled | | | 1/9/2013 | 1/14/2013 | 1/14/2013 | 1/14/2013 | 1/9/2013 | | | | | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | | | | | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | | | |
| Polychlorinated biphenyls | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <280 | <300 | <29000 | <29000 | <29000 | <250 | | | | |
| PCB-1221 | NS | NS | <280 | <300 | <29000 | <29000 | <250 | | | | | |
| PCB-1232 | NS | NS | <280 | <300 | <29000 | <29000 | <250 | | | | | |
| PCB-1242 | NS | NS | <280 | <300 | <29000 | <29000 | <250 | | | | | |
| PCB-1248 | NS | NS | <280 | <300 | <29000 | <29000 | <250 | | | | | |
| PCB-1254 | NS | NS | <280 | <300 | <29000 | <29000 | <250 | | | | | |
| PCB-1260 | NS | NS | <280 | 590 | 530000 | 300000 | 520 | | | | | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | ND | 590 | 530000 | 300000 | 520 | | | | | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | ND | 0.59 | 530 | 300 | 0.52 | | | | | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 34

IRM - 2 (2013) - Area D Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area D | | Area D | | Area D | | Area D | | Area D | |
|---------------------------|--|--|--------------------|---|-----------------------|--|----------------------|--|-----------------------|--|----------------------|--|
| Sample Designation | | | Bottom-1 Area D | | Northwall-2 Area D | | Eastwall-1 Area D | | Southwall-1 Area D | | Westwall-1 Area D | |
| Depth Interval (ft. bgs) | | | N/A | | N/A | | N/A | | N/A | | N/A | |
| Date Sampled | | | 1/9/2013 | | 1/14/2013 | | 1/9/2013 | | 1/9/2013 | | 1/9/2013 | |
| Compound | | | Soil | | Soil | | Soil | | Soil | | Soil | |
| Units | ug/kg | ug/kg | ug/kg | | ug/kg | | ug/kg | | ug/kg | | ug/kg | |
| Polychlorinated biphenyls | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1221 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1232 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1242 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1248 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1254 | NS | NS | <270 | | <5200 | | <290 | | <240 | | <270 | |
| PCB-1260 | NS | NS | 130 | J | 39000 | | 3300 | | <240 | | 1300 | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | 130 | | 39000 | | 3300 | | ND | | 1300 | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | 0.13 | | 39 | | 3.3 | | ND | | 1.3 | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

TABLE 35

IRM - 2 (2013) - Area E Excavation Final Endpoint Soil Sampling Results for PCB's
 1318 Niagara Street,
 Buffalo, NY

| Sample Location | NYSDEC Unrestricted Use SCO's | NYSDEC Restricted Commercial Use SCO's | Area E | | Area E | | Area E | | Area E | | Area E | |
|----------------------------------|--|--|-----------------|-----------------------|----------------------|-----------------------|----------------------|-------|--------|--|--------|--|
| Sample Designation | | | Bottom-1 Area E | Northwall-1 Area E | Eastwall-1 Area E | Southwall-1 Area E | Westwall-1 Area E | | | | | |
| Depth Interval (ft. bgs) | | | N/A | N/A | N/A | N/A | N/A | | | | | |
| Date Sampled | | | 1/11/2013 | 1/11/2013 | 1/11/2013 | 1/11/2013 | 1/11/2013 | | | | | |
| Compound | | | Soil | Soil | Soil | Soil | Soil | | | | | |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | | | |
| Polychlorinated biphenyls | | | | | | | | | | | | |
| PCB-1016 | NS | NS | <280 | <260 | <280 | <280 | <280 | <250 | | | | |
| PCB-1221 | NS | NS | <280 | <260 | <280 | <280 | <250 | | | | | |
| PCB-1232 | NS | NS | <280 | <260 | <280 | <280 | <250 | | | | | |
| PCB-1242 | NS | NS | <280 | <260 | <280 | <280 | <250 | | | | | |
| PCB-1248 | NS | NS | <280 | <260 | <280 | <280 | <250 | | | | | |
| PCB-1254 | NS | NS | <280 | <260 | <280 | <280 | <250 | | | | | |
| PCB-1260 | NS | NS | <280 | 890 | <280 | 260 | J | 140 | J | | | |
| PCB's, Total ppb (ug/kg) | 100 | 1000 | ND | 890 | ND | 260 | 140 | | | | | |
| PCB's, Total ppm (mg/kg) | 0.1 | 1 | ND | 0.89 | ND | 0.26 | 0.14 | | | | | |

Notes:

- 1) PCB's analyzed by USEPA method SW846 - 8082.
- 2) **Bold** values indicate that the concentration exceeds the applicable Restricted Commercial Use SCO's from Part 375.
- 3) Underlined values indicate that the concentration exceeds the applicable Unrestricted Use SCO's from Part 375.
- 4) < = not detected - below the laboratory's Reporting Limit
- 5) ft. bgs = feet below ground surface.
- 6) ug/kg = micrograms per kilogram.
- 7) J = Detected below the RL but greater than or equal to the Method Detection Limit (MDL); therefore the result is an estimated concentration.
- 8) NS = No standard available.
- 9) ND = No detection above the laboratory's RL.

| Sample Location | SB-101 | SB-102 | SB-103 | SB-104 | SB-105 | SB-106 | SB-107 | SB-108 |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Date Sampled | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 |
| Depth (ft bg) | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| 0-0.5 | | | | | 22 | | ND | 0.38 |
| 0-3 | | | | | | | | |
| 0.5-1 | | | | | | | | |
| 1-2 | 242 | 1.75 | 0.63 | 0.26 | ND | 53 | 240 | 61 |
| 2.5 | | | | | | | | |
| 2-4 | 43 | 0.59 | 0.53 | 1,300 | 41 | 25 | 93 | 270 |
| 3-4 | | | | | | | | |
| 4-6 | 1.61 | | 360 | 1.35 | 46 | 0.28 | 630 | 1.10 |
| 4-7 | | | | | | | | |
| 5-10 | | | | | | | | |
| 6-7 | | | | | | | | |
| 6-8 | | | 3.10 | 390 | 1.30 | | ND | 1.86 |
| 7.5 | | | | | | | | |
| 7-8 | | | | | | | | |
| 7-9 | | | | | | | | |
| 8-10 | | | ND | 0.73 | | | | |
| 10-12 | | | 1.90 | 1.50 | | | | |
| 12-14 | | | | | | | | |
| 14-16 | | | | | | | | |

Note:

PCB concentrations are for total PCBs in mg/kg.

Some sample intervals were too dense to capture in 2-foot sections, additional rows were added for this reason

| | |
|--|---|
| | No data was analyzed for the indicated interval |
| | Concentration was less than 1 ppm. |
| | Concentration was between 1 ppm and 10 ppm |
| | Concentration was greater than 10 ppm, less than 50 ppm |
| | Concentration was greater than 50 ppm |

Some data may still be pending from the lab.

| SB-109 | SB-110 | SB-111 | SB-112 | SB-113 | SB-114 | SB-115 | SB-116 | SB-117 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/06/15 | 04/07/15 | 04/07/15 | 04/07/15 | 04/07/15 |
| <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> |
| ND | | | | | | | | 1.30 |
| ND | 1.80 | ND | ND | 0.77 | 0.27 | 13 | 9.00 | 0.42 |
| | 12 | ND | 0.25 | 23 | 3.10 | 1.40 | 0.73 | 0.37 |
| | 1.20 | 0.43 | 3.30 | 0.97 | ND | ND | 0.25 | 160 |
| | | 400 | 0.27 | 8.50 | 2.90 | 1.27 | 0.46 | 1.90 |
| | | 7.80 | 1.30 | | | 0.30 | 0.48 | |
| | | 15 | | | | | | |
| | | 0.52 | | | | | | |

| SB-190 | SB-191 | SB-192 | SB-193 |
|---------------|---------------|---------------|---------------|
| 07/19/18 | 07/20/18 | 07/21/18 | 07/22/18 |
| <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> | <i>mg/kg</i> |
| | | | |
| 0.54 | ND | 1.37 | 1.85 |
| 0.16 | ND | 0.04 | ND |
| | | | |
| 0.15 | 0.49 | 0.05 | 0.17 |
| | | | |
| 0.41 | | | |
| | ND | | |
| | | | |
| 1.86 | | | |
| | | | |
| | ND | | |
| | | | |

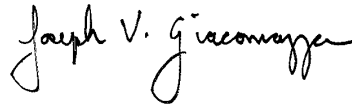
ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-157508-1
Client Project/Site: 1318 Niagara Street #E915213

For:
New York State D.E.C.
625 Broadway
12th Floor
Albany, New York 12233-7017

Attn: Ms. Heide-Marie Dudek



Authorized for release by:
8/15/2019 3:14:48 PM
Joe Giacomazza, Project Management Assistant II
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Designee for
Orlette Johnson, Senior Project Manager
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orlette.johnson@testamericainc.com

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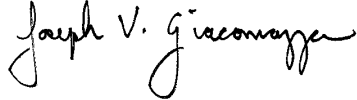
The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Joe Giacomazza
Project Management Assistant II
8/15/2019 3:14:48 PM



Table of Contents

| | |
|---------------------------------|----|
| Cover Page | 1 |
| Table of Contents | 3 |
| Definitions | 4 |
| Case Narrative | 5 |
| Client Sample Results | 6 |
| Chronicle | 29 |
| Certification Summary | 37 |
| Method Summary | 38 |
| Sample Summary | 39 |
| Chain of Custody | 40 |
| Receipt Checklists | 43 |

Definitions/Glossary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Qualifiers

GC Semi VOA

| Qualifier | Qualifier Description |
|-----------|--|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| X | Surrogate is outside control limits |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| ▫ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Job ID: 480-157508-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-157508-1

Comments

No additional comments.

Receipt

The samples were received on 8/12/2019 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 9.3° C.

GC Semi VOA

Method(s) 8082A: The continuing calibration verification (CCV 480-486725/8) associated with analytical batch 480-486725 recovered above the upper control limit for PCB-1242. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: SB-203 (480-157508-1), SB-203A (480-157508-2), SB-202 (480-157508-3), SB-202A (480-157508-4), SB-201 (480-157508-5), SB-201A (480-157508-6), SB-200 (480-157508-7), SB-200A (480-157508-8), SB-199 (480-157508-9), SB-198 (480-157508-10), SB-198A (480-157508-11), SB-197 (480-157508-12), SB-196 (480-157508-13), SB-196A (480-157508-14), SB-195 (480-157508-15), SB-195A (480-157508-16) and SB-194 (480-157508-17).

Method(s) 8082A: The following samples were diluted to bring the concentration of target analytes within the calibration range: SB-204 (480-157508-19), SB-204 (480-157508-19[MS]), SB-204 (480-157508-19[MSD]) and DUP-080919-2 (480-157508-23). Elevated reporting limits (RLs) are provided.

Method(s) 8082A: The following samples were diluted due to abundance of target analytes: SB-204 (480-157508-19[MS]) and SB-204 (480-157508-19[MSD]). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8082A: The following sample was diluted due to abundance of target analytes : SB-204 (480-157508-19). As such, surrogate recoveries are estimated and not representative, and elevated reporting limits (RLs) are provided.

Method(s) 8082A: The matrix spike/matrix spike duplicate (MS/MSD) recoveries for preparation batch 480-486622 and analytical batch 480-487009 were outside control limits. Sample non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Samples are physically non-homogenous.

Method(s) 8082A: The percent difference in a multi-component continuing calibration verification is assessed on the basis of the total amount, individual peak calculations are only listed for completeness.

Method(s) 8082A: All primary data for analytical batches 486725, 486727 and 487009 is reported from the ZB-5 column.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-203

Lab Sample ID: 480-157508-1

Date Collected: 08/09/19 09:35

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 79.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.30 | 0.058 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1221 | ND | | 0.30 | 0.058 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1232 | ND | | 0.30 | 0.058 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1242 | ND | | 0.30 | 0.058 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1248 | ND | | 0.30 | 0.058 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1254 | ND | | 0.30 | 0.14 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| PCB-1260 | ND | | 0.30 | 0.14 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:33 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 114 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| Tetrachloro-m-xylene | 93 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| DCB Decachlorobiphenyl | 99 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:33 | 1 |
| DCB Decachlorobiphenyl | 121 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:33 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-203A

Lab Sample ID: 480-157508-2

Date Collected: 08/09/19 09:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 82.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.26 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1221 | ND | | 0.26 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1232 | ND | | 0.26 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1242 | ND | | 0.26 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1248 | ND | | 0.26 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1254 | ND | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| PCB-1260 | ND | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:46 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 120 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| Tetrachloro-m-xylene | 98 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| DCB Decachlorobiphenyl | 102 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:46 | 1 |
| DCB Decachlorobiphenyl | 128 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:46 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-202

Lab Sample ID: 480-157508-3

Date Collected: 08/09/19 10:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 93.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1221 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1232 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1242 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1248 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:58 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 124 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| Tetrachloro-m-xylene | 92 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| DCB Decachlorobiphenyl | 111 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:58 | 1 |
| DCB Decachlorobiphenyl | 143 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:58 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-202A

Lab Sample ID: 480-157508-4

Date Collected: 08/09/19 10:05

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 92.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1221 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1232 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1242 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1248 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1254 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| PCB-1260 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:11 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 116 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| Tetrachloro-m-xylene | 89 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| DCB Decachlorobiphenyl | 102 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:11 | 1 |
| DCB Decachlorobiphenyl | 120 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:11 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-201

Lab Sample ID: 480-157508-5

Date Collected: 08/09/19 10:15

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 94.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.24 | 0.046 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1221 | ND | | 0.24 | 0.046 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1232 | ND | | 0.24 | 0.046 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1242 | ND | | 0.24 | 0.046 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1248 | ND | | 0.24 | 0.046 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1254 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| PCB-1260 | 1.1 | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:24 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 117 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| Tetrachloro-m-xylene | 102 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| DCB Decachlorobiphenyl | 104 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:24 | 1 |
| DCB Decachlorobiphenyl | 125 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:24 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-201A

Lab Sample ID: 480-157508-6

Date Collected: 08/09/19 10:20

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 91.6

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1221 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1232 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1242 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1248 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1254 | ND | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| PCB-1260 | ND | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:37 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 124 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| Tetrachloro-m-xylene | 91 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| DCB Decachlorobiphenyl | 115 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:37 | 1 |
| DCB Decachlorobiphenyl | 135 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:37 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-200

Lab Sample ID: 480-157508-7

Date Collected: 08/09/19 10:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 88.2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1221 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1232 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1242 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1248 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| PCB-1260 | 1.1 | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 17:50 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 109 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| Tetrachloro-m-xylene | 82 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| DCB Decachlorobiphenyl | 95 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:50 | 1 |
| DCB Decachlorobiphenyl | 116 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 17:50 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-200A

Lab Sample ID: 480-157508-8

Date Collected: 08/09/19 10:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1221 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1232 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1242 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1248 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| PCB-1260 | 4.5 | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:02 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 124 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| Tetrachloro-m-xylene | 92 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| DCB Decachlorobiphenyl | 104 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:02 | 1 |
| DCB Decachlorobiphenyl | 128 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:02 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-199

Lab Sample ID: 480-157508-9

Date Collected: 08/09/19 11:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 85.2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|-------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1221 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1232 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1242 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1248 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1254 | ND | | 0.28 | 0.13 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| PCB-1260 | 0.19 | J | 0.28 | 0.13 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 16:07 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 115 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| Tetrachloro-m-xylene | 84 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| DCB Decachlorobiphenyl | 105 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:07 | 1 |
| DCB Decachlorobiphenyl | 126 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 16:07 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-198

Lab Sample ID: 480-157508-10

Date Collected: 08/09/19 11:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 84.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1221 | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1232 | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1242 | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1248 | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1254 | ND | | 0.21 | 0.098 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| PCB-1260 | 1.3 | | 0.21 | 0.098 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:15 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|-----------|-----------|----------|----------------|----------------|---------|
| <i>Tetrachloro-m-xylene</i> | 111 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| <i>Tetrachloro-m-xylene</i> | 106 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| <i>DCB Decachlorobiphenyl</i> | 110 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:15 | 1 |
| <i>DCB Decachlorobiphenyl</i> | 144 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:15 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-198A

Lab Sample ID: 480-157508-11

Date Collected: 08/09/19 11:35

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 88.4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1221 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1232 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1242 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1248 | ND | | 0.25 | 0.048 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:28 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 133 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| Tetrachloro-m-xylene | 90 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| DCB Decachlorobiphenyl | 120 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:28 | 1 |
| DCB Decachlorobiphenyl | 142 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:28 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-197

Lab Sample ID: 480-157508-12

Date Collected: 08/09/19 12:45

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1221 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1232 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1242 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1248 | ND | | 0.26 | 0.051 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1254 | ND | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| PCB-1260 | 6.8 | | 0.26 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:41 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 120 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| Tetrachloro-m-xylene | 87 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| DCB Decachlorobiphenyl | 110 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:41 | 1 |
| DCB Decachlorobiphenyl | 136 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:41 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-196

Lab Sample ID: 480-157508-13

Date Collected: 08/09/19 13:10

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.27 | 0.052 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1221 | ND | | 0.27 | 0.052 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1232 | ND | | 0.27 | 0.052 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1242 | ND | | 0.27 | 0.052 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1248 | ND | | 0.27 | 0.052 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1254 | ND | | 0.27 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| PCB-1260 | ND | | 0.27 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 18:54 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 122 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| Tetrachloro-m-xylene | 94 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| DCB Decachlorobiphenyl | 106 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:54 | 1 |
| DCB Decachlorobiphenyl | 139 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 18:54 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-196A

Lab Sample ID: 480-157508-14

Date Collected: 08/09/19 13:15

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1221 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1232 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1242 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1248 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1254 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| PCB-1260 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:06 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 124 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| Tetrachloro-m-xylene | 95 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| DCB Decachlorobiphenyl | 110 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:06 | 1 |
| DCB Decachlorobiphenyl | 132 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:06 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-195

Lab Sample ID: 480-157508-15

Date Collected: 08/09/19 14:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 83.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1221 | ND | | 0.25 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1232 | ND | | 0.25 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1242 | ND | | 0.25 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1248 | ND | | 0.25 | 0.050 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:19 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 129 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| Tetrachloro-m-xylene | 96 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| DCB Decachlorobiphenyl | 111 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:19 | 1 |
| DCB Decachlorobiphenyl | 134 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:19 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-195A

Lab Sample ID: 480-157508-16

Date Collected: 08/09/19 14:05

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 80.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.27 | 0.053 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1221 | ND | | 0.27 | 0.053 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1232 | ND | | 0.27 | 0.053 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1242 | ND | | 0.27 | 0.053 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1248 | ND | | 0.27 | 0.053 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1254 | ND | | 0.27 | 0.13 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| PCB-1260 | ND | | 0.27 | 0.13 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 19:58 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 141 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| Tetrachloro-m-xylene | 100 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| DCB Decachlorobiphenyl | 137 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:58 | 1 |
| DCB Decachlorobiphenyl | 148 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 19:58 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-194

Lab Sample ID: 480-157508-17

Date Collected: 08/09/19 13:25

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 85.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1221 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1232 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1242 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1248 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 08/13/19 06:07 | 08/13/19 20:10 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 126 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| Tetrachloro-m-xylene | 98 | | 60 - 154 | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| DCB Decachlorobiphenyl | 109 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 20:10 | 1 |
| DCB Decachlorobiphenyl | 132 | | 65 - 174 | 08/13/19 06:07 | 08/13/19 20:10 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-194A

Lab Sample ID: 480-157508-18

Date Collected: 08/09/19 13:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|-------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1221 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1232 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1242 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1248 | ND | | 0.28 | 0.055 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1254 | ND | | 0.28 | 0.13 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| PCB-1260 | 0.14 | J | 0.28 | 0.13 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:30 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 99 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| Tetrachloro-m-xylene | 91 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| DCB Decachlorobiphenyl | 117 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:30 | 1 |
| DCB Decachlorobiphenyl | 130 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:30 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-204

Lab Sample ID: 480-157508-19

Date Collected: 08/09/19 14:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 82.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|----|-----|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 26 | 5.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1221 | ND | | 26 | 5.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1232 | ND | | 26 | 5.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1242 | ND | | 26 | 5.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1248 | ND | | 26 | 5.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1254 | ND | | 26 | 12 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| PCB-1260 | 420 | | 26 | 12 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:22 | 100 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 0 | X | 60 - 154 | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| Tetrachloro-m-xylene | 0 | X | 60 - 154 | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| DCB Decachlorobiphenyl | 0 | X | 65 - 174 | 08/13/19 06:03 | 08/14/19 18:22 | 100 |
| DCB Decachlorobiphenyl | 0 | X | 65 - 174 | 08/13/19 06:03 | 08/14/19 18:22 | 100 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-204A

Lab Sample ID: 480-157508-20

Date Collected: 08/09/19 14:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 75.7

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|-------------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.31 | 0.061 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1221 | ND | | 0.31 | 0.061 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1232 | ND | | 0.31 | 0.061 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1242 | ND | | 0.31 | 0.061 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1248 | ND | | 0.31 | 0.061 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1254 | ND | | 0.31 | 0.15 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| PCB-1260 | 0.50 | | 0.31 | 0.15 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:43 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 88 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| Tetrachloro-m-xylene | 81 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| DCB Decachlorobiphenyl | 96 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:43 | 1 |
| DCB Decachlorobiphenyl | 113 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:43 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-197A

Lab Sample ID: 480-157508-21

Date Collected: 08/09/19 12:58

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 84.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1221 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1232 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1242 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1248 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1254 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| PCB-1260 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 16:55 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 103 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| Tetrachloro-m-xylene | 96 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| DCB Decachlorobiphenyl | 120 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:55 | 1 |
| DCB Decachlorobiphenyl | 133 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 16:55 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: DUP-080919-1

Lab Sample ID: 480-157508-22

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 94.8

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 0.18 | 0.036 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1221 | ND | | 0.18 | 0.036 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1232 | ND | | 0.18 | 0.036 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1242 | ND | | 0.18 | 0.036 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1248 | ND | | 0.18 | 0.036 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1254 | ND | | 0.18 | 0.085 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| PCB-1260 | ND | | 0.18 | 0.085 | mg/Kg | ☼ | 08/13/19 06:03 | 08/13/19 17:07 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 101 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| Tetrachloro-m-xylene | 93 | | 60 - 154 | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| DCB Decachlorobiphenyl | 125 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 17:07 | 1 |
| DCB Decachlorobiphenyl | 135 | | 65 - 174 | 08/13/19 06:03 | 08/13/19 17:07 | 1 |

Client Sample Results

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: DUP-080919-2

Lab Sample ID: 480-157508-23

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 92.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|-----------|-----------|-----|------|-------|---|----------------|----------------|---------|
| PCB-1016 | ND | | 2.4 | 0.47 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1221 | ND | | 2.4 | 0.47 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1232 | ND | | 2.4 | 0.47 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1242 | ND | | 2.4 | 0.47 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1248 | ND | | 2.4 | 0.47 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1254 | ND | | 2.4 | 1.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| PCB-1260 | 20 | | 2.4 | 1.1 | mg/Kg | ☼ | 08/13/19 06:03 | 08/14/19 18:35 | 10 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 82 | | 60 - 154 | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| Tetrachloro-m-xylene | 99 | | 60 - 154 | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| DCB Decachlorobiphenyl | 78 | | 65 - 174 | 08/13/19 06:03 | 08/14/19 18:35 | 10 |
| DCB Decachlorobiphenyl | 163 | | 65 - 174 | 08/13/19 06:03 | 08/14/19 18:35 | 10 |

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-203

Lab Sample ID: 480-157508-1

Date Collected: 08/09/19 09:35

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-203

Lab Sample ID: 480-157508-1

Date Collected: 08/09/19 09:35

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 79.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 16:33 | W1T | TAL BUF |

Client Sample ID: SB-203A

Lab Sample ID: 480-157508-2

Date Collected: 08/09/19 09:40

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-203A

Lab Sample ID: 480-157508-2

Date Collected: 08/09/19 09:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 82.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 16:46 | W1T | TAL BUF |

Client Sample ID: SB-202

Lab Sample ID: 480-157508-3

Date Collected: 08/09/19 10:00

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-202

Lab Sample ID: 480-157508-3

Date Collected: 08/09/19 10:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 93.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 16:58 | W1T | TAL BUF |

Client Sample ID: SB-202A

Lab Sample ID: 480-157508-4

Date Collected: 08/09/19 10:05

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

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Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-202A

Lab Sample ID: 480-157508-4

Date Collected: 08/09/19 10:05

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 92.8

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 17:11 | W1T | TAL BUF |

Client Sample ID: SB-201

Lab Sample ID: 480-157508-5

Date Collected: 08/09/19 10:15

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-201

Lab Sample ID: 480-157508-5

Date Collected: 08/09/19 10:15

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 94.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 17:24 | W1T | TAL BUF |

Client Sample ID: SB-201A

Lab Sample ID: 480-157508-6

Date Collected: 08/09/19 10:20

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-201A

Lab Sample ID: 480-157508-6

Date Collected: 08/09/19 10:20

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 91.6

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 17:37 | W1T | TAL BUF |

Client Sample ID: SB-200

Lab Sample ID: 480-157508-7

Date Collected: 08/09/19 10:30

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-200

Lab Sample ID: 480-157508-7

Date Collected: 08/09/19 10:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 88.2

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 17:50 | W1T | TAL BUF |

Client Sample ID: SB-200A

Lab Sample ID: 480-157508-8

Date Collected: 08/09/19 10:40

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-200A

Lab Sample ID: 480-157508-8

Date Collected: 08/09/19 10:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.2

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 18:02 | W1T | TAL BUF |

Client Sample ID: SB-199

Lab Sample ID: 480-157508-9

Date Collected: 08/09/19 11:00

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-199

Lab Sample ID: 480-157508-9

Date Collected: 08/09/19 11:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 85.2

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 16:07 | W1T | TAL BUF |

Client Sample ID: SB-198

Lab Sample ID: 480-157508-10

Date Collected: 08/09/19 11:30

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-198

Lab Sample ID: 480-157508-10

Date Collected: 08/09/19 11:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 84.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 18:15 | W1T | TAL BUF |

Client Sample ID: SB-198A

Lab Sample ID: 480-157508-11

Date Collected: 08/09/19 11:35

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-198A

Lab Sample ID: 480-157508-11

Date Collected: 08/09/19 11:35

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 88.4

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 18:28 | W1T | TAL BUF |

Client Sample ID: SB-197

Lab Sample ID: 480-157508-12

Date Collected: 08/09/19 12:45

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-197

Lab Sample ID: 480-157508-12

Date Collected: 08/09/19 12:45

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 18:41 | W1T | TAL BUF |

Client Sample ID: SB-196

Lab Sample ID: 480-157508-13

Date Collected: 08/09/19 13:10

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-196

Lab Sample ID: 480-157508-13

Date Collected: 08/09/19 13:10

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.5

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 18:54 | W1T | TAL BUF |

Client Sample ID: SB-196A

Lab Sample ID: 480-157508-14

Date Collected: 08/09/19 13:15

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-196A

Lab Sample ID: 480-157508-14

Date Collected: 08/09/19 13:15

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.8

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 19:06 | W1T | TAL BUF |

Client Sample ID: SB-195

Lab Sample ID: 480-157508-15

Date Collected: 08/09/19 14:00

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-195

Lab Sample ID: 480-157508-15

Date Collected: 08/09/19 14:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 83.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 19:19 | W1T | TAL BUF |

Client Sample ID: SB-195A

Lab Sample ID: 480-157508-16

Date Collected: 08/09/19 14:05

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-195A

Lab Sample ID: 480-157508-16

Date Collected: 08/09/19 14:05

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 80.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 19:58 | W1T | TAL BUF |

Client Sample ID: SB-194

Lab Sample ID: 480-157508-17

Date Collected: 08/09/19 13:25

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-194

Lab Sample ID: 480-157508-17

Date Collected: 08/09/19 13:25

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 85.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486623 | 08/13/19 06:07 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486725 | 08/13/19 20:10 | W1T | TAL BUF |

Client Sample ID: SB-194A

Lab Sample ID: 480-157508-18

Date Collected: 08/09/19 13:30

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-194A

Lab Sample ID: 480-157508-18

Date Collected: 08/09/19 13:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 78.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486727 | 08/13/19 16:30 | W1T | TAL BUF |

Client Sample ID: SB-204

Lab Sample ID: 480-157508-19

Date Collected: 08/09/19 14:30

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: SB-204

Lab Sample ID: 480-157508-19

Date Collected: 08/09/19 14:30

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 82.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 100 | 487009 | 08/14/19 18:22 | W1T | TAL BUF |

Client Sample ID: SB-204A

Lab Sample ID: 480-157508-20

Date Collected: 08/09/19 14:40

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-204A

Lab Sample ID: 480-157508-20

Date Collected: 08/09/19 14:40

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 75.7

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486727 | 08/13/19 16:43 | W1T | TAL BUF |

Client Sample ID: SB-197A

Lab Sample ID: 480-157508-21

Date Collected: 08/09/19 12:58

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: SB-197A

Lab Sample ID: 480-157508-21

Date Collected: 08/09/19 12:58

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 84.1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486727 | 08/13/19 16:55 | W1T | TAL BUF |

Client Sample ID: DUP-080919-1

Lab Sample ID: 480-157508-22

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Lab Chronicle

Client: New York State D.E.C.
 Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Client Sample ID: DUP-080919-1

Lab Sample ID: 480-157508-22

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 94.8

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 1 | 486727 | 08/13/19 17:07 | W1T | TAL BUF |

Client Sample ID: DUP-080919-2

Lab Sample ID: 480-157508-23

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | Moisture | | 1 | 486562 | 08/12/19 15:14 | MJH | TAL BUF |

Client Sample ID: DUP-080919-2

Lab Sample ID: 480-157508-23

Date Collected: 08/09/19 00:00

Matrix: Solid

Date Received: 08/12/19 12:00

Percent Solids: 92.0

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3550C | | | 486622 | 08/13/19 06:03 | SMP | TAL BUF |
| Total/NA | Analysis | 8082A | | 10 | 487009 | 08/14/19 18:35 | W1T | TAL BUF |

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|-----------|---------|------------|-----------------------|-----------------|
| New York | NELAP | 2 | 10026 | 03-31-20 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|------------------|
| Moisture | | Solid | Percent Moisture |
| Moisture | | Solid | Percent Solids |

Method Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

| Method | Method Description | Protocol | Laboratory |
|----------|--|----------|------------|
| 8082A | Polychlorinated Biphenyls (PCBs) by Gas Chromatography | SW846 | TAL BUF |
| Moisture | Percent Moisture | EPA | TAL BUF |
| 3550C | Ultrasonic Extraction | SW846 | TAL BUF |

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:


TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-157508-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Asset ID |
|---------------|------------------|--------|----------------|----------------|----------|
| 480-157508-1 | SB-203 | Solid | 08/09/19 09:35 | 08/12/19 12:00 | |
| 480-157508-2 | SB-203A | Solid | 08/09/19 09:40 | 08/12/19 12:00 | |
| 480-157508-3 | SB-202 | Solid | 08/09/19 10:00 | 08/12/19 12:00 | |
| 480-157508-4 | SB-202A | Solid | 08/09/19 10:05 | 08/12/19 12:00 | |
| 480-157508-5 | SB-201 | Solid | 08/09/19 10:15 | 08/12/19 12:00 | |
| 480-157508-6 | SB-201A | Solid | 08/09/19 10:20 | 08/12/19 12:00 | |
| 480-157508-7 | SB-200 | Solid | 08/09/19 10:30 | 08/12/19 12:00 | |
| 480-157508-8 | SB-200A | Solid | 08/09/19 10:40 | 08/12/19 12:00 | |
| 480-157508-9 | SB-199 | Solid | 08/09/19 11:00 | 08/12/19 12:00 | |
| 480-157508-10 | SB-198 | Solid | 08/09/19 11:30 | 08/12/19 12:00 | |
| 480-157508-11 | SB-198A | Solid | 08/09/19 11:35 | 08/12/19 12:00 | |
| 480-157508-12 | SB-197 | Solid | 08/09/19 12:45 | 08/12/19 12:00 | |
| 480-157508-13 | SB-196 | Solid | 08/09/19 13:10 | 08/12/19 12:00 | |
| 480-157508-14 | SB-196A | Solid | 08/09/19 13:15 | 08/12/19 12:00 | |
| 480-157508-15 | SB-195 | Solid | 08/09/19 14:00 | 08/12/19 12:00 | |
| 480-157508-16 | SB-195A | Solid | 08/09/19 14:05 | 08/12/19 12:00 | |
| 480-157508-17 | SB-194 | Solid | 08/09/19 13:25 | 08/12/19 12:00 | |
| 480-157508-18 | SB-194A | Solid | 08/09/19 13:30 | 08/12/19 12:00 | |
| 480-157508-19 | SB-204 | Solid | 08/09/19 14:30 | 08/12/19 12:00 | |
| 480-157508-20 | SB-204A | Solid | 08/09/19 14:40 | 08/12/19 12:00 | |
| 480-157508-21 | SB-197A | Solid | 08/09/19 12:58 | 08/12/19 12:00 | |
| 480-157508-22 | DUP-080919-1 | Solid | 08/09/19 00:00 | 08/12/19 12:00 | |
| 480-157508-23 | DUP-080919-2 | Solid | 08/09/19 00:00 | 08/12/19 12:00 | |

| | | | |
|--|--|--|--|
| Client Information Client Contact: Ms. Heide-Marie Dudek Company: New York State D.E.C. Address: 625 Broadway 12th Floor City: Albany State, Zip: NY, 12233-7017 Phone: Email: heidi.dudek@dec.ny.gov Project Name: 1318 Niagara Street #E915213 Site: | | Lab PM: Johnson, Oriette S E-Mail: oriette.johnson@testamericainc.com Carrier Tracking No(s): Job #: | |
| Due Date Requested: TAT Requested (days): Rush 24hrs PO #: Call/Out ID WO #: 48020737 Project #: SSOW#: | | Analysis Requested Total Number of containers: | |
| Sample Identification Sample ID: SB-203 Sample ID: SB-203A Sample ID: SB-202 Sample ID: SB-202A Sample ID: SB-201 Sample ID: SB-201A Sample ID: SB-206 Sample ID: SB-200A Sample ID: SB-199 Sample ID: SB-198 Sample ID: SB-196A | | Matrix (W=Water, S=Solid, O=West/Well, BT=Tissue, A=Air) Sample Type (C=Comp, G=grab) Sample Time Sample Date Preservation Code: | |
| Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 802A - TCL PCBs - OLM04.2 905B - Paint Filter 6010C, 7470A, 8081B, 8151A, 8270D 1010A, 9045D | | Special Instructions/Note: 480-157508 Chain of Custody  | |
| Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) | | | |
| Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: | | | |
| Empty Kit Relinquished by: <i>Heidi Dudek</i> Relinquished by: <i>Heidi Dudek</i> Relinquished by: | | Method of Shipment: Received by: <i>Amul Kulkarni</i> Date/Time: <i>08/12/19 12:00</i> Company: <i>Company</i> | |
| Custody Seals Intact: Δ Yes Δ No | | Cooler Temperature(s) °C and Other Remarks: <i>9.3 #17CF</i> | |



Chain of Custody Record

| | | | |
|--|--|--|---|
| Client Information Client Contact: Ms. Heide-Marie Dudek Company: New York State D.E.C. Address: 625 Broadway 12th Floor City: Albany State, Zip: NY, 12233-7017 Phone: Email: heidi.dudek@dec.ny.gov Project Name: 1318 Niagara Street #E915213 Site: | | Lab PM: Johnson, Orlette S E-Mail: orlette.johnson@testamericainc.com Carrier Tracking No(s): Lab No: 480-133961-30177.2 Page: Page 2 of 3 Job #: | |
| Due Date Requested: TAT Requested (days): Rush 24HR PO #: Call/Out ID: WO #: Project #: 48020737 SSOW#: | | Analysis Requested Total Number of containers: | |
| Sample Identification SB-197 SB-196 SB-196A SB-195 SB-195A SB-194 SB-194A SB-204 SB-204A SB-197A Dup-080919-1 | Sample Date 8-4-19 | Sample Time 1245 | Matrix (W=water, S=solid, O=waste/soil, B=BIOTISSUE, A=Air) Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid |
| Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 8082A - TCL PCBs - OLM04.2 9058B - Paint Filter 6010C, 7470A, 8081B, 8151A, 8270D 1010A, 9045D | | Special Instructions/Note: Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) | |
| Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Deliverable Requested: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Empty Kit Relinquished by: | | | |
| Relinquished by: <i>Pat</i> Relinquished by: Relinquished by: | | Date: 8-12-19 1200 Date/Time: Date/Time: Date/Time: | |
| Custody Seals Intact: Δ Yes Δ No | | Cooler Temperature(s) °C and Other Remarks: 9.3 #17CE | |



Chain of Custody Record



| | | | |
|---|--|--|--|
| Client Information Client Contact: Ms. Heide-Marie Dudek Company: New York State D.E.C. Address: 625 Broadway 12th Floor City: Albany State, Zip: NY, 12233-7017 Phone: Email: heidi.dudek@dec.ny.gov Project Name: 1318 Niagara Street #E915213 Site: | | Sampler: <i>Pat Colen</i> Lab PM: Johnson, Orlette S E-Mail: orlette.johnson@testamericainc.com Carner Tracking No(s): COC No: 480-133961-30177.3 Page: Page 3 of 3 Job #: | |
| Due Date Requested: TAT Requested (days): <i>Rush 2 HR</i> PO #: <i>24HR</i> Call/Out ID WO #: <i>24HR</i> Project #: 48020737 SSOW#: | | Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Total Number of Containers <input checked="" type="checkbox"/> | |
| Sample Identification Dup-080919-3 Sample Date: <i>8-4-14</i> Sample Time: <i>- 6</i> Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=wastewater, B=BIOTISSUE, AA=Air) Preservation Code: | | Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecathrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) | |
| Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) | | Special Instructions/Note: Return To Client <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: | |
| Empty Kit Relinquished by: Relinquished by: <i>Pat Colen</i> Date/Time: <i>8-12-14 1200</i> Relinquished by: Date/Time: Relinquished by: Date/Time: | | Method of Shipment: Received by: <i>Jim Kow Cvelb</i> Date/Time: <i>08/12/14 1200</i> Received by: Date/Time: Received by: Date/Time: | |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: | | Cooler Temperature(s) °C and Other Remarks: <i>9.3 #1 ICR</i> | |



Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-157508-1

Login Number: 157508


List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Kolb, Chris M

| Question | Answer | Comment |
|--|--------|--|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | False | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | QC VOLUME RECEIVED NOT LISTED/ REQUESTED ON COC. |
| Samples are received within Holding Time (Excluding tests with immediate HTs).. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | N/A | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Sampling Company provided. | True | GES |
| Samples received within 48 hours of sampling. | False | |
| Samples requiring field filtration have been filtered in the field. | True | |
| Chlorine Residual checked. | N/A | |





Appendix F
Traffic Control Plan

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE TRAFFIC CONTROL PLAN



September 2019



TABLE OF CONTENTS

| | |
|--|---|
| List of Figures..... | 1 |
| 1 Introduction..... | 2 |
| 2 Truck Routing..... | 2 |
| 2.1 US Ecology..... | 2 |
| 2.2 Republic Services Landfill..... | 3 |
| 3 Maintenance and Protection of Traffic..... | 5 |

LIST OF FIGURES

- 1 Truck Route to US Ecology
- 2 Truck Route to Republic Services Landfill
- 3 Truck Route from Republic Services Landfill

1. INTRODUCTION

The purpose of this Traffic Control and Transportation Plan is to detail the strategy GES will employ to minimize the congestion on Niagara Street caused by site vehicles. Management and control of the material hauling on and in the vicinity of the site is of primary focus.

2. TRUCK ROUTING

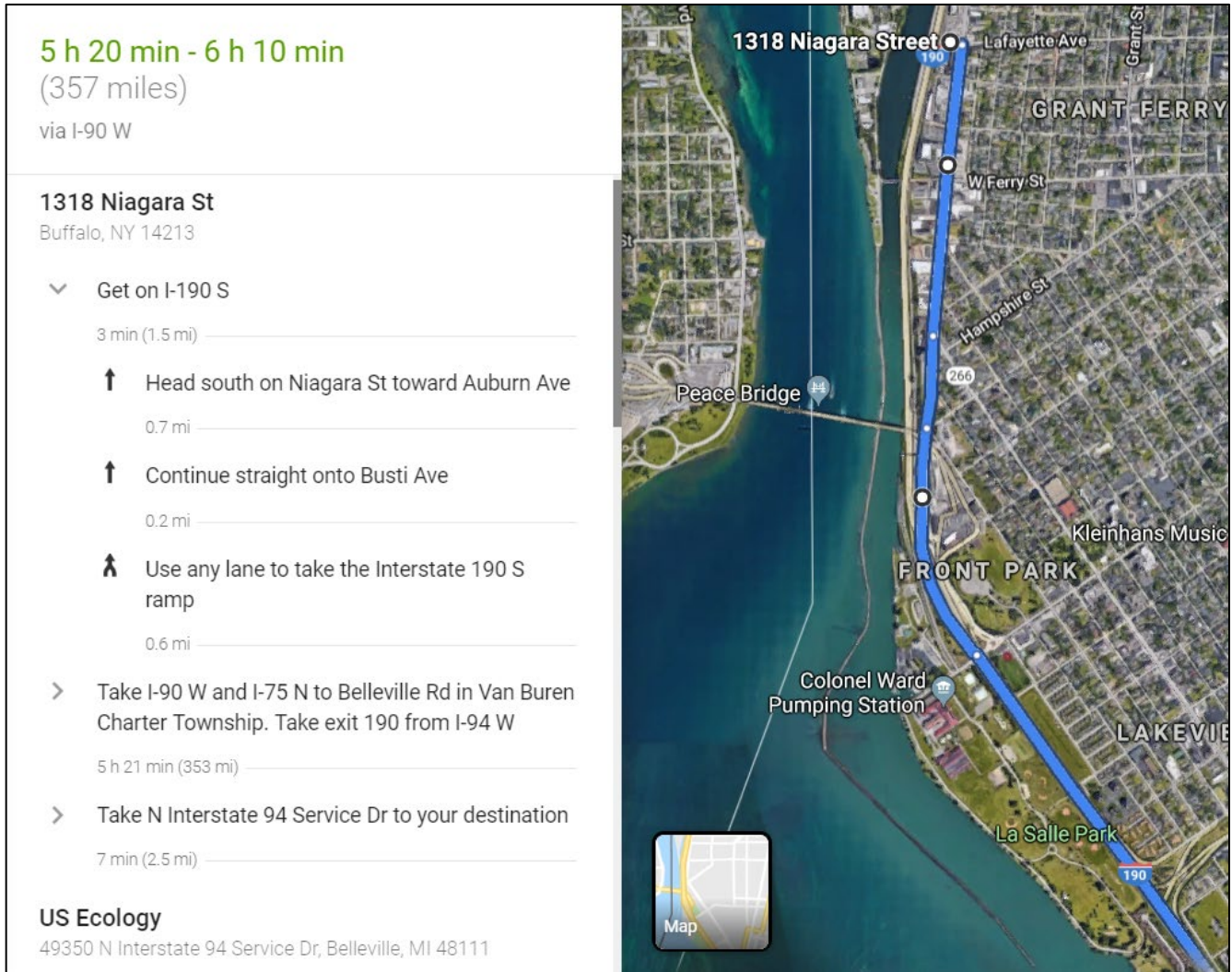
During the interim remedial measure, material will be brought off-site to US Ecology and Republic Services Landfill. Material will be brought on-site from one or more to be determined locations¹. Due to the construction of street improvements on the east side of Niagara Street, trucks will approach the site from the north and depart the site to the south so as to drive on the west side of Niagara Street. When entering the site, traffic will be temporarily halted, and trucks will be backed in by flaggers. Truck haul routes are described below:

2.1 US ECOLOGY

Trucks will transport TSCA material to US Ecology in Belleville, MI. Trucks will enter the site from the north and be backed into the Site. Trucks will exit the Site with a right-hand turn to the south and travel to I-190S. Due to the length of the haul route, trucks traveling to US Ecology will not return to the Site during the work day.

¹ Samples from two sources are currently being analyzed.

Figure 1: Directions from 1318 Niagara Street to US Ecology



2.2 REPUBLIC SERVICES LANDFILL

Trucks will transport non-TSCA material to Republic Services Landfill, Niagara Falls, NY. Trucks will enter the site from the north and be backed into the Site. Trucks will exit the Site with a right-hand turn to the south and travel to I-190N.

Figure 2: Directions from 1318 Niagara Street to Republic Services Land Fill

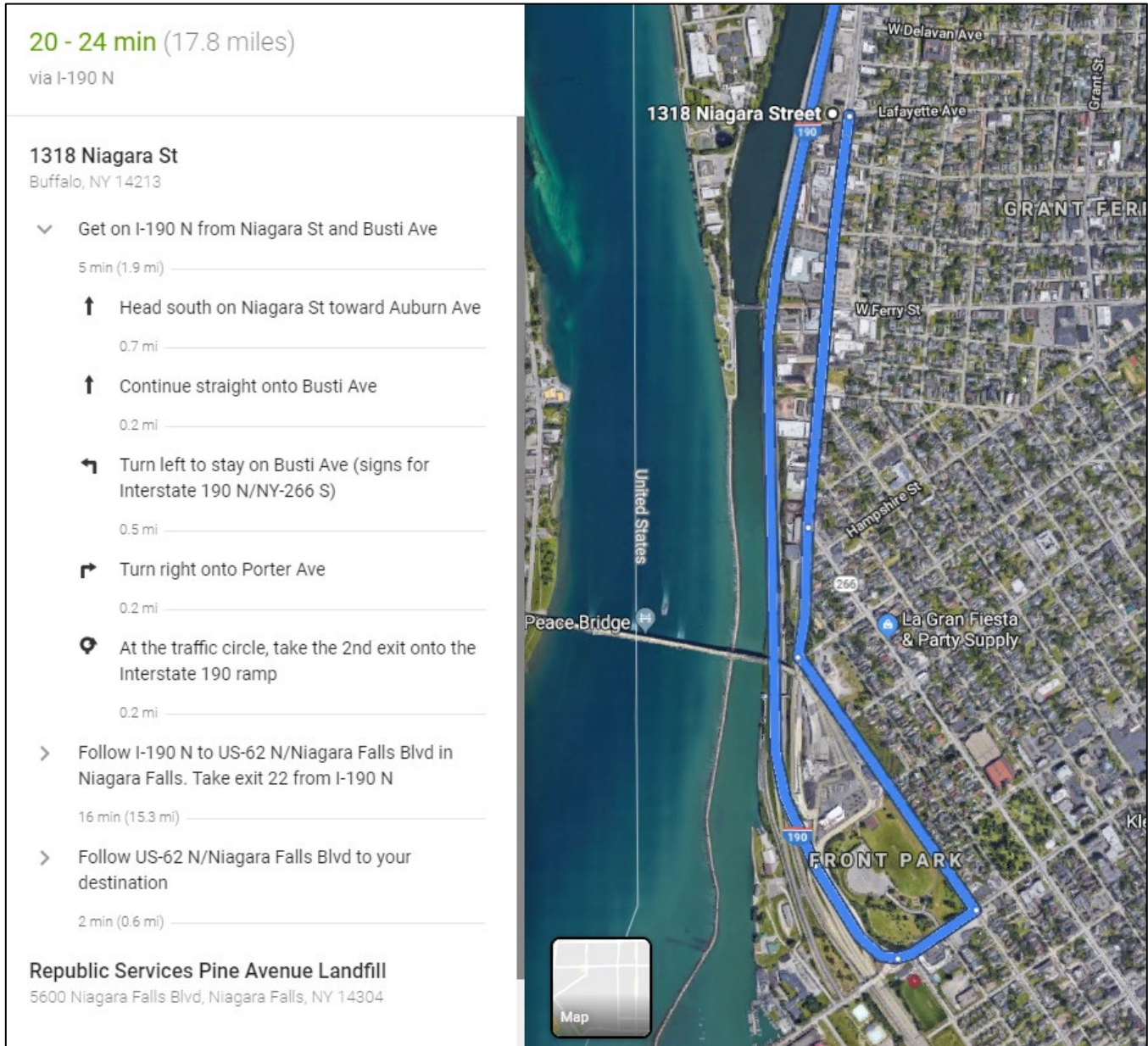
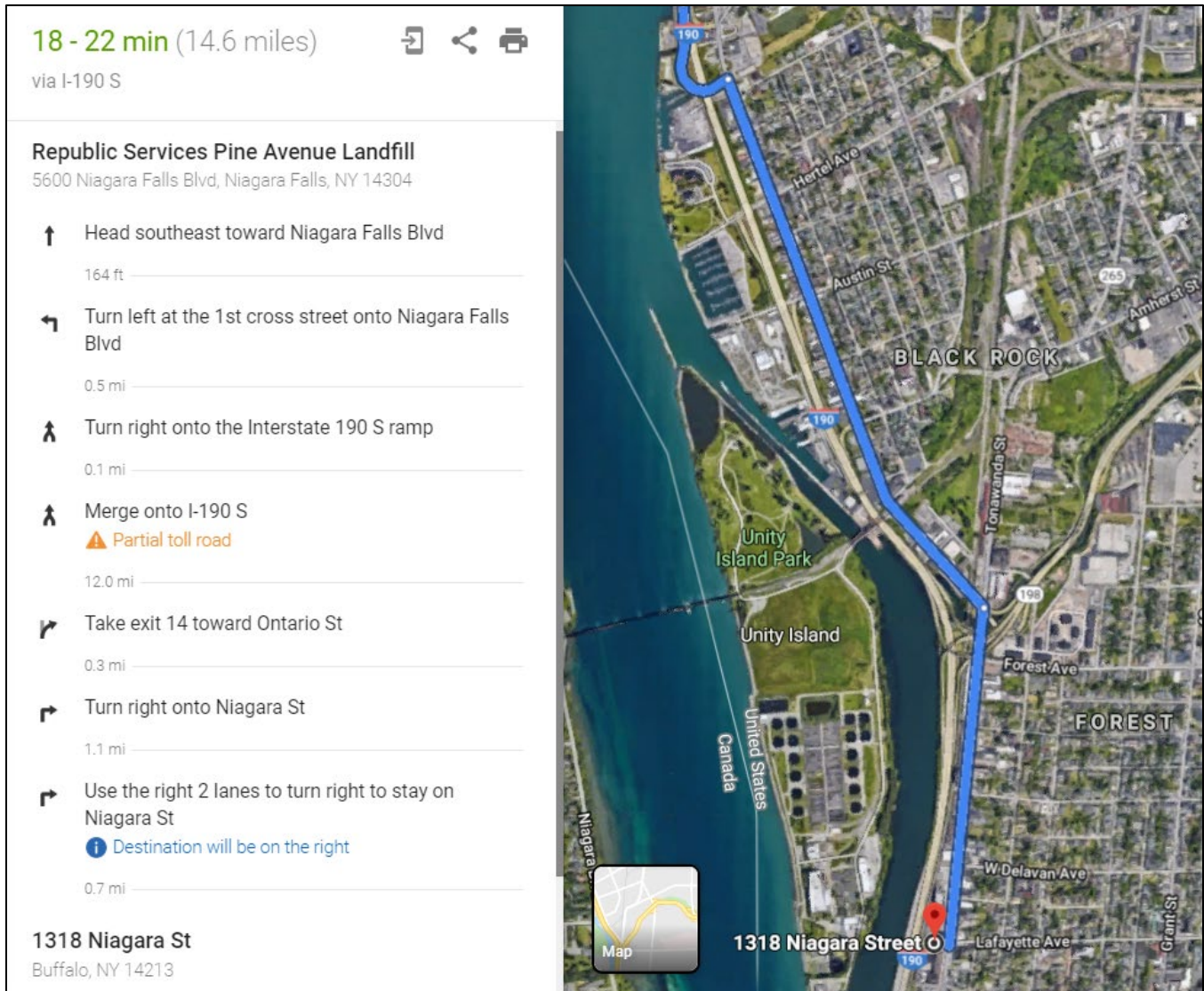


Figure 3: Directions from Republic Services Land Fill to 1318 Niagara Street



3. MAINTENANCE AND PROTECTION OF TRAFFIC

A Maintenance and Protection of Traffic Plan was developed to indicate appropriate signage on Niagara Street during construction (design drawings sheet **C-104**). This plan will be carried out in coordination with City of Buffalo Department of Public Works and the scheduled Niagara Street Improvements scheduled for September of 2019.



Appendix G
Waste Management
Handling and Disposal
Plan

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE WASTE MANAGEMENT HANDLING AND DISPOSAL PLAN



September 2019



TABLE OF CONTENTS

| | |
|---|---|
| 1. Introduction | 1 |
| 2. Sources of material and waste | 1 |
| 2.1 Soils and Debris | 1 |
| 2.2 Other | 1 |
| 3. Material and Waste Classifications and Disposal Locations..... | 1 |
| 3.1 TSCA Excavated Soils..... | 1 |
| 3.2 Non-TSCA Excavated and OTHER WASTE MATERIALS Soils | 2 |
| 4. Material Waste Removal and Transport Procedures | 2 |
| 4.1 TSCA..... | 2 |
| 4.2 Non-TSCA | 2 |
| 5. Documentation Procedures and Requirements | 2 |
| 5.1 Documentation of Field Activities..... | 2 |
| 5.2 Documentation During Transportation and Disposal..... | 3 |
| 5.3 Specific Requirements for Waste Shipments | 3 |

1. INTRODUCTION

This Waste Management Handling and Disposal Plan (WMHDP) has been developed to classify materials and wastes expected to result from the implementation of the interim remedial measure (IRM) for the 1318 Niagara Street site (Site) in Buffalo, NY. This WMHDP describes the regulatory requirements for management of such materials and wastes; the procedures to be followed during the remedial action activities for material and waste management, transportation, and offsite disposal; and the applicable notification, documentation, and reporting requirements.

2. SOURCES OF MATERIAL AND WASTE

The anticipated materials and wastes to be generated from the implementation of the remedial action activities at the Site include, but are not limited to:

2.1 SOILS AND DEBRIS

- Polychlorinated biphenyl (PCB) contaminated soil (both greater than 50 ppm and between 1 and 50 ppm)
- Water from excavation areas and surface runoff
- Spent Personal Protective Equipment (PPE), Debris and Disposable Equipment

2.2 OTHER

- Common trash (non-contaminated)
- Concrete
- Fencing
- Waste Oil from equipment

3. MATERIAL AND WASTE CLASSIFICATIONS AND DISPOSAL LOCATIONS

Toxic Substance Control Act (TSCA) and non-TSCA soils will be transported to different facilities as described below. GES will coordinate all facility approvals and transport manifests and notifications. Truck haul routes are identified as part of the *Traffic Control Plan* (**Appendix F** of the Remedial Action Work Plan).

3.1 TSCA EXCAVATED SOILS

Soil containing PCBs at concentrations of 50 mg/kg or greater will be managed as TSCA waste. In New York State, soil containing PCB concentrations of 50 mg/kg or greater is also required to be managed as hazardous waste. TSCA materials excavated during the remedial activities will be transported to an appropriately licensed and permitted facility. It is anticipated that TSCA soils will be disposed of at US Ecology, the designated TSCA disposal facility approved by the NYSDEC.

TSCA Soils Treatment: US Ecology
Location: 49350 North I-94 Service Drive, Belleville, MI 48111
US EPA ID Number: MID048090633
Name of Responsible Contact: Bob Nemeth
Telephone Number: 614-766-9957

Truck Transport: US Bulk Transport Inc.
US EPA ID Number: PAD987347515
Name of Responsible Contact: Craig Goodel
Telephone Number: 800-642-8910

3.2 NON-TSCA EXCAVATED AND OTHER WASTE MATERIALS SOILS

Soil and materials containing PCBs at concentrations less than 50 mg/kg will be managed as non-TSCA (solid) waste. All non-TSCA materials removed during the remedial activities will be transported to an appropriate, licensed and permitted facility. It is anticipated that non-TSCA soils will be disposed of at Republic Services Landfill, the designated disposal facility approved by the NYSDEC. GES will prepare all bills-of-lading for loads.

Non-TSCA Soils Treatment: Republic Services Landfill
Location: Niagara Falls, NY
Name of Responsible Contact: Kathy Iodice
Telephone Number: (716) 285-3344

Truck Transport: US Bulk Transport Inc.
US EPA ID Number: PAD987347514
Name of Responsible Contact: Craig Goodel
Telephone Number: 800-642-8910

4. MATERIAL WASTE REMOVAL AND TRANSPORT PROCEDURES

Poly tarps with shepherd's hooks will be placed along the side of the truck bed to prevent soil being loaded from contacting the side of the truck.

GES will inspect all trucks/tires entering and leaving the containment area to confirm they are free of residual soil debris and there are no oil/fluid leaks. If necessary, trucks will be directed to a decontamination pad (as shown in the Construction Work Plan) for decontamination prior to leaving the Soil Staging Area. At the end of each work day, GES will cover all the exposed material inside the containment area with poly cover and will sandbag the cover during non-working hours.

When wastes are shipped for offsite disposal, GES will maintain a daily summary of loads managed on-site and delivery offsite. GES will coordinate with all transporters of material designated for offsite disposal to assure that adequate transport vehicles are available to meet the project schedule. It is anticipated that all materials for off-site disposal will leave the site via truck. GES will coordinate loads such that a minimal impact to existing traffic patterns and surrounding properties is realized.

4.1 TSCA

It is anticipated that all TSCA-regulated waste will be direct loaded into trucks and removed from the site.

4.2 NON-TSCA

It is anticipated that Non-TSCA waste will be direct loaded into trucks and removed from the site.

5. DOCUMENTATION PROCEDURES AND REQUIREMENTS

Material and waste management activities will be closely documented to ensure that all materials and wastes are properly handled for shipment and disposal. Prior to the trucks leaving the site, OBG will sign the hazardous waste manifest as an authorized agent of the City of Buffalo.

5.1 DOCUMENTATION OF FIELD ACTIVITIES

Field activities that generate material and waste will be properly documented to establish the origins of such material and waste for proper disposal. GES is responsible for the initial documentation associated with generation of material or waste. At a minimum, the following information will be recorded when material or waste is generated and containerized:

- The date of generation.
- The location from which the waste is generated.

- A description of the material or waste.
- Any pertinent observations about the material or waste.
- The approximate quantity of material or waste.
- The type of storage container used for the material or waste.
- Where the material or waste shall be staged while awaiting characterization and disposal.

5.2 DOCUMENTATION DURING TRANSPORTATION AND DISPOSAL

Transportation and disposal activities will be documented using a Material and Waste Disposal Tracking Log.

The following information will be recorded:


- The truck identification number for the material/waste.
- The material/waste disposal approval number.
- The quantity of the material/waste.
- The facility to which the material/waste was sent.
- The manifest number (PCB > 50 ppm) or bill-of-lading number (PCB < 50 ppm) for shipment off-site.
- The date the material/waste was shipped.
- The date on which it was received at the facility.
- The date a certificate of acceptance or destruction was received from the facility (if applicable).

5.3 SPECIFIC REQUIREMENTS FOR WASTE SHIPMENTS

All truck shipments must include either a Hazardous Manifest or Bill of Lading signed by OBG. GES will prepare and provide all shipping documents for review and site use. For tracking purposes, unique transport identification numbers will be assigned to all nonhazardous loads; a specific EPA hazardous waste manifest identification number will be used to truck TSCA material (NYR000102343).

TSCA material shipments must include Emergency Response Information meeting the requirements of 49 CFR 172 Subpart G. Emergency Response information may be added to paperwork for non-PCB hazardous loads as necessary or needed.

GES will manage all aspects of transportation for disposal of all waste at the Site. This will include the scheduling, staging, directing from various Site locations, issuance of required paperwork, and final inspection prior to exit from the Site.



Appendix H
Stormwater Pollution
Prevention Plan (SWPPP)

September 27, 2019

Regina Harris
Buffalo Sewer Authority
65 Niagara Square
Room 1038
Buffalo, New York 14202

RE: Remedial Action Work Plan 1318 Niagara Street, City of Buffalo, Erie County, NY DER Contract
No. D007623-39
FILE: 8653.71532

Dear **Regina Harris**:

Enclosed for the New York State Department of Environmental Conservation's (NYSDEC) review is the Stormwater Pollution Prevention Plan (SWPPP) for proposed work at the 1318 Niagara Street Site (the Site) located in the City of Buffalo, Erie County, New York that is being performed by the City of Buffalo under New York State's Environmental Restoration Program. This SWPPP addresses elements of the Site remedy that are detailed in the Remedial Action Work Plan (RAWP) including:

- Based on results of previous sampling, 1- to 2-ft deep excavations of material that exhibits concentrations that exceed residential soil cleanup objectives over a majority of the Site. At the southwest corner of the Site, 4 feet of soil will be excavated.
- Impacted soil (including PCB concentrations greater than 50 ppm) deeper than 4-ft below grade will be left in place below a demarcation layer of Mirafi 160NO or equal. Impacted soil outside of the parcel boundaries will be left in place.
- Silt fence and filter socks will be installed downgradient of earthwork activities to minimize the transport of sediment to the adjacent drainage swale in areas where stormwater runoff can flow off-site.
- The entire 0.77-acre area will receive a common fill, topsoil, and grass seed cover as shown on the Design Drawings. The Site will be backfilled and graded to pre-IRM conditions to allow for restricted use of the Site as a Pocket Park.

Additional details are provided in the RAWP which has been submitted to the NYSDEC for review under separate cover.

The Interim Remedial Measure (IRM) will be performed in substantive compliance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges Associated with Construction Activities GP-0-15-002 (Permit No. GP-0-15-002). Since this IRM is part of a remediation project aimed at creating vegetated open space, this "basic" SWPPP has been prepared by OBG, Part of Ramboll (OBG) on behalf of the City of Buffalo and is enclosed for your review.

Construction activities for the Project will be conducted in accordance with the Design Drawings and Technical Specifications prepared by OBG and the information included within this SWPPP. The Design Drawings include information on the proposed location, details, and descriptions of erosion and sediment control facilities to be installed to control erosion and minimize sedimentation. Erosion and sediment control facilities will be installed and maintained at the Site for the duration of the Project until these areas are stabilized in substantive compliance with Permit No. GP-0-15-002.



Should you have any questions or require additional information, please contact Kyle Buelow, CPESC/CPSWQ or me at your earliest convenience.

Very truly yours,
O'BRIEN & GERE ENGINEERS, INC.



Douglas M. Crawford, P.E.
Vice President

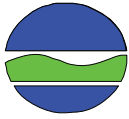
| | | |
|--------------|------------|--|
| Attachments: | Appendix A | SPDES General Permit Notice of Intent (NOI) |
| | Appendix B | Location Map |
| | Appendix C | Erosion and Sediment Control Specification |
| | Appendix D | Pre-Construction Requirements |
| | Appendix E | Inspection Reports |
| | Appendix F | SPDES General Permit Notice of Termination (NOT) |
| | Appendix G | NYSOPRHP Documentation |
| | Appendix H | Design Drawings (bound separately) |
| | Appendix I | MS4 Acceptance Form |

I:\Parsons-Eng.8653\71532.Remedial-Design\Docs\Reports\SWPPP\1318 Niagara Street SWPPP Letter.docx



**SPDES General Permit
Notice of Intent**

NOTICE OF INTENT



**New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505**

NYR
(For DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002
All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

- IMPORTANT -
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

C I T Y O F B U F F A L O

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Y O U N G - W A T K I N S

Owner/Operator Contact Person First Name

H O P E

Owner/Operator Mailing Address

9 0 5 C I T Y H A L L

City

B U F F A L O

State

N Y

Zip

1 4 2 0 2 -

Phone (Owner/Operator)

7 1 6 - 8 5 1 - 5 2 7 5

Fax (Owner/Operator)

- -

Email (Owner/Operator)

H Y O U N G - W A T K I N S @ C H . C I . B U F F A L O . N Y . U S

FED TAX ID

1 6 - 6 0 0 2 5 3 3 (not required for individuals)

Project Site Information

Project/Site Name

1 3 1 8 N I A G A R A S T R E E T S I T E

Street Address (NOT P.O. BOX)

1 3 1 8 N I A G A R A S T R E E T

Side of Street

North South East West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

B U F F A L O

State

N Y

Zip

1 4 2 1 3 -

County

E R I E

DEC Region

9

Name of Nearest Cross Street

L A F A Y E T T E A V E N U E

Distance to Nearest Cross Street (Feet)

9 0

Project In Relation to Cross Street

North South East West

Tax Map Numbers Section-Block-Parcel

8 8 . 8 1 - 1 - 1 0 . 1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

1 8 1 7 4 4

Y Coordinates (Northing)

4 7 5 9 3 1 0

2. What is the nature of this construction project?

- New Construction
- Redevelopment with increase in impervious area
- Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

SELECT ONLY ONE CHOICE FOR EACH

**Pre-Development
Existing Land Use**

- FOREST
- PASTURE/OPEN LAND
- CULTIVATED LAND
- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY
- PARKING LOT
- OTHER

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**Post-Development
Future Land Use**

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- MUNICIPAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY (water, sewer, gas, etc.)
- PARKING LOT
- CLEARING/GRADING ONLY
- DEMOLITION, NO REDEVELOPMENT
- WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- OTHER

Number of Lots

| | | |
|--|--|--|
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|--|--|--|

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***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

| Total Site Area | Total Area To Be Disturbed | Existing Impervious Area To Be Disturbed | Future Impervious Area Within Disturbed Area | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------------------|--|--|---|---|---|--|--|--|--|---|---|---|--|--|--|--|---|---|---|--|--|--|--|---|---|---|
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5. Do you plan to disturb more than 5 acres of soil at any one time? Yes No

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

| | | | | | | | | | | | | | | | |
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| <p>A</p> <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td></td><td></td><td></td></tr></table> % | | | | <p>B</p> <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td></td><td></td><td></td></tr></table> % | | | | <p>C</p> <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td></td><td></td><td></td></tr></table> % | | | | <p>D</p> <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td>1</td><td>0</td><td>0</td></tr></table> % | 1 | 0 | 0 |
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| 1 | 0 | 0 | | | | | | | | | | | | | |

7. Is this a phased project? Yes No

8. Enter the planned start and end dates of the disturbance activities.

| | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|
| Start Date | - | End Date | | | | | | | | | | | | | | | | |
| <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td>0</td><td>9</td></tr></table> / <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td>0</td><td>3</td></tr></table> / <table border="1" style="display: inline-table; width: 60px; height: 20px;"><tr><td>2</td><td>0</td><td>1</td><td>9</td></tr></table> | 0 | 9 | 0 | 3 | 2 | 0 | 1 | 9 | | <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td>1</td><td>1</td></tr></table> / <table border="1" style="display: inline-table; width: 40px; height: 20px;"><tr><td>1</td><td>5</td></tr></table> / <table border="1" style="display: inline-table; width: 60px; height: 20px;"><tr><td>2</td><td>0</td><td>1</td><td>9</td></tr></table> | 1 | 1 | 1 | 5 | 2 | 0 | 1 | 9 |
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| 0 | 3 | | | | | | | | | | | | | | | | | |
| 2 | 0 | 1 | 9 | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | |
| 1 | 5 | | | | | | | | | | | | | | | | | |
| 2 | 0 | 1 | 9 | | | | | | | | | | | | | | | |

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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9a. Type of waterbody identified in Question 9?

- Wetland / State Jurisdiction On Site (Answer 9b)
- Wetland / State Jurisdiction Off Site
- Wetland / Federal Jurisdiction On Site (Answer 9b)
- Wetland / Federal Jurisdiction Off Site
- Stream / Creek On Site
- Stream / Creek Off Site
- River On Site
- River Off Site
- Lake On Site
- Lake Off Site
- Other Type On Site
- Other Type Off Site

9b. How was the wetland identified?

- Regulatory Map
- Delineated by Consultant
- Delineated by Army Corps of Engineers
- Other (identify)

| | | | | | | | | | | | | | | | | | | |
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10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? Yes No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? Yes No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? Yes No
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? Yes No
If Yes, what is the acreage to be disturbed?

| | | | | | | |
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14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? Yes No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? Yes No Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Two rows of 25 empty rectangular boxes for text entry.

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? Yes No Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? Yes No

19. Is this property owned by a state authority, state agency, federal government or local government? Yes No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) Yes No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? Yes No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? Yes No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? Yes No

25. Has a construction sequence schedule for the planned management practices been prepared? Yes No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- Check Dams
- Construction Road Stabilization
- Dust Control
- Earth Dike
- Level Spreader
- Perimeter Dike/Swale
- Pipe Slope Drain
- Portable Sediment Tank
- Rock Dam
- Sediment Basin
- Sediment Traps
- Silt Fence
- Stabilized Construction Entrance
- Storm Drain Inlet Protection
- Straw/Hay Bale Dike
- Temporary Access Waterway Crossing
- Temporary Stormdrain Diversion
- Temporary Swale
- Turbidity Curtain
- Water bars

Biotechnical

- Brush Matting
- Wattling

Other

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Vegetative Measures

- Brush Matting
- Dune Stabilization
- Grassed Waterway
- Mulching
- Protecting Vegetation
- Recreation Area Improvement
- Seeding
- Sodding
- Straw/Hay Bale Dike
- Streambank Protection
- Temporary Swale
- Topsoiling
- Vegetating Waterways

Permanent Structural

- Debris Basin
- Diversion
- Grade Stabilization Structure
- Land Grading
- Lined Waterway (Rock)
- Paved Channel (Concrete)
- Paved Flume
- Retaining Wall
- Riprap Slope Protection
- Rock Outlet Protection
- Streambank Protection

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- Preservation of Undisturbed Areas
- Preservation of Buffers
- Reduction of Clearing and Grading
- Locating Development in Less Sensitive Areas
- Roadway Reduction
- Sidewalk Reduction
- Driveway Reduction
- Cul-de-sac Reduction
- Building Footprint Reduction
- Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

. **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

| <u>RR Techniques (Area Reduction)</u> | <u>Total Contributing Area (acres)</u> | | and/or | <u>Total Contributing Impervious Area (acres)</u> | |
|---|--|----------------------|--------|---|----------------------|
| <input type="radio"/> Conservation of Natural Areas (RR-1) ... | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Tree Planting/Tree Pit (RR-3) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Disconnection of Rooftop Runoff (RR-4) .. | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <u>RR Techniques (Volume Reduction)</u> | | | | | |
| <input type="radio"/> Vegetated Swale (RR-5) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Rain Garden (RR-6) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Stormwater Planter (RR-7) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Rain Barrel/Cistern (RR-8) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Porous Pavement (RR-9) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Green Roof (RR-10) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <u>Standard SMPs with RRv Capacity</u> | | | | | |
| <input type="radio"/> Infiltration Trench (I-1) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Infiltration Basin (I-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Dry Well (I-3) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Underground Infiltration System (I-4) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Bioretention (F-5) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Dry Swale (O-1) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <u>Standard SMPs</u> | | | | | |
| <input type="radio"/> Micropool Extended Detention (P-1) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Wet Pond (P-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Wet Extended Detention (P-3) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Multiple Pond System (P-4) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Pocket Pond (P-5) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Surface Sand Filter (F-1) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Underground Sand Filter (F-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Perimeter Sand Filter (F-3) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Organic Filter (F-4) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Shallow Wetland (W-1) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Extended Detention Wetland (W-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Pond/Wetland System (W-3) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Pocket Wetland (W-4) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |
| <input type="radio"/> Wet Swale (O-2) | <input type="text"/> | <input type="text"/> | | <input type="text"/> | <input type="text"/> |

**Table 2 - Alternative SMPs
(DO NOT INCLUDE PRACTICES BEING
USED FOR PRETREATMENT ONLY)**

| <u>Alternative SMP</u> | <u>Total Contributing Impervious Area (acres)</u> | | | | | | | | | | | | |
|---|---|--|--|--|--|--|---|--|--|--|--|--|--|
| <input type="radio"/> Hydrodynamic | | | | | | | . | | | | | | |
| <input type="radio"/> Wet Vault | | | | | | | . | | | | | | |
| <input type="radio"/> Media Filter | | | | | | | . | | | | | | |
| <input type="radio"/> Other <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table> | | | | | | | . | | | | | | |

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRV provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRV capacity identified in question 29.

Total RRV provided

 .

acre-feet

31. Is the Total RRV provided (#30) greater than or equal to the total WQv required (#28). Yes No
 If Yes, go to question 36.
 If No, go to question 32.

32. Provide the Minimum RRV required based on HSG.
 [Minimum RRV Required = (P) (0.95) (Ai) / 12, Ai = (S) (Aic)]

Minimum RRV Required

 .

acre-feet

32a. Is the Total RRV provided (#30) greater than or equal to the Minimum RRV Required (#32)? Yes No
 If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided
 . **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). .

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? **Yes** **No**

**If Yes, go to question 36.
 If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.**

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required . **acre-feet** **CPv Provided** . **acre-feet**

36a. The need to provide channel protection has been waived because:

- Site discharges directly to tidal waters or a fifth order or larger stream.
- Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development . **CFS** **Post-development** . **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development . **CFS** **Post-development** . **CFS**

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- Air Pollution Control
- Coastal Erosion
- Hazardous Waste
- Long Island Wells
- Mined Land Reclamation
- Solid Waste
- Navigable Waters Protection / Article 15
- Water Quality Certificate
- Dam Safety
- Water Supply
- Freshwater Wetlands/Article 24
- Tidal Wetlands
- Wild, Scenic and Recreational Rivers
- Stream Bed or Bank Protection / Article 15
- Endangered or Threatened Species (Incidental Take Permit)
- Individual SPDES

SPDES Multi-Sector GP

| | | | | | | | |
|---|---|---|--|--|--|--|--|
| N | Y | R | | | | | |
|---|---|---|--|--|--|--|--|

Other

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|---|
| D | E | R | | C | O | N | T | R | A | C | T | | # | D | 0 | 0 | 7 | 6 | 2 | 3 | - | 3 | 9 |
|---|---|---|--|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|---|

None

41. Does this project require a US Army Corps of Engineers Wetland Permit? Yes No
If Yes, Indicate Size of Impact.

| | | | | | | |
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| | | | | | | |
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42. Is this project subject to the requirements of a regulated, traditional land use control MS4? Yes No
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? Yes No

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.

| | | | | | | | | |
|---|---|---|--|--|--|--|--|--|
| N | Y | R | | | | | | |
|---|---|---|--|--|--|--|--|--|

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

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Print Last Name

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| S | U | T | T | O | N | | | | | | | | | | | | | | |
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Owner/Operator Signature

| | | | | | | | | | | | | | | | | | | | |
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Date

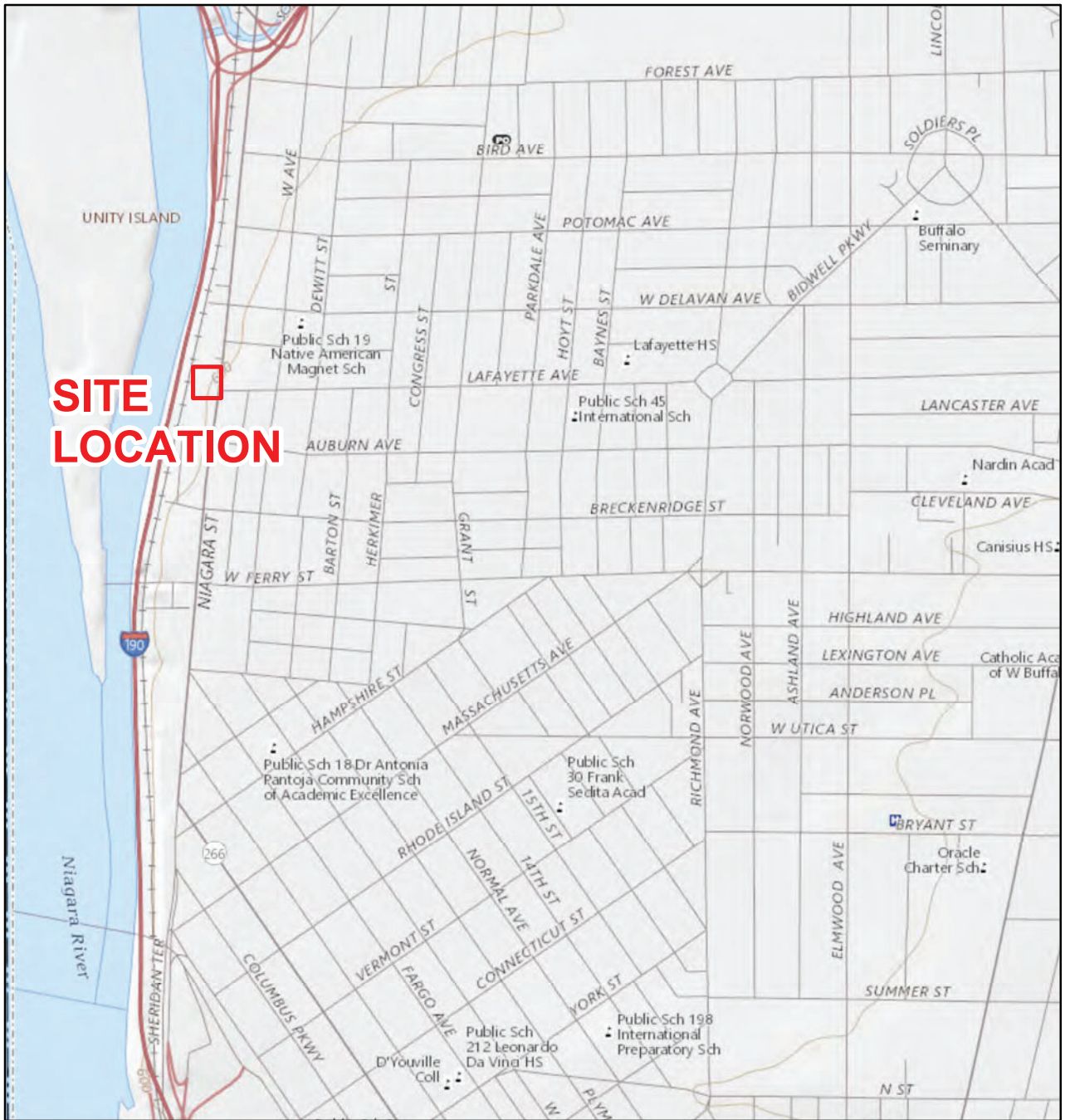
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Location Map

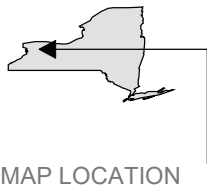
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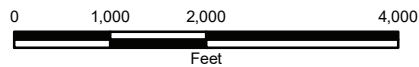


ADAPTED FROM: BUFFALO NW USGS QUADRANGLE

NYSDEC
1318 NIAGARA STREET IRM
BUFFALO, NEW YORK



SITE LOCATION



1:24,000





Erosion and Sediment Control Specification

SECTION 31 25 00 EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

This Section includes temporary erosion and sediment control measures intended to minimize erosion of soils and sedimentation of lands and waters adjacent to or affected by the proposed Interim Remedial Measure for the 1318 Niagara Street, Buffalo NY site.

1.1 REFERENCES

- A. All work shall be performed in compliance with the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-15-002). Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications:
 1. NYSDEC Standards and Specifications for Erosion and Sediment Control. (NYSDEC 2016).
 2. New York State Stormwater Management Design Manual (the design Manual) prepared by the Center for Watershed Protection for the NYSDEC (2015).
- B. Approval from the NYSDEC shall be received prior to disturbance of more than 5 acres at one time.

1.2 SUBMITTALS

- A. Submit shop drawings of silt fence and vegetative seed mixes for approval.

PART 2 - MATERIALS

2.1 GENERAL

- A. Provide all necessary supervision, labor, equipment and materials needed to perform the specified work. Materials may include vegetation, silt fence, silt barrier, stone, erosion control fabric, and other manufactured products to reduce erosion and control sedimentation.

2.2 SILT BARRIER

- A. Silt barrier socks shall be Filtrexx Sediment Control System units or approved equal and range between 12-24 inches in height. Mulch used inside the units shall be from native woody vegetation and shall be free of any refuse, contaminants or other materials toxic to plant growth. Chips from allelopathic species such as black walnut (*Juglans nigra*) shall not be used.
- B. Material from plants identified on the Prohibited and Regulated Invasive Species - 6 NYCRR Part 575 (http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf) shall not be used.

2.3 STABILIZED CONSTRUCTION ACCESS

- A. Stone used for stabilized construction accesses shall be a minimum of 2-inch stone. Equivalent material (i.e., reclaimed concrete) may be used with approval.
- B. Geotextile bedding shall consist of Mirafi 500X or equal.
- C. Overall dimensions and installation notes are as shown on the Contract Drawings.

2.4 TEMPORARY VEGETATION

- A. See Section 3.02.

2.5 DUST CONTROL

- A. Measures may include water application or mulching but shall not include use of chemical additives.

PART 3 - CONSTRUCTION DETAILS

3.1 SEQUENCE

- A. A temporary stabilized construction access shall be installed in the ingress and egress locations. If needed, vehicles/equipment shall be washed on the access prior to leaving the site. Periodic top dressing of the access shall be performed as necessary as material accumulates to prevent tracking of material onto off-site roadways.
- B. Silt fence or silt barrier shall be installed along toes of embankments, on downstream portions of the site perimeter, and around spoil piles and stockpiles.
- C. Staging/laydown areas for vehicles and construction equipment shall be located on stabilized portions of the site.
- D. Additional erosion and sediment control (ESC) facilities shall be installed as shown on the Contract Drawings. These facilities shall remain in place until construction activities are completed and the site is stabilized.
- E. Stockpiled and exposed soil shall be stabilized, topsoiled, seeded, and mulched in accordance with the Contract Documents.
- F. Upon stabilization of the site and approval of final site inspection, temporary ESC measures shall be removed.

3.2 TEMPORARY STABILIZATION

- A. The project approach includes planting the project area with permanent vegetation as soon as practicable. In the event of unforeseen project delays (i.e., longer than the time frames in Permit No. GP-0-15-002), areas shall be temporarily stabilized with the following measures:
 - B. Spread additives into soil by approved methods.
 - C. The seed shall not be more than two years old. Germination tests of the seed proposed to be used shall be made not more than six months prior to seeding operations. The seed mixture may be varied to suit special conditions of soil peculiar to the areas to be seeded. Seed that has become wet, moldy, or otherwise damaged in transit or storage shall not be acceptable.
 - D. Temporary seed shall be applied as follows: oats at a rate of 45 pounds per acre and white clover at a rate of 5 pounds per acre. If performed between October 1 and March 31, winter wheat shall also be applied at a rate of 10 pounds per acre. Spread seed by hand or approved sowing equipment.
 - E. After sowing has been completed, apply mulch evenly over the entire seeded area at a rate of 2 tons per acre.

3.3 PERMANENT STABILIZATION

- A. Permanent stabilization measures shall be initiated pursuant to the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC 2016) as soon as practicable. For portions of the site where soil disturbance activities have permanently ceased, stabilization measures must be implemented within 7 days of the conclusion of activities. This requirement does not apply if the installation of stabilization measures is precluded by snow cover or frozen ground conditions; however, measures shall be implemented as soon as practicable.

3.4 ADDITIONAL STORMWATER CONTROLS

- A. Listed below is a description of additional controls and measures that shall be implemented at the site to minimize sediment and chemical transport via stormwater:
 1. Proper precautions shall be taken so soil does not spill or is tracked onto adjacent roadways during earthwork. Soil shall be removed as soon as practicable so that it does not enter surface and subsurface drainage systems.
 2. Dust control measures shall be provided before dust migrates off-site. Measures may include water application or mulching but shall not include use of chemical additives.
 3. Planting materials shall be properly stored and/or contained.
 4. Chemicals (e.g., herbicides) with spill potential shall have secondary containment (e.g., spill pallets) or be stored indoors in sealed, non-leaking containers shall have appropriate secondary containment.

3.5 MAINTENANCE

- A. Construction period operation and maintenance:
 1. Clean, repair and/or replace silt fences, silt barriers, and construction accesses as necessary.
 2. Remove sediment from silt fence and silt barriers when it has accumulated to one half the design capacity.
 3. Clean and/or sweep affected roadways daily, or more frequently if otherwise required based on periodic inspections.
 4. Observe equipment and vehicles within the work area, particularly for identification of vehicles leaking petroleum products that could enter stormwater drainage facilities.
 5. Stabilized construction accesses and construction access pathways shall be resurfaced as necessary.
 6. Remove debris and litter on a weekly basis or more frequently if necessary.
- B. Post-construction operation and maintenance:
 1. Vegetation within the project area shall be monitored and maintained. Dead vegetation shall be replaced as necessary to maintain a minimum ground coverage of 80%.
 2. Areas shall be maintained and/or reseeded or stabilized to protect against erosion.
 3. Sloughing or erosion of embankments shall be repaired.

3.6 INSPECTION DURING CONSTRUCTION

A. General

A qualified inspector¹ shall inspect the proposed erosion and sediment control measures and disturbed areas of the construction site for compliance with the SWPPP until the site is stabilized. The qualified inspector shall conduct at least one site inspection every seven calendar days. For sites where the owner has received authorization from the NYSDEC to disturb greater than 5-acres of soil at one time, a minimum of two site inspections shall be completed every seven calendar days. There shall be a minimum of two full calendar days between inspections. A typical inspection report form for conducting the inspections is included in Appendix E of the SWPPP.

The qualified inspector shall complete the inspection report form following each inspection. The inspection report form shall include the inspector's name, date, findings of the inspections, notes, and actions taken to repair/replace defective control measures. A site map indicating locations of areas of concern and drainage pathways shall be included. Within one business day of the completion of an inspection, the qualified inspector shall notify site personnel of any corrective actions that need to be taken. Corrective actions shall be initiated within one business day of this notification and shall be completed within seven calendar days following the date of the inspection. Further mitigation measures shall be taken if warranted. Each inspection report is to remain on file at the site as part of the SWPPP until the site is stabilized and the SPDES Notice of Termination (NOT) is submitted to the NYSDEC.

Prior to construction, at least one "trained contractor"² shall be identified who shall be responsible for implementation of the SWPPP and inspection of the erosion and sediment controls in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC 2016). At least one trained contractor shall be on site on a daily basis while soil disturbance activities are being performed.

¹ Qualified inspector means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other NYSDEC endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four hours of training every three years.

² Trained contractor means an employee from the contracting (construction) company that has received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the trained contractor shall receive four hours of training every three years. It can also mean an employee from the contracting (construction) company that meets the qualified inspector qualifications (e.g., licensed Professional Engineer, CPESC, Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity). The trained contractor shall be responsible for the day to day implementation of the SWPPP.

B. Temporary Construction Shutdown (Winter Conditions)

When soil-disturbing activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to disturbed areas, periodic inspections by the trained contractor may be halted. However, the qualified inspector must perform a site inspection at least once every 30 calendar days. The NYSDEC shall be notified in writing prior to reducing the inspection frequencies. Inspections by the trained contractor and qualified inspector shall resume in accordance with this Section as soon as soil disturbance activities resume.

3.7 NON-STORMWATER DISCHARGES

- A. Areas at the site dedicated for construction vehicle transit or equipment staging shall be identified by the trained contractor which shall be monitored and where runoff can be controlled. Cleaning of construction vehicles and equipment shall occur in designated staging/laydown areas. Chemicals and detergents shall not be used unless within a designated decontamination area.
- B. Water used for dust control measures shall be applied using proper quantities and equipment to avoid runoff to the extent practicable. No chemical additives shall be used.

3.8 SPILL PREVENTION

- A. The following spill prevention measures shall be performed:
 1. Products shall be kept in their original containers with the original manufacturer's label to the extent practicable.
 2. Materials with potential for spillage that are stored on-site shall be stored in a neat, orderly manner in their appropriate containers and in secondary containment.
 3. Substances shall not be mixed with one another unless recommended by the substance manufacturer.
 4. Whenever possible, product shall be used up or packages resealed before proper management of contents and containers off site.
 5. Manufacturers' recommendations for proper use and disposal shall be followed.
 6. Inspection shall be made for proper use of materials.
 7. On-site vehicles shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage of petroleum products. Petroleum products shall be stored in closed containers which are clearly labeled. Used oils shall be disposed of properly.
 8. Materials shall be brought on-site in the minimum quantities required to limit on-site storage.
 9. Refueling of vehicles and equipment shall occur a minimum of 50-feet from streams, lakes and wetlands.

3.9 SPILL CONTROL PRACTICES

- A. Spills of petroleum, toxins, or hazardous material shall be reported to the appropriate State or local government agencies. Spills shall be cleaned upon discovery.
- B. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the recommended methods and cleanup supplies.
- C. Materials and equipment necessary for spill cleanup shall be kept in an on-site material storage area. Equipment and materials shall include but not be limited to shovels, rags, gloves, goggles, spill control materials, sand, sawdust, and trash containers specifically for this purpose.
- D. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- E. A spill report shall be completed and shall include a description of the spill, what caused it, and the corrective measures taken. Spills shall be reported the NYS Spill Hotline (1-800-457-7362) within 2 hours of discovery unless the quantity is known to be less than 5 gallons and is contained.

3.10 CERTIFICATIONS

- A. Contractor Certification - Each Contractor involved in soil disturbance shall understand and sign a form (see Appendix D-3) containing the following certification statement:
 - 1. "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or the operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."
- B. Prior to construction, at least one qualified inspector shall be identified who shall understand and sign a form (see Appendix E) containing the following certification statement:
 - 2. "I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

3.11 NOTICE OF INTENT/TERMINATION

- A. The completed and signed SPDES Notice of Intent (NOI) shall be submitted to the NYSDEC prior to initiation of construction activities. The SPDES NOT shall be completed and submitted to the NYSDEC upon completion of construction and stabilization of the project area.

END OF SECTION

**Pre-Construction
Requirements**

PRE-CONSTRUCTION REQUIREMENTS: PRE-CONSTRUCTION MEETING DOCUMENTS AND INSPECTION REPORTS

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

PREAMBLE TO SITE ASSESSMENT AND INSPECTIONS

The following information is to be read by all person's involved in the construction of stormwater related activities for this project:

- The Owner/Operator shall have a “qualified inspector¹” conduct an assessment of the site prior to the “commencement of construction²”. The Owner/Operator shall certify using this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed and implemented to ensure overall preparedness of the site for the “commencement of construction²”.
- When construction starts, site inspections shall be conducted by the “qualified inspector” at least once every seven calendar days. For sites where the Owner/Operator has received authorization from the New York State Department of Environmental Conservation (NYSDEC) to disturb greater than five acres of soil at one time, the “qualified inspector” shall conduct at least two site inspections every seven calendar days. There shall be a minimum of two full calendar days between inspections. The Owner/Operator shall maintain a record of all inspection reports on site and have them available to the permitting authorities upon request.
- Prior to filing the Notice of Termination (NOT) or the end of permit term, the Owner/Operator shall have a “qualified inspector” perform a final site inspection. The “qualified inspector” shall certify that the site has undergone “final stabilization” using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing, etc.) not needed for long-term erosion control have been removed. In addition, the Owner/Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and the operation and maintenance plan has been received and will be implemented to ensure the structure(s) continuously functions as designed.
- This document needs to be kept on file at the work site (*e.g.*, in the work trailer) at all times.
- The Owner/Operator and the Contractors shall read the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities GP-0-15-002. This SWPPP has been prepared for this project to assist the Contractors with compliance with GP-0-15-002. The Contractors must follow the SWPPP and understand that this document constitutes the minimum standards for compliance.
- In the event of a transfer of ownership or responsibility for stormwater runoff, the Owner/Operator (permittee) must notify the new Owner in writing of the requirement to obtain permit coverage by submitting a new Notice of Intent. Once the new Owner obtains permit coverage, the Owner/Operator shall

¹ “Qualified Inspector” includes persons knowledgeable in the principles and practices of erosion and sediment controls, such as a licensed professional engineer, certified professional in erosion and sediment control (CPESC), registered landscape architect or other NYSDEC-endorsed professional. It also means someone working under the direct supervision of the licensed professional engineer or licensed landscape architect, provided that person has training in the principles and practices of erosion and sediment control.

² “Commencement of construction” means the initial disturbance of soils associated with clearing, grading, or excavation activities, or other construction activities that disturb or expose soils such as demolition or stockpiling of fill material.

**PRE-CONSTRUCTION REQUIREMENTS:
PRE-CONSTRUCTION MEETING DOCUMENTS AND INSPECTION REPORTS**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

submit a completed NOT with the name and permit identification number of the new Owner. If the Owner/Operator maintains ownership of a portion of the construction activity and will disturb soil, they must obtain their coverage under the general permit. Permit coverage for the new Owner will be effective when an acknowledgement letter is received from the NYSDEC confirming receipt of the completed Notice of Intent (NOI), provided the Owner/Operator was not subject to a sixty business day authorization period that has not expired as of the date the Department receives the NOI from the new Owner.

- Prior to commencing soil disturbance, the Owner/Operator and the Contractors must complete the forms and certifications in this Appendix. This information shall be kept up to date.
- All enclosed certifications shall be completed and each subcontractor shall complete their portion of the certification. Each certification is to be completed and signed by a president, treasurer or vice president, or any person who performs similar policy or decision-making functions, and by the on-site individual having responsibility for the firm and each one of the subcontractors implementing erosion control measures.
- The Contractors need to start corrective measures within one day after notified of inspection.

**PRE-CONSTRUCTION REQUIREMENTS:
PRE-CONSTRUCTION MEETING DOCUMENTS AND INSPECTION REPORTS**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

PRE-CONSTRUCTION SITE ASSESSMENT CHECKLIST

Construction (soil disturbance) shall not commence until all Erosion and Sediment Control Facilities have been installed, inspected, and found acceptable by the Owner/Operator. Add comments below as necessary.

1. NOTICE OF INTENT, SWPPP, AND CONTRACTOR’S CERTIFICATION

- | Yes | No | NA | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has a Notice of Intent been filed with acknowledgement letter received from the NYSDEC? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has MS4 Approval Letter (if needed) been received? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the SWPPP on site? If yes, where? _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the SWPPP current? What is the latest revision date? ____/____/____ |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is a copy of the NOI on site? If yes, where? _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have all the Contractors involved with the stormwater-related activities signed a Contractor’s Certification Statement (Appendix D-3)? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have the Contractors’ Construction Stabilization Schedule (Appendix D-2) been received? |

2. RESOURCE PROTECTION

- | YES | No | NA | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are construction limits clearly flagged or fenced? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have the important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips (especially in perimeter areas) been flagged for protection? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Were creek crossings installed prior to land-disturbing activity? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have wetlands been identified, flagged, and protected? |

3. SURFACE WATER PROTECTION

- | YES | No | NA | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has clean stormwater runoff been diverted from areas to be disturbed? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have bodies of water either on-site or in the vicinity been identified and protected? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have appropriate practices to protect on-site or downstream surface water been installed? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are clearing and grading operations divided into areas <5 acres? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has any grading operation occurred prior to this inspection, except for Erosion & Sediment Control Practice installation? |

**PRE-CONSTRUCTION REQUIREMENTS:
PRE-CONSTRUCTION MEETING DOCUMENTS AND INSPECTION REPORTS**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

4. STABILIZED CONSTRUCTION ACCESS

- | YES | No | NA | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has a temporary construction entrance been installed to capture mud and debris from construction vehicles before they enter the public highway? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Have other access areas (entrances, construction routes, and equipment parking areas) been stabilized immediately as work takes place with gravel or other cover? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is there a plan to remove or clean sediment tracked onto public streets on a regular basis? |

5. PERIMETER SEDIMENT CONTROLS

- | Yes | No | NA | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Do the silt fence and silt barrier material and installation comply with the contract drawing, SWPPP and specifications? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are silt fences and silt barriers installed at appropriate spacing intervals? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Were sediment trapping devices installed as the first land disturbing activity. |

6. POLLUTION PREVENTION FOR WASTE AND HAZARDOUS MATERIALS

- | Yes | No | NA | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Has the Owner and/or Operator or designated representative been assigned to implement the spill prevention avoidance and response approach? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are there appropriate materials to control spills on site? If yes, where? _____ |

Items that need to be addressed prior to Qualified Inspector’s Certification

| | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |

**PRE-CONSTRUCTION REQUIREMENTS:
PRE-CONSTRUCTION MEETING DOCUMENTS AND INSPECTION REPORTS**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

QUALIFIED INSPECTOR'S CREDENTIALS AND CERTIFICATION

I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction.

Signature: _____

Name (please print): _____

Title: _____ **Date:** _____

Company Name: _____

Address: _____

Phone: _____ **E-Mail:** _____

**PRE-CONSTRUCTION REQUIREMENTS:
CONSTRUCTION STABILIZATION SCHEDULE**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

Contractors shall initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased:

- If greater than 5-acre disturbance limit is approved, 7 days from the date the soil disturbance activity ceased
- In no case more than 14 days from the date the soil disturbance activity ceased

When construction activity is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

Contractors are responsible to provide a construction schedule for review and approval by the Owner/ Operator:

| Major Grading Activity | Portion of the Site | Date to Commence | Date To Be Stabilized (Permanently or Temporarily) |
|--|---------------------|------------------|--|
| 1. Erosion and Sediment Control Practices Installation | | | |
| 2. Clearing and Grubbing and Construction Staging | | | |
| 3. Excavation | | | |
| 4. Site Grading | | | |
| 5. Cover Installation | | | |
| 6. Topsoil and Seeding | | | |
| 7. Final Stabilization and Construction Cleanup | | | |

**PRE-CONSTRUCTION REQUIREMENTS:
CONTRACTOR/SUBCONTRACTOR CERTIFICATION STATEMENT**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

(Each Contractor/Subcontractor is required to sign this certification statement prior to working on-site.)

CONTRACTOR INFORMATION

Contractor/Subcontractor: _____

Contractor/Subcontractor Address: _____

Telephone Numbers(s): (Office) _____ **(Trailer)** _____

Contacts:

| | | | |
|----|-------|------------|-------|
| 1) | _____ | (Mobile #) | _____ |
| 2) | _____ | (Mobile #) | _____ |
| 3) | _____ | (Mobile #) | _____ |

Name(s) of Trained Individual(s) from Contractor's/Subcontractor's company that will be responsible for implementing the SWPPP:

Name: _____ **Title:** _____

Name: _____ **Title:** _____

Trained Contractor means an employee from a contracting (construction) firm that has received four hours of training that has been endorsed by the NYSDEC (i.e., Soil and Water Conservation District or other NYSDEC endorsed entity) in proper erosion and sediment control principles. After receiving the initial training, the trained contractor will receive four hours of training every three years. This individual will be responsible for the day to day implementation of the SWPPP.

**PRE-CONSTRUCTION REQUIREMENTS:
CONTRACTOR/SUBCONTRACTOR CERTIFICATION STATEMENT**

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

STORMWATER MEASURES

Contractor/Subcontractor is responsible for implementing/maintaining the following stormwater and erosion control measures:

1. **Contractor's/Subcontractor's Name:** _____
Measures Responsible for:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

2. **Contractor's/Subcontractor's Name:** _____
Measures Responsible for:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

3. **Contractor's/Subcontractor's Name:** _____
Measures Responsible for:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

III. CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the Owner and/or Operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities, and that it is unlawful for any person to cause, or contribute to, a violation of water quality standards. Furthermore, I understand that certifying false, incorrect, or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil, and/or administrative proceedings. I also certify that I have received a copy of the SWPPP and will retain a copy of such SWPPP on-site during construction.

IV. SIGNATURE

Signature

Date

Name (print)

Title

Inspection Reports

FIELD RECORD COPY

INSPECTION REPORT FORM

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

Inspection Location: _____ **Inspection #:** _____
 (portion of the site)

Name of the Inspector: _____ **Date/Time of Inspection:** _____

Weather Conditions: Dry Wet Sunny Rain Cloudy Snow (circle whatever applies)

Soil Condition: Wet Dry Saturated Snow covered

| Project Checklist | Yes | No | N/A |
|---|-----|----|-----|
| Erosion and Sediment Controls: | | | |
| 1. Are silt fences/filter socks in place as shown on the plan and functioning as designed? | | | |
| 2. Are protected areas identified and protected? | | | |
| 3. Are construction entrances stabilized and functioning as designed? | | | |
| 4. Is there any evidence of migration of sediment off site? | | | |
| 5. Is washdown water being directed to an approved sediment practice? | | | |
| 6. Are staged materials surrounded with ESC protection? | | | |
| Stabilization Practices: | | | |
| 7. Have all disturbed portions of the site where earth disturbing activities have ceased and will not resume within 14 days (if 7 days, 5 acres disturbance waiver is granted) been temporarily stabilized by covering with plastic and mulching, or by mulching and seeding? | | | |
| 8. Have all disturbed portions of the site where earth disturbing activities have permanently ceased been stabilized with topsoil, permanent seed, and mulch? | | | |
| Additional Storm Water Controls: | | | |
| 9. Are material storage / handling areas properly stabilized? | | | |
| 10. Are dust control measures (water application, mulching) in place? | | | |

FIELD RECORD COPY

INSPECTION REPORT FORM

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo **County:** Erie

NYSDEC Date of Authorization: _____

| List Disturbed Areas | Currently Disturbed | | Temp. Stabilized | | Perm. Stabilized | |
|----------------------|---------------------|----|------------------|----|------------------|----|
| | Yes | No | Yes | No | Yes | No |
| 1. | | | | | | |
| 2. | | | | | | |
| 3. | | | | | | |

| Condition of Runoff leaving the Site | | | | | | |
|--------------------------------------|------------|---|---|---|---|-----|
| 1. | Location – | 1 | 2 | 3 | 4 | 5 6 |
| 2. | Location – | 1 | 2 | 3 | 4 | 5 6 |
| 3. | Location – | 1 | 2 | 3 | 4 | 5 6 |
| 4. | Location – | 1 | 2 | 3 | 4 | 5 6 |

Legend:

| | |
|------------------------------------|--|
| 1. Eroded areas need to be fixed. | 4. Stabilized and functioning as designed. |
| 2. Silt needs to be removed. | 5. Turbid water present. |
| 3. Operational – no current issues | 6. Additional erosion control needed. |

| Additional Requirements |
|-------------------------|
| 1. |
| 2. |
| 3. |
| 4. |

FIELD RECORD COPY

INSPECTION REPORT FORM

Project Name: 1318 Niagara Street Interim Remedial Measure

Site Location: City of Buffalo County: Erie

NYSDEC Date of Authorization: _____

Work performed since last inspection and effectiveness of corrective actions: _____

Comments on general site conditions: _____

Remarks/Recommendations of corrective measures needed* (attach map and photographs [with date stamping] – show corrective actions needed and areas where corrective actions have been completed since the last inspection): _____

*Please make a distinction between deficiencies to the SWPPP and normal maintenance items.

PLEASE SEE ATTACHED MAP FOR LOCATIONS AND PHOTOGRAPHS

WEEKLY INSPECTION REPORTS SHALL BE PROVIDED TO SWPPP CONTRACTOR WITHIN ONE BUSINESS DAY AFTER INSPECTION COMPLETION.

- Site in compliance with SWPPP
- Site not in compliance with SWPPP and corrective measures are required by Contractor

Inspector: _____ Date: _____
(Signature of Qualified Inspector)

Responsible Professional (if applicable): _____

**SPDES General Permit
Notice of Termination**

**New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505**

(NOTE: Submit completed form to address above)

**NOTICE OF TERMINATION for Storm Water Discharges Authorized
under the SPDES General Permit for Construction Activity**

Please indicate your permit identification number: NYR _____

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. *Date final stabilization completed (month/year): _____

9b. Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR _____
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? yes no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? yes no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued**

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? yes no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.
- For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____
(acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? yes
 no
(If Yes, complete section VI - "MS4 Acceptance" statement)

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued**

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

(NYS DEC Notice of Termination - January 2015)

**NYSOPRHP
Documentation**



Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

June 19, 2019

Ms. Abby Kondratowicz
Scientist 2
OBG, part of Ramboll
333 West Washington St
Syracuse, NY 13221

Re: DEC
1318 Niagara Street Site #E915213 Remedial Design
Buffalo, NY
19PR03520

Dear Ms. Kondratowicz:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

The property at 1318 Niagara Street is located next to the Upper Black Rock Historic District, which is eligible for listing in the State and National Register of Historic Places. Since this property is next to an historic district, we have reviewed the proposed soil remediation project as described in the provided scope of work and drawings dated May 2019. Our Archaeology Unit has no archaeological concerns. Based upon our review, it is the OPRHP's opinion that the proposed project will have No Adverse Impact on historic resources.

If you have any questions, I can be reached at (518) 268-2187.

Sincerely,

Derek Rohde
Historic Site Restoration Coordinator
e-mail: derek.rohde@parks.ny.gov

via e-mail only

cc: A. Kondratowicz, S. Mooney

Division for Historic Preservation

P.O. Box 189, Waterford, New York 12188-0189 • (518) 237-8643 • parks.ny.gov



**Design Drawings
(bound separately)**



**MS4 Acceptance
Form**



**Department of
Environmental
Conservation**

**NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505**

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance
Form**

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name: City of Buffalo
2. Contact Person: Hope Young-Watkins
3. Street Address: 905 City Hall
4. City/State/Zip: Buffalo, NY 14202

II. Project Site Information

5. Project/Site Name: 1318 Niagara Street Site
6. Street Address: 1318 Niagara Street
7. City/State/Zip: Buffalo, NY 14202

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by: Regina L. Harris
9. Title/Position: Assistant Sanitary Engineer
10. Date Final SWPPP Reviewed and Accepted: 09/27/2019

IV. Regulated MS4 Information

11. Name of MS4: Buffalo Sewer Authority
12. MS4 SPDES Permit Identification Number: NYR20A 461
13. Contact Person: Rosaleen B. Nogle, P.E.
14. Street Address: 90 W. Ferry St. (Foot of Ferry)
15. City/State/Zip: Buffalo, NY 14213
16. Telephone Number: 716-851-4664 ext. 5202

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: Catherine H. Knab, P.E.

Title/Position: Principal Sanitary Engineer

Signature: *Catherine H. Knab*

Date: 9/27/19

VI. Additional Information



Appendix I
Construction Quality
Assurance Plan

PLAN

1318 NIAGARA STREET INTERIM REMEDIAL MEASURE CONSTRUCTION QUALITY ASSURANCE PLAN



September 2019



TABLE OF CONTENTS

| | |
|--------------------------------------|---|
| 1. Introduction | 1 |
| 2. Documentation Requirements | 1 |
| 3. Erosion And Sediment Control..... | 2 |
| 4. Importing Soil Materials | 2 |
| 5. Compaction..... | 2 |
| 6. Sampling and Analysis..... | 2 |
| 7. Restoration | 2 |
| 8. Decontamination..... | 3 |

1. INTRODUCTION

This Construction Quality Assurance Plan (CQAP) will be implemented to monitor that remedial and construction procedures are performed in compliance with the plans and specifications under this interim remedial measure (IRM) for the 1318 Niagara Street site (Site) in Buffalo, NY. The quality control measures as presented herein will include construction procedures; staffing; types of material and equipment to be used; and methods of performing, documenting, and enforcing quality control operations of both the prime contractor and subcontractors (including inspection and testing).

Maintenance of the CQAP will be the responsibility of GES's Project Manager. GES will be responsible for ensuring that all materials and work comply with the contract specifications. All inspection and testing firms will be at the disposal of GES to ensure that all aspects of work are compliant with the contract.

GES's project staff will include the following personnel:

- Project Manager – Thomas Palmer
- Construction Superintendent – Brandon Mikolin
- Health and Safety Officer – Mark Lancaster

This CQAP describes the materials, procedures, and testing necessary for construction, evaluation, and documentation during remedial construction activities. The remedial construction activities include the following:

- Mobilization
- Site Preparation
- Excavation of on-site and off-site soil to address PCB-related impacts
- Transportation of excavated material off-site for treatment and/or disposal
- Restoration of sediment removal areas with clean imported fill
- Demobilization

2. DOCUMENTATION REQUIREMENTS

The documentation of Construction Quality Assurance (CQA) activities will support a determination of whether construction activities have been carried out in general accordance with the approved Remedial Action Work Plan. GES's Construction Superintendent will complete a daily construction report summarizing each day's construction activities. The daily construction report will contain, at a minimum, the following information:

- Date, project name, location, and phone number and names of people on-site
- Time of the day that the work starts and ends, in addition to the duration of work stoppages related to inclement weather, insufficient equipment or personnel, or other reasons
- Health and safety topics discussed and description of any health and safety incidents or near misses
- Workforce, equipment, and materials delivered to or removed from the work area
- Chronological description of work in progress
- Results of testing and inspections performed on-site by the CQA team
- Problem and/or deficiency identification and documentation describing correction actions taken for field problems and nonconformance with this CQAP
- List of laboratory samples collected, marked and delivered to the CQA laboratory and references to the test data submitted by the CQA laboratory

- Record of communications with other on-site parties, outside companies, regulatory agencies, or consultants regarding the day's construction activities
- Erosion and sediment control inspection results, including date and time of inspection, a description of the weather and soil conditions at the time of inspection, a description of the condition of the run-off at all points of discharge from the construction site and identification of all erosion and sediment control measures that need repair or maintenance and/or are not functioning as designed and need corrective action(s)
- Documentation of problems and/or deficiencies noted during construction (*e.g.*, when construction material or activity is observed or tested that does not meet the requirements set forth in the approved remedial design), and the corrective action employed to address the problems or deficiencies
- Photographic documentation of construction progress

3. EROSION AND SEDIMENT CONTROL

GES will install silt barriers to help minimize erosion of sediments off the 1318 Niagara Street property. GES will verify that materials utilized are approved and on-site prior to any excavation taking place. As part of the initial planning inspection activities, GES will verify that the materials are being placed per the specifications and that the installation is correct and effective. Throughout the duration of the project, GES's construction inspectors will check the site for compliance with erosion control measures weekly accordance with the approved *Stormwater Pollution Prevention Plan (Appendix H)*. At the conclusion of the construction, GES will perform a final inspection to ensure that all silt barriers have been removed.

4. IMPORTING SOIL MATERIALS

GES will identify material sources and conduct all geotechnical testing and submit results to OBG for approval. GES will be responsible for ensuring that all materials for general fill and topsoil are approved by OBG prior to receiving the materials on-site. Imported fill analytical testing shall comply with DER-10. Material will come from the following sources:

- Common Fill: to be determined¹
- Topsoil: to be determined¹

5. COMPACTION

After the excavations are completed and post-excavation sampling has been performed, GES will import the approved backfill materials and then place the soil with a dozer in maximum 12-inch lifts. GES will use the dozer to track the backfill material two to three times as required to yield a firm base. GES will perform density testing to demonstrate that two to three passes is sufficient to achieve compaction to 85% modified proctor maximum density.

6. SAMPLING AND ANALYSIS

Confirmation and documentation sampling will be performed as described in Sections 3 and 4 – Soil Sampling and Analysis Procedures of the *Sampling and Analysis Plan* (OBG 2019).

7. RESTORATION

Restoration shall be conducted in accordance with OBG's Contract Specification Section 32 93 13.

¹ Samples from two sources are currently being analyzed.

8. DECONTAMINATION

GES will ensure that outside surface and tires of vehicles use to transport excavated materials have been decontaminated to a result 10 ppm or less total polychlorinated biphenyls to preventing tracking impacted material onto Niagara Street.



Exhibits



Exhibit 1
Health and Safety Plan
(HASP)



**GROUNDWATER & ENVIRONMENTAL SERVICES, INC.
SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR**

NYSDEC

1318 Niagara Street

1318 Niagara St, Buffalo, NY 14213

ANNUAL UPDATE COMPLETED ON (DATE): Initial 09/26/2019

EMERGENCY PHONE NUMBERS:

Local Police 911
 Local Fire 911
 Local Rescue 911

Local Hospital Name, Phone Number & Address (Map and directions are attached):

| | |
|------------------|--------------------------------|
| Hospital Name | Buffalo General Medical Center |
| Street Address | 100 High St |
| City, State, Zip | Buffalo, NY 14203 |
| Phone Number | (716) 859-5600 |

National Response Center (NRC): 1-800-424-8802

The NRC should be contacted in the event of a significant chemical release. Once notified, the NRC will activate a federal response to the spill. *Please confirm with the client and project manager to determine if the spill should be reported.*

Poison Control Center: 1-800-222-1222

The Poison Control Center should be contacted in the event of accidental poisoning. They will provide information on immediate treatment for the poisoning.

Project Contact Information:

| Role | Name | Phone Number | Cell Phone Number |
|---|---------------|--------------------|-------------------|
| Site Supervisor | GES Personnel | | |
| Project Manager | Tom Palmer | 800-287-7857 x4346 | 716-866-3590 |
| Vice President of Corporate Health and Safety | Tom Baylis | 800-287-7857 x3021 | 610-587-1124 |
| Client Representative | Heidi Dudek | 518-402-9813 | |

**DO NOT TRANSPORT SERIOUSLY INJURED PERSONNEL TO THE HOSPITAL
CALL 911**

HOSPITAL ROUTE MAPS

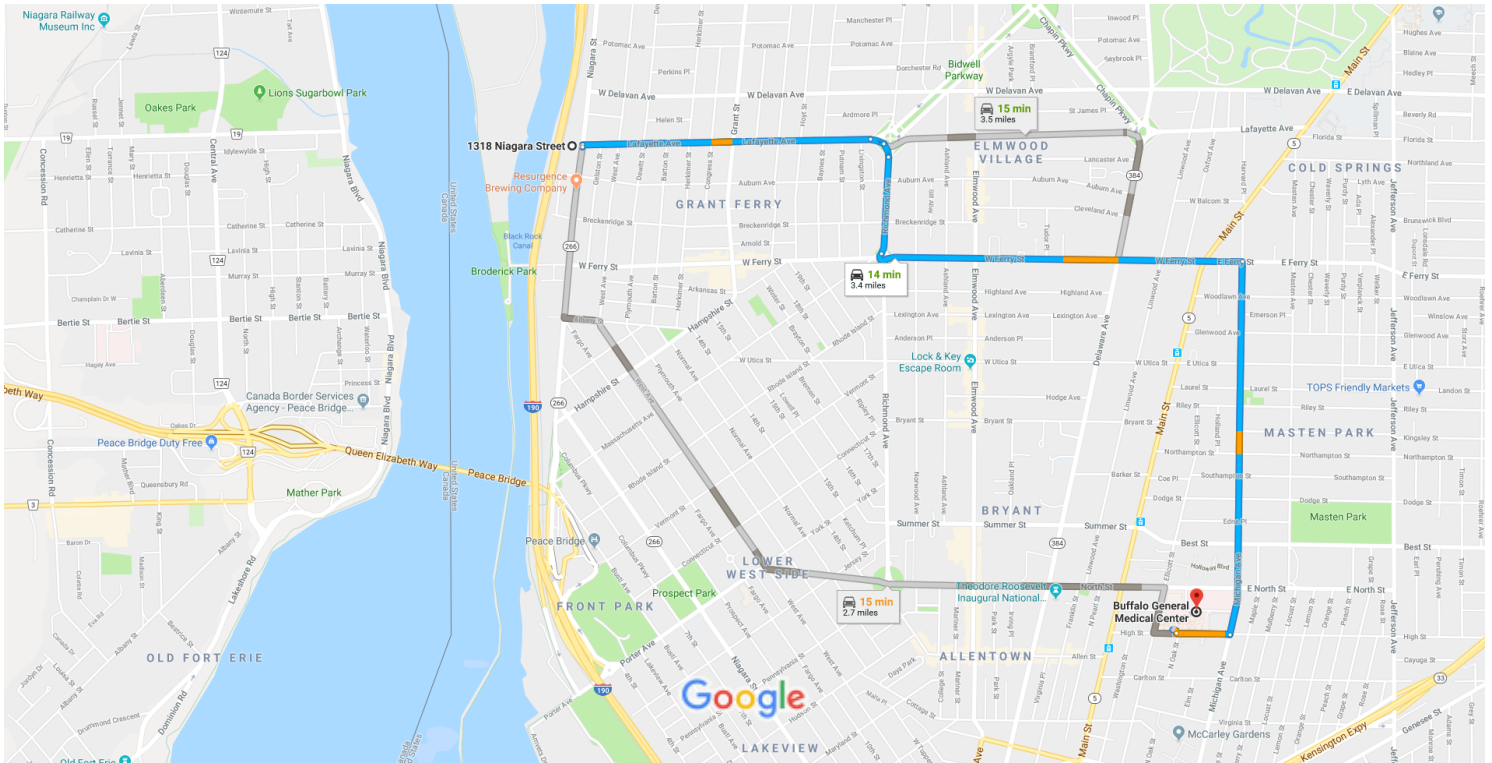
AND

LOCAL GES OFFICE CLINIC MAPS



1318 Niagara St, Buffalo, NY 14213 to Buffalo General Medical Center

Drive 3.4 miles, 14 min



Map data ©2018 Google 1000 ft

1318 Niagara St

Buffalo, NY 14213

Take Lafayette Ave and W Ferry St to Michigan Ave

- ↑ 1. Head north on Niagara St toward Lafayette Ave 9 min (2.2 mi)

- ↘ 2. Turn right onto Lafayette Ave 30 ft

- ↑ 3. Continue onto Colonial Cir 0.8 mi

- 📍 4. At the traffic circle, take the 1st exit and stay on Colonial Cir 210 ft

- ↑ 5. Continue onto Richmond Ave 220 ft


- 📍 6. At the traffic circle, take the 3rd exit onto W Ferry St 0.3 mi

- ↑ 7. Continue onto Michigan Ave 1.0 mi


Continue on Michigan Ave to your destination

- ↘ 7. Turn right onto Michigan Ave 5 min (1.2 mi)

- ↑ 8. Continue onto Michigan Ave 1.0 mi

 8. Turn right onto High St

0.1 mi

 9. Turn right

89 ft

Buffalo General Medical Center

100 High St, Buffalo, NY 14203

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

1.0 INTRODUCTION

1.1 APPROVALS

| | Name | Title | Date | Signature |
|----------------------------------|----------------|-----------------|-----------|---|
| Prepared By | Jennifer Clay | Staff Geologist | 9/26/2019 | APPROVED By Jennifer Clay at 2:39 pm, Sep 26, 2019 |
| Reviewed By (Project Manager) | Tom Palmer | Project Manager | 9/27/2019 | APPROVED By Thomas Palmer at 7:54 pm, Sep 26, 2019 |
| Approved By | Mark Lancaster | RHSM | 9/27/2019 | APPROVED By Mark Lancaster at 7:58 am, Sep 27, 2019 |

1.2 SITE BACKGROUND

| | |
|------------------------|--|
| Project Name | 1318 Niagara Street |
| Site Address | 1318 Niagara Streed, Buffalo, NY 14213 |
| Nearest Intersection | Niagara St and Lafayette Ave |
| Township/Municipality | City of Buffalo |
| County | Erie |
| Additional Information | Empty Lot |

1.3 SCOPE OF WORK

Task 1 – Excavation/Soil Removal

Task 2 – Waste Disposal

Task 3 – Site Restoration

Task 4 —

Task 5 –

Task 6 –

Task 7 –

Task 8 –

Task 9 –

Task 10 –

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

| Responsibility | Name | Task Description |
|--|----------------|--|
| Project Manager | Tom Palmer | Oversee and coordinate all budget and technical aspects for the project |
| Regional Health & Safety Manager/Officer | Mark Lancaster | Coordinate all health and safety operations for the project site |
| Site Supervisor | GES Personnel | Oversee and coordinate all health and safety aspects from the project site |

ACCIDENT / INCIDENT MEDICAL SURVEILLANCE

As a follow-up to a work-related injury, all employees are entitled and encouraged to seek medical attention. All accidents and potential exposures must be reported **immediately** to the office leadership and / or RHSSE, who will coordinate with CHSSE to arrange for appropriate medical attention. Depending on the type of incident, it may be critical to perform tests within 24 to 48 hours. *Failure to report an injury or incident immediately will result in disciplinary action.* The *GES Incident/Injury Case Management Procedure* can be found in **Attachment I**.

Events surrounding Near Loss incidents will be recorded in the daily log and documented in accordance with the GES Incident Reporting Procedures.

3.0 HAZARD ASSESSMENT

Job Loss Analyses (JLAs) are required for most site activities. Each JLA must identify and quantify the health and safety hazards associated with each task and site operation, and to evaluate risks to workers. Using this information, appropriate control methods are selected to mitigate or (preferably) eliminate the identified risks.

Site Security

- Do not permit anyone who is not properly trained and outfitted with the appropriate PPE to enter the Exclusion or Contamination Reduction Zones (this includes GES personnel, clients, etc.)
- Use caution tape or barricade fencing where warranted to keep unauthorized personnel from entering the work area.
- On sites where it is believed that security is an issue, two employees will be used for all field work. The “buddy-system” will be in place and the two employees will be in constant communication and within each other’s line of sight. There will be a cellular phone available to call 911 if a violent condition presents itself.
- When acts of violence occur or when an employee(s) feels that they are being placed in a threatening position they must immediately leave the site.
- All potential acts of violence or threats by non-GES personnel must be immediately reported to the Office leadership and / or Project Manager and Regional HSSE. The situation will be discussed to determine future action on the site in question.
- If any GES employee notices suspicious persons or activities in a GES office or in the vicinity of a work area, he or she should immediately report the observation to his or her supervisor or Regional Operations Manager.

FIRE/EXPLOSION

If a fire is observed in the incipient phase (i.e., when it begins) and if the site personnel witnessing the fire feel secure in attempting to control the fire, the individual can attempt to extinguish the fire by using the onsite fire extinguisher. The fire extinguisher should be a 10 or 20 pound (lb.) dry chemical, Class A, B, and C extinguisher and is adequate for paper and wood based products (A), flammable and combustible liquids (B), and electrical (C) type fires.

If there is no fire extinguisher available or if site personnel do not feel secure in attempting to extinguish the fire, site personnel shall perform the following:

- Secure the site, if possible.
- Evacuate the area using the nearest safe pathway from the area.
- Proceed to the nearest phone and call 911 and provide the emergency operator all required information. This will activate the emergency response system.

If more than one individual is on the site team, the individual activating the evacuation plan shall verbally communicate to the other site personnel that there is an emergency condition and that they should evacuate from the work area. If contact cannot be made verbally with the other site personnel, any of the following systems can be used as long as the system is audible above background noise. The system can be the site vehicle horn, a whistle, an air horn, or other acceptable device. The system used for initiating an evacuation from the site shall be discussed during the tailgate meeting with the other site personnel prior to beginning the workday. The system that is decided upon shall be documented in the site logbook.

If an explosion or other unsafe condition occurs that the site supervisor had determined will place the other site personnel at risk, then the evacuation system described above should be activated immediately.

GES WORK PERMITS

Work permits will be required for Confined Space Entry, Hot Work and Lockout/Tag out as well as any Federal and client permitted activity. These permits must be obtained from the Project Manager or RHSSE prior to site work.

GENERAL SITE RULES

The following general site rules apply to all personnel while on the site:

- Before daily site operations begin, the daily site safety checklist will be completed, the subcontractor's training documentation will be reviewed (as required by section 3 of this plan), and a pre-entry briefing will be held to review the site's health and safety plan concerns and emergency procedures. This meeting will be registered in this Health and Safety Plan. Attendance will be documented.
- One site worker will be assigned to keep the daily log for all health and safety-specific site activities, unless otherwise specified.

- All personnel will wear steel-toe safety boots. Hard hats will be worn when working near heavy equipment (drill rigs, excavating equipment, etc.), when individuals are working with overhead hazards present, when required in the Job Loss Analysis (JLA), or when required by the client.
- Eye protection and high visibility clothing/reflective safety vests will be donned at all times while on site.
- Possession of alcohol or illegal substances on the job site or consumption during hours of site operations is strictly prohibited.
- Food and/or beverages are not permitted in the site's Exclusion or Contamination Reduction Zones. Food and/or beverages will be permitted in the Support Zone, if proper decontamination procedures are being followed.
- Smoking, including the use of e-cigarettes, is not permitted on any site. Chewing tobacco, snuff, application of cosmetics and/or lip balm is not permitted in the site's Exclusion or Contamination Reduction Zones.
- A change in level of protection will be based on air monitoring equipment readings taken in the breathing zone.
- Field personnel will use air monitoring equipment and not their nose to determine site contamination (i.e., sniffing sampled soils or water in jars, confined spaces, open bore holes or trenches, etc.). Odors detected during the course of standard operating procedures, however, should be noted in the daily log.
- Field personnel should not stand with their head directly over a well when it is being opened.
- First Aid Kit(s) and Fire Extinguisher(s) will be available in all company vehicles and/or within 50 feet of the working area.

Note: Hot work activities require that a person onsite shall act as a fire watch with a Class A, B, C dry chemical extinguisher within 10 feet of the activity, and all necessary work requirements are satisfied.

Any revisions to the final Site-Specific Health and Safety Plan must be reviewed by the Project/Case Manager and approved by RHSSE or a Principal Hydrogeologist, at a minimum.

ATTACHMENT A

SITE MAPS

REV-1
400-29-426 1318 Niagara Street Phase 2 Exchng. 4/29/2013 10:16:54 AM AMK



RAILROAD

BUILDING

BUILDING

CONCRETE PAD

MW-01

MW-03

MW-02

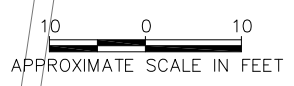
MW-04

MW-05

BRICK WALL

BUILDING

NIAGARA STREET



LEGEND

● MONITORING WELL

--- FORMER FOUNDATION WALL STILL PRESENT

NA NOT APPLICABLE

WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| NO. | DATE | DESCRIPTION |
|-----------|------|-------------|
| REVISIONS | | |



| | |
|--------------|------------------|
| PROJ. ENG.: | CLIENT: |
| DESIGNED BY: | |
| CHECKED BY: | |
| DRAWN BY: | DATE: APRIL 2013 |
| | SCALE: AS SHOWN |

| | |
|--|----------------------------|
| JOB TITLE AND LOCATION: CITY OF BUFFALO - ERP INVESTIGATION OF 1318 NIAGARA STREET | LIRO JOB NO.: 09-29-426 |
| DRAWING TITLE: IRM-2 EXCAVATION AREAS AND LIMITS | SHEET OF |
| | FIGURE NO. 5 |

ATTACHMENT B

EXPOSURE MONITORING PROGRAM FOR THE CONTAMINANTS OF CONCERN

EXPOSURE MONITORING PROGRAM

REAL-TIME MONITORING

Photo-ionization Detector (PID): Real-time monitoring for volatile organic compounds (VOCs) will be conducted using a photo-ionization detector (PID). The PID will be used to monitor employee breathing zones during all invasive activities. **Table 1** lists PID action levels and response requirements

Combustible Gas Indicator/Oxygen Level Meter: Real-time monitoring for combustible gases and oxygen levels will be conducted using a Combustible Gas Indicator (CGI)/Oxygen Level Meter. The CGI will test for the presence of combustible gases by continuously monitoring the lower explosive limit (LEL) of organic vapors. The CGI will be used to monitor the LEL prior to, and during, Confined Space (CS) entries and during work near an excavation in contaminated soil. The Oxygen Level Meter will detect an oxygen-deficient or oxygen-enriched atmosphere, and will be used prior to, and during, all CS entry activities. If ionizing radiation is suspected at a site, a Geiger counter will be used to measure exposure under guidance of a Health Physicist. **Table 2** lists CGI, Oxygen Level Meter, and ionizing radiation action levels and response requirements.

Depending on the Contaminants of Concern, other forms of real-time monitoring equipment may be required to quantify chemical hazards and protect workers from exposure. These may include, but are not limited to bio-aerosol monitors, detector tubes, dust monitors, FROG meters, etc.

- Calibration of Real-Time Monitoring Equipment: Monitoring and calibration protocols will be performed in accordance with the manufacturer's guidelines. Calibration will be performed, at a minimum, prior to each day's use.
- Calibration logs will be maintained by the field personnel performing the calibrations.

ACTION LEVELS

Tables 1 and 2 list the action levels and response requirements for a PID and CGI/Oxygen Level Meter. Changing levels of protection, upgrading respiratory protection, or changing work practices is based on maintaining the upper limit of the action level for approximately **10 minutes** sustained in the breathing zone (i.e., a non-transient reading) or at the discretion of the Site Supervisor. If changes in protection levels are required, the Site Supervisor will, stop the job, notify the Project Manager who will contact Regional Engineering and CHSSE to determine if administrative or engineering controls can be implemented to mitigate or eliminate the hazard.

Table 1 provides action levels that must be complied with when petroleum products such as gasoline are the known site contaminants.

Tables 4 & 5 provide space to document site-specific action levels, should the site contain other potential site contaminants. Action levels must be determined by consultation with/approval by CHSSE, based on established chemical exposure limits and monitoring instrument response factors.

**TABLE 1
OVM ACTION LEVELS**

| Meter Response (Breathing Zone) | Action Required |
|---|--|
| PID response <5 units above background | No respiratory protection required (i.e., Level D) |
| PID response >5 units above background (Bkgd.) and < 50 units above Bkgd. | Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, half- face respiratory protection. |
| PID response >50 units and < 250 units above Bkgd. | Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, full- face respiratory protection. |
| PID response > 250 above Bkgd. | Retreat from site ^{1,2} |

¹ If a retreat becomes necessary, CHSSE or Regional Engineering will be consulted in regard to adding mechanical ventilation or possible changes in work practices. Work will not resume until appropriate corrective measures are implemented.

² Because direct reading instruments cannot indicate or are not compound specific, concentrations shown on the instruments shall be related to units above background and not parts per million (ppm).

TABLE 2
CGI/O₂/RADIATION LEVEL ACTION LEVELS

| Meter Response | Action |
|-----------------------------------|---|
| CGI response < 10 % LEL | Continue normal operations. |
| CGI response > 10 % and <20 % LEL | Eliminate all sources of ignition from the work area; implement continuous monitoring. However if work is being done in a confined space, retreat from work area. ¹ |
| CGI response > 20 % LEL | Discontinue operations; allow to vent; retreat from work area. ¹ |
| | |
| Oxygen level < 19.5% | Retreat from work area. ¹ |
| Oxygen level > 23.5% | Retreat from work area. ¹ |
| | |
| 3X background to <2 mR/hr. | Radiation above background levels (normally 0.01-0.02 mR/hr.) signifies possible source(s) radiation present. Continue investigation with caution. Perform thorough monitoring. Consult with a health physicist. |
| >2mR/hr. | Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of a health physicist |

¹ If a retreat becomes necessary, CHSSE or Regional Engineering will be consulted in regard to adding mechanical ventilation or possible changes in work practices. Work will not resume until appropriate corrective measures are implemented.

| TABLE 3 Retail Petroleum Materials of Concern | | | | | |
|--|-----------------------|------------------------|------------------|---------------------|-----------|
| Contaminant | OSHA TWA (ppm) | ACGIH TLV (ppm) | Hazards | Entry Routes | IP |
| Benzene | 1 | 10 | 1,2,4,5,6,9 | Inh, Abs, Ing, Con | 9.24 |
| Xylene | 100 | 100 | 1,2,3,4,5,6,7,10 | Inh, Abs, Ing, Con | 8.56 |
| Ethylbenzene | 100 | 100 | 1,2,3,10 | Inh, Ing, Con | 8.76 |
| Toluene | 200 | 50 | 1,2,3,4,5,7,10 | Inh, Abs, Ing, Con | 8.82 |

TWA = Time Weighted Average in parts per million (ppm)
 C = Ceiling
 IP = Ionization Potential

| | |
|--|---------------------------------------|
| 1 = irritant to skin | 6 = may cause nausea and vomiting |
| 2 = irritant to eyes | 7 = may cause liver and kidney damage |
| 3 = irritant to respiratory system | 8 = irritant to GI tract |
| 4 = may cause headache | 9 = carcinogen/possible carcinogen |
| 5 = may cause dizziness, lightheadedness | 10 = may cause damage to CNS |

| TABLE 4 Inorganic Gases and Vapors of Concern | | | | | |
|--|-----------------------|------------------------|----------------|---------------------|-----------|
| Contaminant | OSHA TWA (ppm) | ACGIH TLV (ppm) | Hazards | Entry Routes | IP |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

TWA = Time Weighted Average in parts per million (ppm)
 C = Ceiling
 IP = Ionization Potential

| | |
|--|---------------------------------------|
| 1 = irritant to skin | 6 = may cause nausea and vomiting |
| 2 = irritant to eyes | 7 = may cause liver and kidney damage |
| 3 = irritant to respiratory system | 8 = irritant to GI tract |
| 4 = may cause headache | 9 = carcinogen/possible carcinogen |
| 5 = may cause dizziness, lightheadedness | 10 = may cause damage to CNS |

Note: Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. These Action Levels, if not defined by regulation, is some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

TABLE 5
***Site Specific hazards (chemicals) of Concern**

| Contaminant | OSHA TWA (ppm) | ACGIH TLV (ppm) | Hazards | Entry Routes | IP |
|----------------------------------|-----------------------|------------------------|----------------|---------------------|-----------|
| Polychlorinated Biphenyls (PCBs) | 0.5 mg/m ³ | 0.5 mg/m ³ | 1,2,7,9 | Inh,Abs,Ing,Cont | ? |
| | | | | | |
| | | | | | |
| | | | | | |

TWA = Time Weighted Average in parts per million (ppm)

C = Ceiling

IP = Ionization Potential

1 = irritant to skin

2 = irritant to eyes

3 = irritant to respiratory system

4 = may cause headache

5 = may cause dizziness, lightheadedness

6 = may cause nausea and vomiting

7 = may cause liver and kidney damage

8 = irritant to GI tract

9 = carcinogen/possible carcinogen

10 = may cause damage to CNS

Note: Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. These Action Levels, if not defined by regulation, is some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

ATTACHMENT C

SITE SAFETY DATA SHEETS (SDS)

SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 17, 2017

Revision Date: Aug 17, 2017

1. Identification

1.1 GHS Product identifier

Product name CLOPHEN A 30 : A 60 1 : 1

1.2 Other means of identification

Product number -

Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For industry use only. Dioxins, Furans, PCBs (contain phenyl rings of carbon atoms), Pesticides (chemicals used for killing pests, such as rodents, insects, or plants)

Uses advised against no data available

1.4 Supplier's details

Company XiXisys.com

Address XiXisys.com

Telephone XiXisys.com

Fax XiXisys.com

1.5 Emergency phone number

Emergency phone number -

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2. Hazard identification

2.1 Classification of the substance or mixture

Specific target organ toxicity \u2013 repeated exposure, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H373 May cause damage to organs through prolonged or repeated exposure

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

Response

P314 Get medical advice/attention if you feel unwell.

P391 Collect spillage.

Storage

none

Disposal

P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3. Composition/information on ingredients

3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---------------------------|---------------------------|------------|-----------|---------------|
| CLOPHEN A 30 : A 60 1 : 1 | CLOPHEN A 30 : A 60 1 : 1 | 1336-36-3 | none | 100% |

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of immediate medical attention and special treatment needed, if necessary

If PCB-containing substances have been ingested recently, gastric decontamination may be reasonable. Activated charcoal has not been proven beneficial, but is not contraindicated.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide, or alcohol foam extinguishers. Vapors are heavier than air and will collect in low areas. Vapors in confined areas may explode when exposed to fire. Containers may explode in fire. Storage containers and parts of containers may rocket great distances, in many directions. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors, or shows any signs of deforming), withdraw immediately to a secure position ... The only respirators recommended for fire fighting are self-contained breathing apparatuses that have full facepieces and are operated in a pressure-demand or other positive pressure mode.

5.2 Specific hazards arising from the chemical

no data available

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

... Dry sand or earth should be spread on the leak, or spill area. ...

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

PCB material should be stored in closed containers, in ventilated areas ... PCB's should be handled in isolated areas of the plant, where efficient ventilation systems remove airborne PCB's. ...

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

NIOSH considers chlorodiphenyl containing 54% chlorine to be a potential occupational carcinogen. /Aroclor 1254/

NIOSH usually recommends that occupational exposures to carcinogens be limited to the lowest feasible concn. /Aroclor 1254/

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 0.001 mg/cu m. /Aroclor 1254/

NIOSH considers chlorodiphenyl containing 54% chlorine to be a potential occupational carcinogen. /Aroclor 1254/

NIOSH usually recommends that occupational exposures to carcinogens be limited to the lowest feasible concentration. /Aroclor 1254/

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 0.001 mg/cu m. /Aroclor 1254/

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties

| | |
|---|---|
| Physical state | no data available |
| Colour | Vary from mobile oily liquids to white crystalline solids and hard noncrystalline resins. |
| Odour | Practically odorless; mild aromatic odor |
| Melting point/ freezing point | no data available |
| Boiling point or initial boiling point and boiling range | 340\uff5e375 |
| Flammability | no data available |
| Lower and upper explosion limit / flammability limit | no data available |
| Flash point | 195(O.C) |
| Auto-ignition temperature | no data available |
| Decomposition temperature | no data available |
| pH | no data available |
| Kinematic viscosity | no data available |
| Solubility | Solubility in water is extremely low; soluble in oils and organic solvents. |

Partition coefficient n-octanol/water (log value) ... literature Kow values will vary. These increase with increasing chlorination. log Kow values at 25°C: 3.76 (biphenyl); 5.7 (Cl4-PCB's); 6.0 (Cl5-PCB's); 7.0 (Cl6-PCB's); 8.26 (Cl10-PCB's).

Vapour pressure 2.04E-07mmHg at 25°C

Density and/or relative density 1.44(30°C)

Relative vapour density no data available

Particle characteristics no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

... PCB's are chemically very inert and are stable to conditions of hydrolysis and oxidation in industrial use. Photochemical degradation may be one route of their breakdown in the environment. ...

10.3Possibility of hazardous reactions

Flame resistant.

10.4Conditions to avoid

no data available

10.5Incompatible materials

Liquid chlorine reacts exothermically with polychlorinated biphenyl heat transfer liquid. /Polychlorinated biphenyl/

10.6Hazardous decomposition products

When heated to decomposition it emits toxic fumes of Chloride.

11.Toxicological information

Acute toxicity

- Oral: LD50 Mouse (C57B1/6J) male oral 19 mg/kg/28 day
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

EPA: Possibly carcinogenic to humans, IARC: Probably carcinogenic to humans, NTP: Known to be a human carcinogen

Reproductive toxicity

An epidemiological study of women occupationally exposed to high levels of PCBs suggested a relationship between PCB exposure and reduced birth weight and shortened gestational age of their babies; however, limitations of the study limit the strength of the conclusion. Two series of human studies that investigated exposure to PCBs through the consumption of contaminated fish suggest that exposure to PCBs may cause developmental effects in humans. Both studies reported an association between consumption of fish with high PCB levels by pregnant women and an increased incidence of neurodevelopmental effects, such as motor deficits at birth, impaired psychomotor index, impaired visual recognition, and deficits in short-term memory in infants. Human studies are not conclusive on the reproductive effects of PCBs. One study of men who were occupationally exposed to PCBs showed no fertility abnormalities, while another study of men with low sperm counts found elevated levels of PCBs in the blood and an association between certain PCB compounds in semen and decreased sperm motility. Animal studies have reported developmental effects, such as learning deficits, impaired immune functions, focal liver necrosis, and cellular alterations of the thyroid, in the offspring of animals exposed orally to PCBs. Reproductive effects, such as decreased fertility, decreased conception, and prolonged menstruation have also been noted in animal studies of dietary PCB exposures.

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information**12.1 Toxicity**

- Toxicity to fish: no data available

- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: EC50; Species: *Pseudokirchneriella subcapitata* (green algae); Conditions: freshwater, static, 22°C; Concentration: 182 nmol/L for 48 hr; Effect: decreased population biomass />98% pure
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The microbial mineralization of three chlorophenols and a PCB mixture was studied using natural bacterial assemblages in laboratory model systems. The systems consisted of water and surface sediment from two lake types: one with a high content of humic substances and the other with a low content. Final PCB concentration in the model systems was 38 µg/L. Aerobic mineralization of the (14)C-ring-labelled compounds was determined as production of (14)CO₂ in the systems over the course of 60 days. Mineralization of PCBs in the systems was low compared to the aromatics. The breakdown of PCB was 0.047 nM in the humic cultures and 0.052 nM in cultures from the clear water lake. The avg mineralization rates of PCBs over the 60 day test period for the clear-water and humic cultures were 1.1 and 1.2 pM/day. More than 90% of the PCBs adsorbed to the sediment, while <1% was found in the water phase.

12.3 Bioaccumulative potential

Polychlorinated biphenyls (PCBs) are highly lipophilic and bioconcentrate in tissue from concentrations in water ...

12.4 Mobility in soil

PCB mobility in aqueous soil-sediment systems has reported experimental K_{oc} values ranging from 510 to 13,300,000 for a variety of Aroclors and PCB congeners; reported K_{oc} values were mostly above 5000(1). Reviews of the PCB mobility literature have found that adsorption of PCBs to soil and sediment generally increases with an increase in the degree of chlorination(2,3). Organic solvents, found at hazardous waste sites, will also increase the solubility and mobility of PCBs(3). Using soil TLC, column leaching and five different soils, PCBs were found to be generally immobile when leached with water or aqueous landfill leachate, but highly mobile when leached with organic solvents(4). PCB fluids can penetrate and travel through the cracks and other connected void spaces found in soil formations(5). In the presence of organic material dissolved from soil, the water solubility of PCBs increases which may augment its leachability. Environmental releases of PCBs often accompany releases of carrier materials from utility equipment. The PCBs that are present in the mineral oil-PCB mixture become even less water soluble than before. This is due to the PCB partitioning into the mineral oil and the reduced interaction of the PCBs with precipitation or groundwater caused by the hydrophobic nature of the oil matrix. The volatility of PCBs also affects their migration through the soil profile. Researchers have carried out simulations that indicate that PCBs can volatilize beneath the soil surface and potentially migrate through several meters of soil cover(5).

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: UN2315

IMDG: UN2315

IATA: UN2315

14.2 UN Proper Shipping Name

ADR/RID: POLYCHLORINATED BIPHENYLS, LIQUID

IMDG: POLYCHLORINATED BIPHENYLS, LIQUID

IATA: POLYCHLORINATED BIPHENYLS, LIQUID

14.3 Transport hazard class(es)

ADR/RID: unknown

IMDG: unknown

IATA: unknown

14.4 Packing group, if applicable

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|---|---------------------------|------------|-------------|
| CLOPHEN A 30 : A 60 1 : 1 | CLOPHEN A 30 : A 60 1 : 1 | 1336-36-3 | none |
| European Inventory of Existing Commercial Chemical Substances (EINECS) | | | Listed. |
| EC Inventory | | | Listed. |
| United States Toxic Substances Control Act (TSCA) Inventory | | | Listed. |
| China Catalog of Hazardous chemicals 2015 | | | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC) | | | Not Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | | | Listed. |
| Vietnam National Chemical Inventory | | | Not Listed. |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | | | Listed. |

16. Other information

Information on revision

Creation Date Aug 17, 2017

Revision Date Aug 17, 2017

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website:
<http://www.ilo.org/dyn/icsc/showcard.home>

- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

ATTACHMENT D

**JOB LOSS ANALYSES AND
DAILY SITE SAFETY CHECKLISTS**

Job Loss Analysis (JLA)

JLA Title: Excavation Activities

| | | |
|--|--------------------------------|--|
| Date Developed: 2/23/2005 | Revised Date: 1/20/2019 | Revision #: 015 |
| Initial Development Team: Phil Tidd, Tech Services Super / Kara Gioulis, LHSO | | This JLA has been fully reviewed with all staff members and all activity job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on this JLA. |
| Latest Revision by: Kevin Troutman, Construction/field supervisor | | |
| Quality Review by: J. Pachy, LLHSO | | |

REQUIRED PPE: Air Purifying Respirator; Ear Muffs; Ear Plugs; Face Shield; Fire Retardant Clothing; Gloves (Chemical Resistant, Cut Resistant, Leather, Nitrile, Other); Goggles; Hard Hat; Safety Glasses; Safety-toed Boots; Shirt (Highly-Visible Short/Long Sleeve); Tychem Suit; Tyvek Suit; Vest (Highly Visible Reflective Striped); **Other:** Enter other required PPE.

TASK-SPECIFIC TOOLS AND EQUIPMENT: Lockout/tagout kit, PID, LEL meter, Hotwork Permit, Small shovel, Sample jar/container, Spill response kit/spill pad - used under hydraulic equipment when work activities occur on a permeable surface such as grass or gravel

| Activity/Sequence of Job Tasks | Potential Hazards | Risk Control Measures |
|---|---|---|
| A. Mobilization 1. Mobilize to trench/ excavation location, establish work zone for staff and equipment | 1a. Fractures/ contusions to the body or other body parts due to contact with heavy equipment. | 1a. Make sure all operators have seat belts and safety bars in use. <ul style="list-style-type: none"> ➤ All equipment should be inspected prior to use by the operator to ensure all safety devices are working as designed (i.e. back up alarms, kill switches, etc.) ➤ Never stand in equipment path (i.e., within swing radius of counter weight of excavators, backhoe or bucket arm, moving truck, etc.). ➤ Never assume operator can see you. Make eye contact with operator and have "show of hands" to ensure hands are off of the operating switches prior to approaching. Use hand signals that were determined during the tailgate meeting ➤ Ask operator where blind spots are and avoid them. ➤ Always approach equipment from the front where the operator can see you and stop the activities. ➤ Make sure cabs are clean and no loose objects are on the floor that could block control pedals. ➤ Verify that credentials for operators are not expired. ➤ Don high visible sleeved shirt or outerwear, such as high visible traffic vests or clothing. ➤ If working alongside an active roadway, where vehicular traffic is heavy, dawn/dusk hours, or if weather if overcast or rainy, high visible outwear with reflective stripping must be worn. |
| B. Begin Excavating Soil 1. Excavating soil | 1a. Fractures/Contusions to torso due to being caught between moving excavator bucket and tracks/wheels. 1b. Respiratory irritation/inflammation, headache, nausea, dizziness, caused by exposure to hazardous atmosphere. 1c. Explosion/Fire caused | 1a. Non-essential personnel must stay at least a 20 feet radius of center of moving equipment and moving or rotating parts (e.g., excavator bucket, equipment tracks/wheels, vehicle drive shaft, etc.). <ul style="list-style-type: none"> ➤ Essential personnel (spotters, laborers directly involved with the action) must stay at least 5 feet from the bucket and excavator arm when in operation. ➤ Essential personnel should never stand between the excavator bucket and machine base while in operation ➤ Do not stand in an area where you could be caught between the bucket or arm and tracks/wheels. ➤ Determine swing radius/safe operating area of heavy equipment prior to operations. ➤ If an employee must approach the heavy equipment/excavator, make eye contact with the operator and "show hands" so that the operator will take his hands off of the controls and "show hands". DO NOT OPERATE PHONE WHEN OPERATING HEAVY EQUIPMENT. ➤ Ensure that operator points out all blind spots to the spotter if one is to be utilized ➤ Ensure designated spotter understands and complies with responsibilities (communication signals and location to stand) 1b. Monitor work area with PID and comply with HASP action levels. <ul style="list-style-type: none"> ➤ Note: HASP action levels are based on benzene in gasoline; other contaminants will require different actions levels - consult HSSE/CHSSE for guidance. ➤ Eliminate hazardous atmosphere by venting or degassing the area. The measures could include, but not be limited, to using surfactant. ➤ If hazardous atmosphere can't be eliminated with engineering controls, respirator upgrade may be necessary. ➤ Only those enrolled in a Medical Monitoring Program and with a current fit test (w/in past 12 months) may don a respirator. ➤ If respirator upgrade is required, contact PM, RHSSE/CHSSE before proceeding 1c. Eliminate/control ignition sources (i.e. no smoking, no hot work in unapproved/untested areas). <ul style="list-style-type: none"> ➤ Utilize only intrinsically safe/non-spark producing tools in the work area. |

| | | |
|--|--|--|
| | <p>by the ignition of vapors that are between the LEL and UEL, or from sparks produced in an oxygen rich environment.</p> <p>1d.Fractures/Contusions to head/torso as a result of being caught under collapsed soil</p> <p>1e. Hand and arm fractures or contusions as a result of tripping and falling when walking or working on uneven surfaces</p> <p>1f. Fractures or muscular injuries as a result from falls from ladder</p> | <ul style="list-style-type: none"> ➤ Eliminate hazardous atmosphere by venting or degassing the area. ➤ Monitor work area with 4 gas meter to ensure O2 levels range from 19.5 - 23.5. ➤ Never enter a space that is Oxygen Rich or Deficient. ➤ If levels are outside that range, immediately retreat from work area. Monitor with 4 gas meter to ensure levels within the space are below 5% of the LEL of the chemical of concern <p>1d. Access to the trench/excavation shall be restricted if deeper than 4 feet.</p> <ul style="list-style-type: none"> ➤ If work scope requires personnel to enter a trench/excavation greater than 4 feet, specific approval must be obtained from corporate HSSE prior to initiating field activities. ➤ Under NO circumstances will a GES employee and/or sub-contractor be allowed to enter an excavation greater than 4 feet in depth without the prior corporate HSSE approval. <p>1e. Inspect the work area and look for uneven areas that may create a tripping hazard and remove or level out uneven areas.</p> <ul style="list-style-type: none"> ➤ Plan walking path through work area to avoid the uneven areas ➤ Don safety boots with skid / puncture resistant soles that comply with GES requirements <p>1f. Ladders shall be placed in the trench/excavation if the trench/excavation is 4 feet deep. These shall be arranged so that no point in the excavation is greater than 25 feet away from one ladder.</p> <ul style="list-style-type: none"> ➤ Inspect the ladder prior to use ensuring steps are clean to prevent accumulation of materials that might destroy non-slipping properties, and all metal fittings should be carefully checked. ➤ Ladders will be placed on stable surfaces to prevent slipping. ➤ Maintain 3-points of contact when using ladder ➤ Ensure correct ladder (height and material) and utilize a 4:1 pitch ➤ Don safety boots with skid / puncture resistant soles that comply with GES requirements.. |
| <p>C. Working in a Trench/Excavation</p> <p>1. Backfill trench/excavation</p> | <p>1a. Fractures/Contusions to head/torso as a result of being caught under backfill material.</p> <p>1b. Fractures/ contusions to the body or other body parts due to contact with heavy equipment during backfill activities.</p> | <p>1a. Personnel are not permitted in trenches/excavations during the backfill process.</p> <ul style="list-style-type: none"> ➤ Remove all tools and equipment from the trench/excavation prior to replacing soils/pea gravel. <p>1b. Never stand in equipment path (i.e., within swing radius of counter weight of excavators, backhoe or bucket arm, moving truck, etc.).</p> <ul style="list-style-type: none"> ➤ Never assume operator can see you. Make eye contact with operator and have "show of hands" to ensure hands are off of the operating switches prior to approaching. Use hand signals that were determined during the tailgate meeting ➤ Ask operator where blind spots are and avoid them. ➤ Always approach equipment from the front where the operator can see you and stop the activities. |
| <p>On-site edits:</p> | | |

GES DAILY SITE SAFETY CHECKLIST

Site Name: _____ 1318 Niagara St _____
 Address: _____ 1318 Niagara St _____
 _____ Buffalo, NY 14213 _____
 Task, Name, and date of entry: _____ Remedial Excavation & Site Restoration _____

This checklist is to be completed on a daily basis. The date should be noted in the space provided. The employee completing the checklist should verify that each item is correct and initial in the last space provided.

| Date of field work: | | | | | | |
|---|------|------|------|------|------|------|
| 1. Proper training certificates have been obtained from all onsite personnel. | | | | | | |
| 2. The site-specific HASP has been reviewed and signed by GES employees and GES-hired subcontractors. | | | | | | |
| 3. The daily site-safety meeting has been conducted. | | | | | | |
| 4. Applicable JLAs are onsite, reviewed by staff to ensure all tasks/jobs are covered, and site specific JLA modifications occur when needed. | | | | | | |
| 5. Fire extinguishers are available for use and are fully charged. | | | | | | |
| 6. A fully-stocked first aid kit & eye wash bottle is readily available. | | | | | | |
| 7. Any potential tripping hazards have been removed from site. | | | | | | |
| 8. All vessels containing flammable or corrosive material are properly labeled. | | | | | | |
| 9. Proper personal protective equipment is being used for present conditions. | | | | | | |
| 10. Equipment onsite is checked and in safe working order. | | | | | | |
| 11. Safety cones and flags or barricades have been utilized to mark out work area along with all required signage (No Smoking, No Trespassing, Work Area...). | | | | | | |
| 12. No person onsite has the appearance of being under the influence of motor skill altering substances. | | | | | | |
| 13. All workers onsite are clothed in an appropriate manner (highly visible clothing, no tank tops, muscle shirts or shorts). | | | | | | |
| 14. Electrical power-operated tools shall be properly grounded and used with a Ground-Fault Circuit Interrupter (GFCI). | | | | | | |
| 15. All required permits (GES and/or client) are completed by an authorized individual. | | | | | | |
| 16. When working alone, has a phone call been placed to the PM to discuss site conditions, review the Scope of Work, LPS requirements, and coordinate communications for the day? Note: The frequency/ amount of additional calls from the field should be established during the PM's discussion with the individual. A call must always occur prior to leaving the site. (FILL IN OFFICE COMMUNICATION TIME) | TIME | TIME | TIME | TIME | TIME | TIME |
| 17. Prior to leaving the site for the day, the GES site supervisor has conducted a meeting with onsite staff to review worker conditions (possible injuries), JLA revisions, discuss possible Near Losses/ Losses, and activities scheduled for the next day. | | | | | | |
| 18. All health and safety concerns have been communicated to the Regional HSSE Manager/Officer and Project Manager | | | | | | |
| I verify and initial that the above information is correct by initialing in the boxes to the right: | | | | | | |

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ATTACHMENT E

WORK PERMITS

ATTACHMENT F

PRE-ENTRY MEETING NOTES

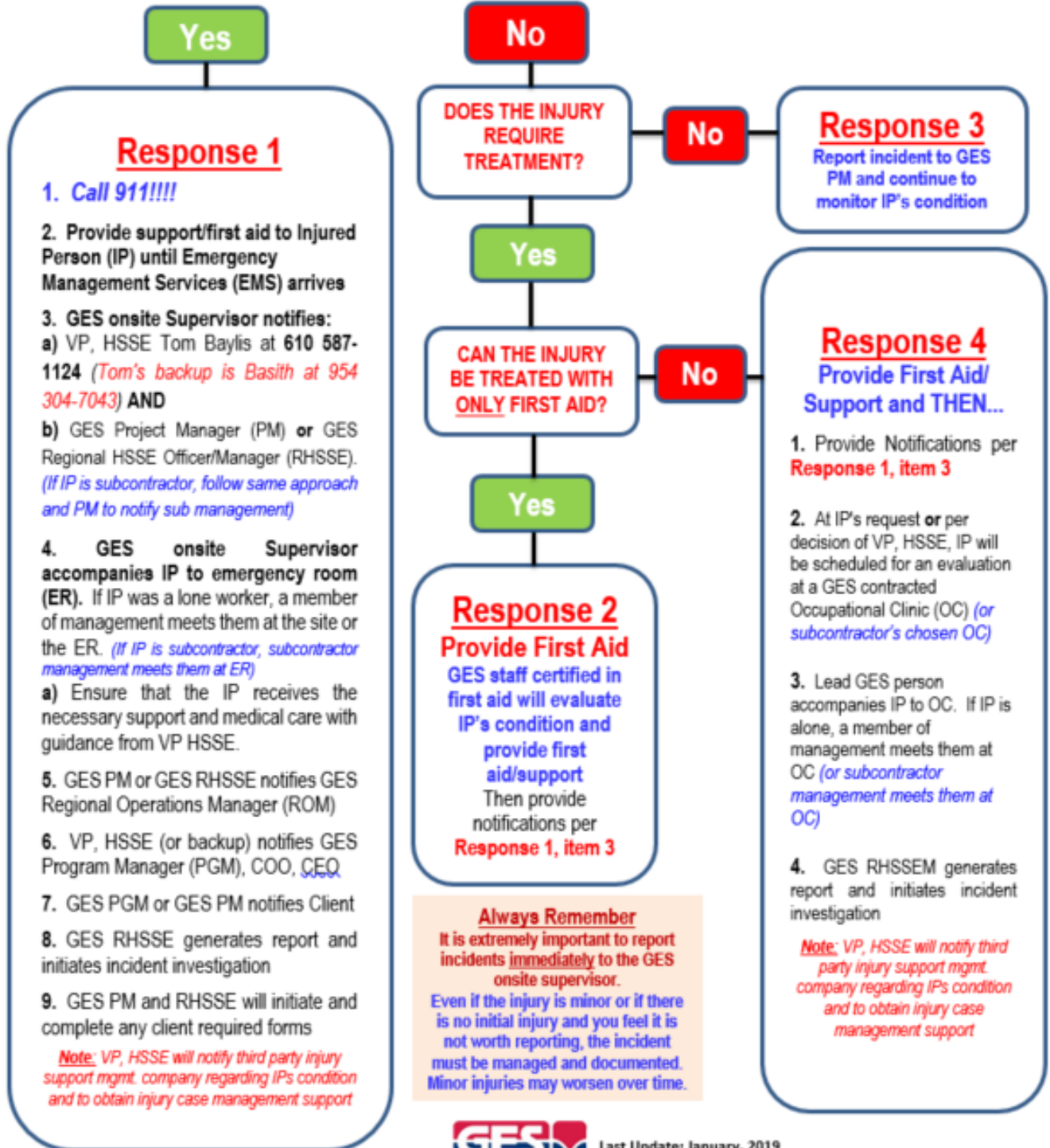
ATTACHMENT G

INJURY CASE MANAGEMENT FLOWCHART

GES PROJECT INJURY CASE MANAGEMENT

If an incident/injury occurs on-site to a GES or a subcontractor employee, the incident/injury must be immediately reported to the GES Onsite Supervisor. If a subcontractor is injured, also notify subcontractor management.

DOES THE INJURY REQUIRE EMERGENCY MEDICAL ATTENTION?



Last Update: January, 2019

ATTACHMENT H

SIGN OFF SHEET

