INTERIM REMEDIAL MEASURE – SOIL REMOVAL WORK PLAN PETERS DRY CLEANING LOCKPORT, NEW YORK

SITE NO. 932128

WORK ASSIGNMENT NO. D007619-14

Prepared for:

New York State Department of Environmental Conservation

Albany, New York

Prepared by:

MACTEC Engineering and Consulting, P.C.
Portland, Maine

MACTEC: 3612122244

APRIL 2014

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Submitted by:

Jeff McCrady
Project Engineer

Approved by:

Mark Stelmack, P.E.
Principal Professional

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

CAMP	Community Air Monitoring Plan
COCs	contaminants of concern
Department	New York State Department of Environmental Conservation
HASP	Health and Safety Plan
IRM	interim remedial measure
MACTEC	MACTEC Engineering and Consulting, P.C.
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
Site	Peter's Dry Cleaning Site
TSDF	treatment, storage, or disposal facility
WP	Work Plan

1.0 INTRODUCTION

MACTEC Engineering and Consulting, P.C. (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC [Department]), is submitting this Work Plan (WP) for the Peters Dry Cleaning Site (Site), in Lockport, Niagara County, New York. This WP is being submitted under the NYSDEC Work Assignment #D007619-14, and in accordance with the Superfund Standby Contract between MACTEC and the Department.

The WP presents the activities and work to be completed by MACTEC, the Department, and the Department-selected Contractor in support of completing this Interim Remedial Measure (IRM). The Department has selected Empire GeoServices, Inc. (Call Out ID 121896) as their callout Contractor to complete the remedial activities in accordance with the requirements described in this WP and the Contractor's Remedial Services Standby Contract C100908. MACTEC, as a representative of the Department, will provide construction oversight, community air monitoring, and quality assurance services. References in the WP to "MACTEC" shall be equivalent to "Engineer" references in the Drawings and Specifications. MACTEC serves as both the design engineer for the project and oversight engineer for the construction.

The following sections of the WP include a background summary of the Site, a brief scope of work for the IRM, and descriptions of the roles and responsibilities of the parties involved in the work. Detailed scope of work information is included in the Drawings and Specifications included in Appendix A and B, respectively. The Community Air Monitoring Plan (CAMP) to be implemented by MACTEC is included in Appendix C. Representative information regarding existing site conditions, including boring logs and soil analytical data, is included in Appendix D. The contained-in determination letter from the Department indicating the approval to dispose of portions of the contaminated soil as non-hazardous waste is included in Appendix E. Appendix F includes a Price Sheet to be filled out and submitted by the Contractor. Compensation for the work will be based on the Contract-approved unit prices for time and materials required to complete the Work and project specific unit prices for disposal organized as payment items included on the Price Sheet.

2.0 BACKGROUND INFORMATION

The Site is listed as a Class 2 Inactive hazardous waste site; Site No. 932128, in the Registry of Hazardous Waste Sites in New York State (NYS). Peters Dry Cleaning is located at 316 Willow Street in a residential neighborhood in the City of Lockport, Niagara County, New York (Drawing G-001). The Site is approximately 0.41 acres in size and was last used as a commercial dry cleaning facility. The building located on the property and used for the dry cleaning business was demolished in early October 2013, leaving only the foundation and drive way. The remainder of the Site is covered by grass and a gravel parking area, with some trees located along the property boundary.

The Site is surrounded by residential properties, and Altro Park, a City park is located northwest of the Site across Willow Street.

The area surrounding the Site is zoned R1 for residential use, but the Site itself has a special use zoning variance for commercial use. The Site is serviced by public sewer and water, as are the surrounding residential properties.

An IRM is a cleanup activity that may be performed when a source of contamination or exposure pathway (the way in which a person may contact contamination) can be effectively addressed without extensive investigation and evaluation.

The IRM will be conducted in two phases. The first phase of the IRM will consist of the demolition of remnant building structures on-site above and below grade. Remnant structures include foundation walls and the concrete floor slab that were left in place until additional subsurface sampling could be completed. This sampling was conducted in October and March 2014 to better delineate the contamination. The second phase of the work will be removal of contaminated soil, disposal of the soil at an approved offsite disposal facility, backfilling the excavation to grade with clean soil, and seeding the site.

3.0 SCOPE OF WORK

The IRM will include an access control component to deter unauthorized Site access and reduce potential public exposure to accessible contaminant source areas and other on-site contamination while work is being performed. The remnant building slab from the demolished building structure will be removed in its entirety to access contaminated soils underneath and around the slab.

The work area is located inside and outside the Site property boundary. The work area will be accessed from Willow Street by way of a private driveway.

The Contractor shall supply all labor and furnish all materials, supplies, tools and equipment, and all consumable items that are required to complete the work. The work for this IRM is comprised of the following primary tasks:

1. Mobilize equipment and personnel to the Site as required to perform the work.
    a. Provide a frac tank to contain water generated during execution of the work.
    b. Provide carbon vessels to meet pre-treatment requirements of the City of Lockport wastewater treatment plant prior to discharge.
    c. Provide a decontamination Pad or equivalent means for decontaminating small tools and equipment.
    d. Provide other temporary facilities and controls as deemed necessary by the Contractor.
    e. Provide other equipment and materials as required.
2. Remove and dispose of approximately 250 tons of construction and demolition debris as indicated in the provided Drawings.
3. Remove approximately 2,571 tons of contaminated soil as indicated in the provided drawings.
4. One (1) documentation sample will be collected per 30 linear feet of sidewall and one (1) documentation sample will be collected per 900 square feet of bottom area of excavation as outlined in Specification Section Attachment 02105-1. Documentation samples will be collected by means outlined in Specification Section 02105, Sub-Part 3.03 (in compliance with DER-10). Documentation samples will be submitted for analysis per Specification Section 02105, Sub-Part 3.06. Samples will be submitted to the NYSDEC callout laboratory.
5. Stockpile the excavated soil outside the horizontal non-hazardous waste limit determined to be clean by visual inspection and photo-ionization detector for backfill.
6. On-Site soil excavated outside the areas designated for off-site disposal can be re-used as Select Borrow provided it meets the criteria outlined in Specification Section 02300, Sub-Part 2.01D and unless visual observations such as staining or presence of free product is

noted. Soil impacted by staining shall be screened with a photoionization detector (PID). If PID readings equal to or below background measurements are obtained, stained soil will be deemed suitable for reuse. Soil with PID readings above background readings and soil in contact with or comingled with free product shall be segregated and disposed accordingly (refer to Specifications 02110 [Waste Removal, Handling, and Storage] and 02120 {Off-Site Transportation and Disposal]).

7. Clean broken concrete generated from on-site demolition may be re-used as backfill if it meets the criteria outlined in Specification Section 02300, Sub-Part 1.08C.
8. Per DER-10, Select Borrow will be imported, as necessary, for use as backfill if it meets the requirements of Specification Section 02300, Sub-Part 2.01, complies with the Unrestricted Soil Cleanup Objectives as described in 6 NYCRR 375, Table 375-6.8(a) and specified in Section 02105 Attachment 3, and is tested in accordance with Specification Section 02300, Sub-Part 2.05.C.
9. Complete site restoration activities in accordance with the provided drawings and specifications.
10. Characterize waste generated during execution of the work (waste characterization completed to date may be used to establish waste profiles for the contaminated material). Transport and dispose construction and demolition debris, hazardous waste, non-hazardous waste, and construction water at licensed treatment, storage, or disposal facilities (TSDF) approved by the Department and MACTEC (See contained in approval letter in Appendix E).

The Contractor shall perform the work in a manner that is compliant with Section 2, Article 2 of its Remedial Services Standby Contract C100908, their corporate Health and Safety Plan (HASP) and all governing Occupational Safety and Health Administration (OSHA) regulations. If required, the Contractor shall develop a site-specific HASP to direct work with and around the Site's contaminants of concern (COCs). The COCs for the Site are volatile organic compounds.

Minimize erosion and sedimentation during the work in accordance with best management practices as defined in the New York Standards and Specifications for Erosion and Sediment Control, August 2005 by the NYS Soil and Water Conservation Committee. Appropriate erosion and sediment control best management practices) shall be in place prior to commencing earth disturbance activities.

The Contractor shall execute the work by methods that minimize the generation of dust. The Contractor shall employ dust control measures to minimize the creation of airborne dust during execution of the work. Dust control systems shall be implemented, as necessary, to meet local, state, and/or federal regulations for air emissions and dust. The dust control measures will be such

that, at a minimum, air quality is in compliance with the New York State Department of Health Generic CAMP, the site-specific CAMP (see Appendix C), and applicable OSHA regulations.

The Contractor shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the TSDF as well as Federal, State, and local governments are complied with and properly documented.

For additional details regarding the scope of work, refer to the Drawings and Specifications in Appendices A and B, respectively, of this work plan.

4.0 ROLES AND RESPONSIBILITIES

4.1 CONTRACTOR ROLES AND RESPONSIBILITIES

The Contractor shall be responsible for the work identified in the Drawings presented in Appendix A, and the Specifications presented in Appendix B of this WP, including:

- Executing a callout contract with the Department for the work described in the WP;
- Preparing and submitting for approval of all required submittals. Ensuring that work is conducted in accordance with the Contractor's Site-Specific HASP;
- Ensuring that work is conducted in accordance with the requirements of the Site-Specific CAMP;
- Ensuring that access control measures are implemented in a manner that is protective of the Site and general public;

4.2 ENGINEER ROLES AND RESPONSIBILITIES

MACTEC, as the Engineer shall be responsible for:

- Coordination and correspondence with the Department
- Implementation of the Site-Specific CAMP
- Oversight of Contractor including, but not limited to:
  - Review and approval of (in conjunction with the Department) all submittals;
  - Ensuring that remedial activities are in accordance with the Drawings and Specifications provided;
  - Ensuring that MACTEC's oversight activities are conducted in accordance with MACTEC's Site-Specific HASP;
  - Approving design and cost changes in consultation with the Department;
  - Verifying quantity measurements;
  - Inspecting and approving completed remediation activities as meeting the requirements of the Drawings and Specifications; and
  - Recommending to the Department payment for accepted work.
- Completing a Final Completion Report for the WP for submittal to the Department.

4.3 DEPARTMENT ROLES AND RESPONSIBILITIES

The Department shall be responsible for:

- Executing a callout contract with a Department-approved Contractor to perform the work described in the WP;
- Securing access agreements with the property owner, and abutting property owner at 320 Willow Street;
- Providing input and approval of changes in the work including elements affecting technical changes to the design and cost changes; and
- Approving payment to the Contractor for work verified and completed to the satisfaction of MACTEC.

5.0 SITE ACCESS

The Site is will be accessed from Willow Street. Temporary access roads within the property will be constructed by the Contractor as required to provide truck access to the working face of the excavation. The Department has secured access agreements with each property owner and the Contractor has been granted permission by the Department to perform the work on these properties.

The City of Lockport has granted the Contractor permission to utilize the Altro Park parking lot for truck staging and queuing due to the limited available space at the Site.

6.0 SCHEDULE

The proposed schedule is to begin work by April 7, 2014 and complete work within four (4) calendar weeks.

7.0 PRICE SHEET

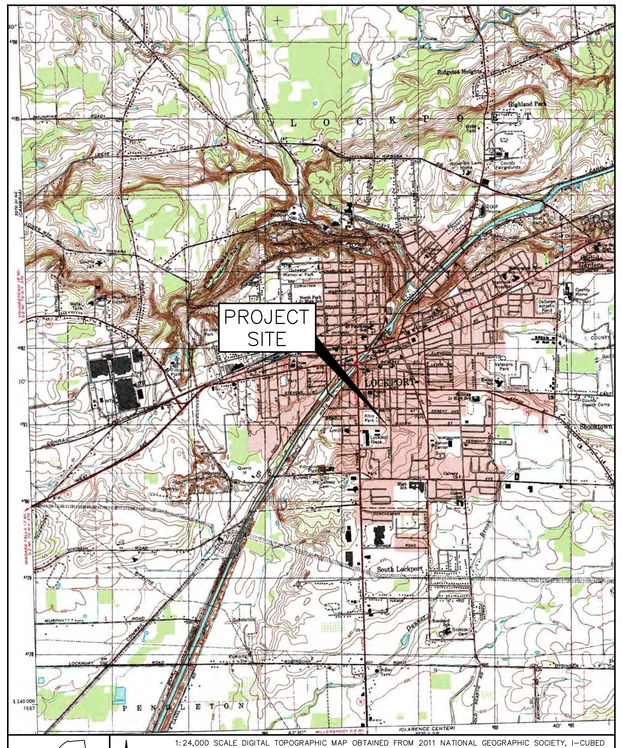
The Contractor shall provide MACTEC and the Department with a price to perform the work described in this WP consistent with the Contractor's current New York State-approved rates. The Contractor shall provide MACTEC with a breakdown of scope of work costs as noted on the Price Sheet included in Appendix F.

The Contractor is requested to provide a completed price sheet to Jeff McCrady (jeff.mccrady@amec.com) at MACTEC and Michael Hinton (mjhinton@gw.dec.state.ny.us) at the Department upon request. MACTEC and the Department will review the price provided and, if accepted, the Department will provide Empire GeoServices, Inc. authorization to proceed with the work.

APPENDIX A

DRAWINGS

G-001	Cover Sheet
G-002	Legend, Abbreviations, and General Notes
C-101	Existing Conditions Plan
C-102	Phase 1 Excavation Plan
C-103	Final Excavation Plan
C-104	Restoration Plan
C-201	Sections
C-301	Civil Details 1
C-302	Civil Details 2



INTERIM REMEDIAL MEASURE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
316 WILLOW STREET, SITE NO. 932128
LOCKPORT, NEW YORK

APRIL 2014

1:24,000 SCALE DIGITAL TOPOGRAPHIC MAP OBTAINED FROM 2011 NATIONAL GEOGRAPHIC SOCIETY, I–CUBED

PROJECT SITE:
316 WILLOW STREET
COUNTY OF NIAGRA
LOCKPORT, NEW YORK

LOCUS MAP

0 500 1000 2000
SCALE IN FEET

DRAWING INDEX

SHEET NUMBER	DRAWING TITLE	DISCIPLINE NUMBER
1	COVER SHEET	G–001
2	LEGEND, ABBREVIATIONS, AND GENERAL NOTES	G–002
3	EXISTING CONDITIONS PLAN	C–101
4	PHASE I EXCAVATION PLAN	C–102
5	FINAL EXCAVATION PLAN	C–103
6	RESTORATION PLAN	C–104
7	SECTIONS	C–201
8	CIVIL DETAILS 1	C–301
9	CIVIL DETAILS 2	C–302

WEST NIAGRA COUNTY COLOR DIGITAL ORTHOIMAGERY (2008) OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE AT: HTTP://WWW.NYSGIS.STATE.NY.US

PROJECT SITE:
316 WILLOW STREET
COUNTY OF NIAGRA
LOCKPORT, NEW YORK

SITE MAP

0 75 150 300
SCALE IN FEET

MARK JAMES STELMACK
080317
04/03/14

NO.	DATE	REVISION	BY	APVD
0	04/03/14	ISSUED FOR CONSTRUCTION	JPM	MJS

DSGN	DR	CHK	APVD
JPM	JPM	MRS	MJS
			JPC

New York State Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

MACTEC

MACTEC Engineering and Consulting, P.C.
P.O. Box 7050, 511 Congress Street
Portland, Maine 04112–7050
(207) 775–5401

COVER SHEET

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 04/03/14
PROJ 3612-12-2244
DWG G-001
SHEET 1 OF 9

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FILE NAME: P:\Projects\CADD-PORT\Projects\nysdec1\Peters Dry Cleaning\IRM-G-001.dwg PLOT DATE: Thu, 03 Apr 2014 PLOT TIME: 10:04 PM

GENERAL NOTES:

1. DRAWING REFERENCES:
   - A. SITE LOCATION, TOPOGRAPHY, AND BOUNDARY INFORMATION BASED ON A PLAN ENTITLED "BOUNDARY SURVEY MAP" FOR PETERS DRY CLEANERS, LOCKPORT, NY, PREPARED BY PRUDENT ENGINEERING, DATED DECEMBER 19, 2013, SCALE 1"=20'.
2. SURVEY INFORMATION:
   - A. MAPPING COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (2011) – NEW YORK STATE PLANE COORDINATE SYSTEM (NYSNET), WEST ZONE (3103).
   - B. VERTICAL DATUM BASED ON NAVD 88 (NYSNET).
   - C. MAPPING UNITS ARE SHOWN IN U.S. SURVEY FEET.
   - D. THE CONTOUR INTERVAL IS 1/2 FOOT.
3. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM A COMBINATION OF FIELD OBSERVATIONS, AVAILABLE MAPS, RECORDS, AND INFORMATION PROVIDED BY THEIR OWNERS. THE LOCATION AND DESCRIPTION SHOULD BE CONSIDERED APPROXIMATE. THERE ALSO MAY BE OTHER FACILITIES, STRUCTURES OR UTILITIES IN THE AREA, THE EXISTENCE OF WHICH IS PRESENTLY UNKNOWN.
4. THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION IS RESPONSIBLE FOR COORDINATING PERMISSIONS AND SECURING ACCESS AGREEMENTS TO PERMIT WORK AND CONSTRUCTION SUPPORT ACTIVITIES ON THE ADJACENT ABUTTER PROPERTIES NOW OR FORMERLY OF MOHAWK, LTD, THADDEUS H. ZIMOWSKI, JAMIE MAUGERI ROBERTS, AND THE NEW YORK, SUSQUEHANNA AND WESTERN RAILWAY, AND THE AMERICAN LEGION CLONAN POST 1000.

ABBREVIATIONS:

APPROX	APPROXIMATELY
BM	BENCHMARK
BOT	BOTTOM
℄	CENTER LINE
CONC	CONCRETE
CP	CONTROL POINT (SURVEY)
D	DEPTH
E	EASTING, EAST, END
EL, ELEV	ELEVATION
EZ	EXCLUSION ZONE
FND.	FOUND
'	FOOT, FEET, MINUTES
G	GAS
GW	GROUNDWATER
H	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
HR	HOUR
ID	IDENTIFICATION, INSIDE DIAMETER
"	INCHES, SECONDS
INV	INVERT
IRM	INTERIM REMEDIAL MEASURE
L.	LIBER
LB	POUND, LEFT BANK
LF	LINEAR FEET
LOW	LIMIT OF WORK
LTD.	LIMITED
MAG	MAGNETIC
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MW	MONITORING WELL
N	NORTHING, NORTH
NE	NORTHEAST
NO.	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DEPARTMENT
NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
NYSNET	NEW YORK SPATIAL REFERENCE NETWORK
OC	ON CENTER
OD	OUTSIDE DIAMETER
O.H.	OVER HEAD
OHE	OVERHEAD ELECTRIC
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
ℙ	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
S	SOUTH, SLOPE, START
SE	SOUTHEAST
SF	SQUARE FEET OR SILTATION FENCE
SQ.	SQUARE
SS	STANDARD SPECIFICATIONS, SANITARY SEWER
ST	STORM
SW	SOUTHWEST
TYP	TYPICAL

LEGEND – EXISTING:

- PROPERTY LINE, RIGHT–OF–WAY LINE
- EASEMENT LINE
- TOPOGRAPHIC CONTOUR (MAJOR, 5' INTERVAL)
- TOPOGRAPHIC CONTOUR (MINOR, 0.5' INTERVAL)
- PAVEMENT
- CONCRETE
- CHAIN LINK FENCE
- WOODEN FENCE
- BUILDING
- TREE LINE OR BRUSH LINE
- OVERHEAD ELECTRICAL LINE (E)
- FUEL LINE (IG)
- WATER LINE (W)
- SANITARY SEWER LINE (SS)
- GATE VALVE (GV)
- SANITARY SEWER MH
- SANITARY SEWER CLEANOUT (CO)
- UTILITY POLE
- SIGN
- TEST PIT (TP–2)
- WELL LOCATION (MW–5)
- 2008 IRM

LEGEND – NEW:

- SILTATION FENCE (SF)
- CHAIN LINK FENCE
- WOODEN FENCE
- TEMPORARY CONSTRUCTION FENCE (X)
- LIMIT OF WORK (LOW)
- EXCLUSION ZONE BOUNDARY (EZ)
- TEMPORARY DEWATERING PIPING (SS)
- EXCAVATION LIMIT
- TOPOGRAPHIC CONTOUR (MAJOR, 5' INTERVAL) (675)
- TOPOGRAPHIC CONTOUR (MINOR, 0.5' INTERVAL)) (671)
- SPOT GRADE (+691.50)

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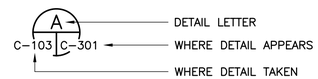

NO.	DATE	DSGN
0	04/03/14	JPM

ISSUED FOR CONSTRUCTION

REVISION	CHK	DR
APVD	MJS	MRS
MJS	APVD	JPM
JPC	MJS	JPM
	BY	

04/03/14

New York State Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

MACTEC Engineering and Consulting, P.C.
P.O. Box 1062, 511 Congress Street
Portland, Maine 04112–7050
(207) 775–5401

MACTEC

LEGEND, ABBREVIATIONS AND GENERAL NOTES

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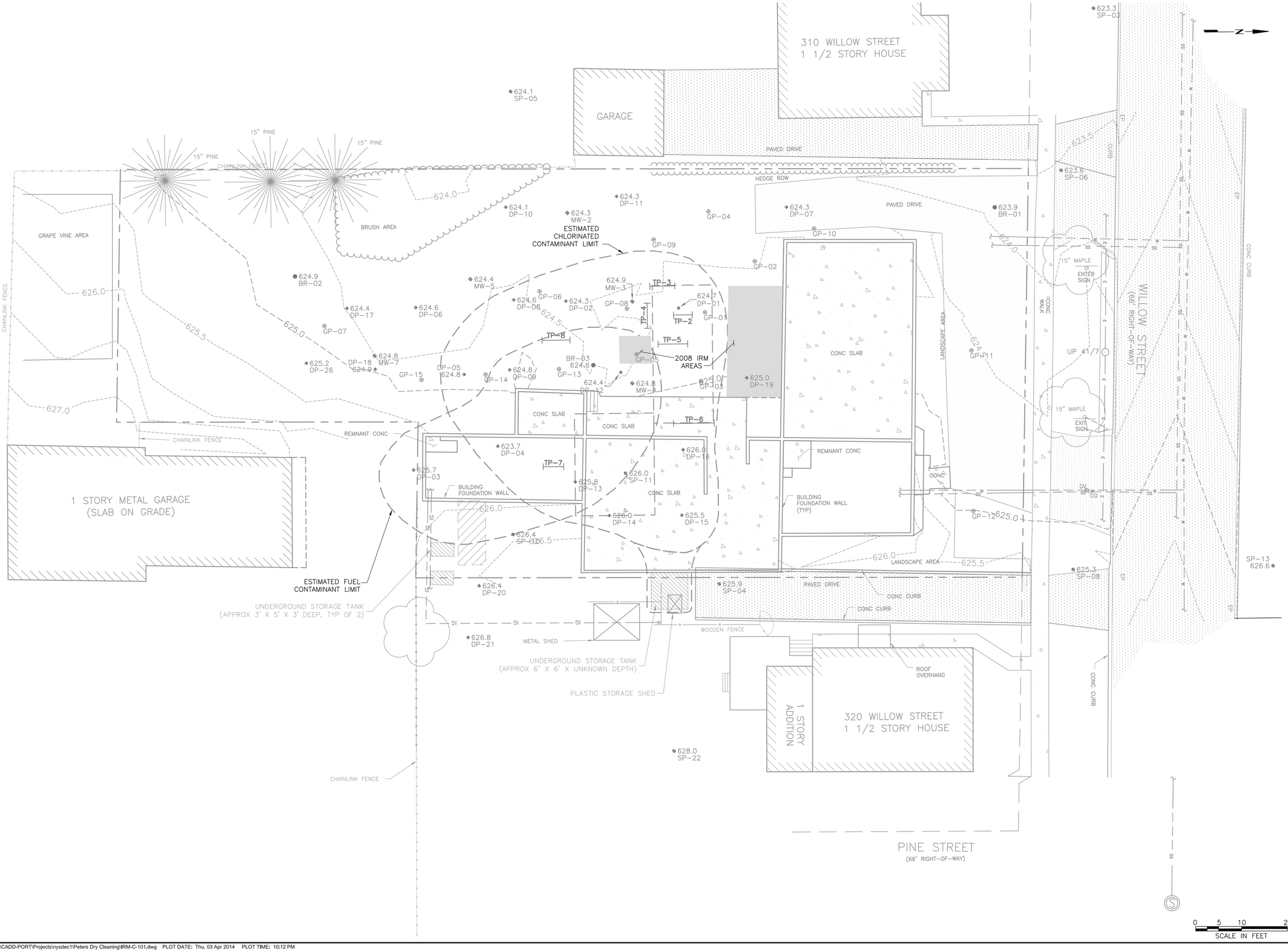

04/03/14

0	04/03/14	ISSUED FOR CONSTRUCTION	JPM	MJS
NO.	DATE	REVISION	BY	APVD

DSGN	DR	CHK	APVD
JPM		MRS	MJS

JPC

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MACTEC

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P.O. Box 7050, 511 Congress Street
Portland, Maine 04112-7050
(207) 775-5401

EXISTING CONDITIONS PLAN

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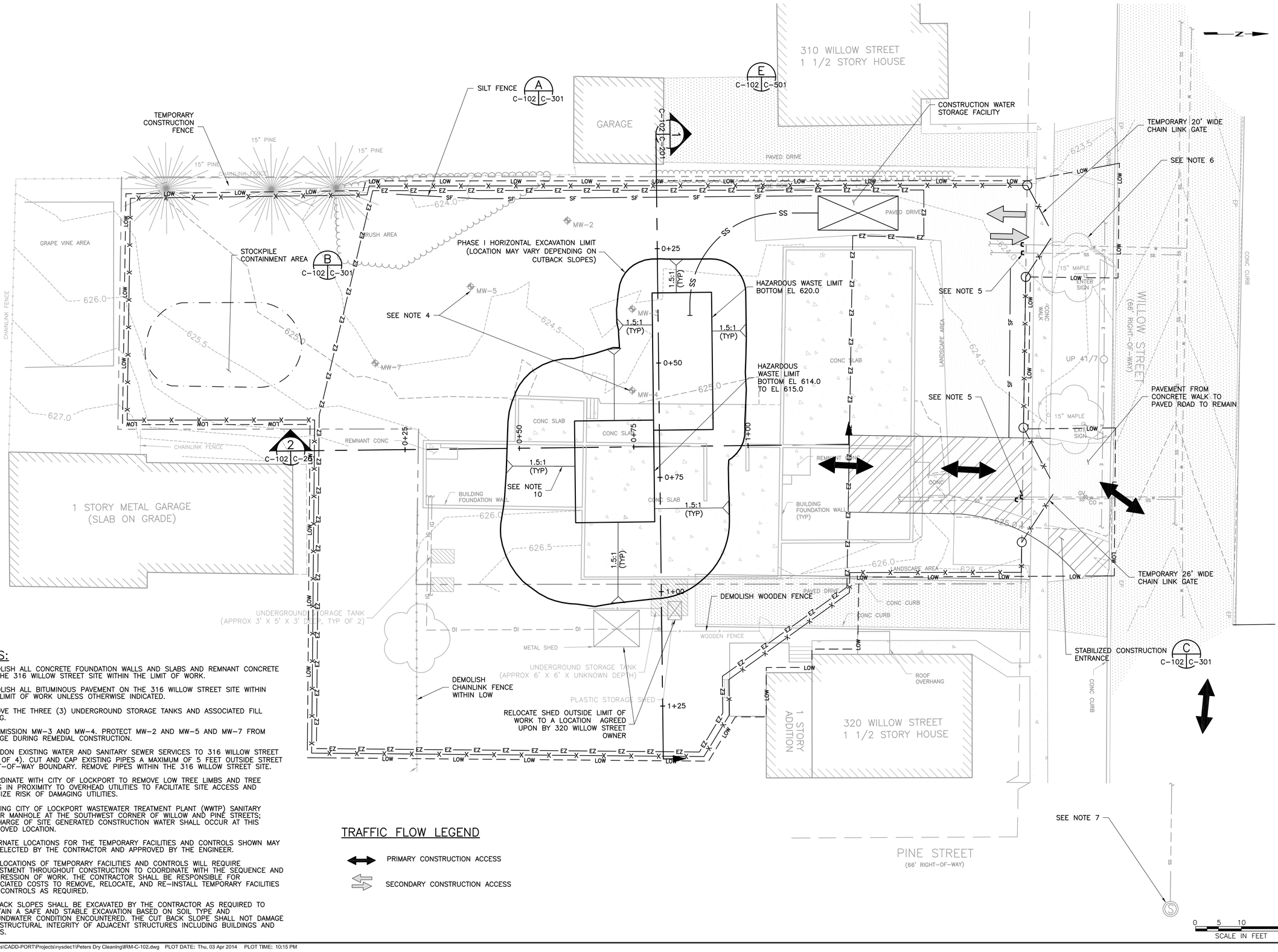

NOTES:

1. DEMOLISH ALL CONCRETE FOUNDATION WALLS AND SLABS AND REMNANT CONCRETE ON THE 316 WILLOW STREET SITE WITHIN THE LIMIT OF WORK.
2. DEMOLISH ALL BITUMINOUS PAVEMENT ON THE 316 WILLOW STREET SITE WITHIN THE LIMIT OF WORK UNLESS OTHERWISE INDICATED.
3. REMOVE THE THREE (3) UNDERGROUND STORAGE TANKS AND ASSOCIATED FILL PIPING.
4. DECOMISSION MW-3 AND MW-4. PROTECT MW-2 AND MW-5 AND MW-7 FROM DAMAGE DURING REMEDIAL CONSTRUCTION.
5. ABANDON EXISTING WATER AND SANITARY SEWER SERVICES TO 316 WILLOW STREET (TYP OF 4). CUT AND CAP EXISTING PIPES A MAXIMUM OF 5 FEET OUTSIDE STREET RIGHT-OF-WAY BOUNDARY. REMOVE PIPES WITHIN THE 316 WILLOW STREET SITE.
6. COORDINATE WITH CITY OF LOCKPORT TO REMOVE LOW TREE LIMBS AND TREE LIMBS IN PROXIMITY TO OVERHEAD UTILITIES TO FACILITATE SITE ACCESS AND MINIMIZE RISK OF DAMAGING UTILITIES.
7. EXISTING CITY OF LOCKPORT WASTEWATER TREATMENT PLANT (WWTP) SANITARY SEWER MANHOLE AT THE SOUTHWEST CORNER OF WILLOW AND PINE STREETS; DISCHARGE OF SITE GENERATED CONSTRUCTION WATER SHALL OCCUR AT THIS APPROVED LOCATION.
8. ALTERNATE LOCATIONS FOR THE TEMPORARY FACILITIES AND CONTROLS SHOWN MAY BE SELECTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
9. THE LOCATIONS OF TEMPORARY FACILITIES AND CONTROLS WILL REQUIRE ADJUSTMENT THROUGHOUT CONSTRUCTION TO COORDINATE WITH THE SEQUENCE AND PROGRESSION OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSOCIATED COSTS TO REMOVE, RELOCATE, AND RE-INSTALL TEMPORARY FACILITIES AND CONTROLS AS REQUIRED.
10. CUTBACK SLOPES SHALL BE EXCAVATED BY THE CONTRACTOR AS REQUIRED TO MAINTAIN A SAFE AND STABLE EXCAVATION BASED ON SOIL TYPE AND GROUNDWATER CONDITION ENCOUNTERED. THE CUT BACK SLOPE SHALL NOT DAMAGE THE STRUCTURAL INTEGRITY OF ADJACENT STRUCTURES INCLUDING BUILDINGS AND DECKS.

TRAFFIC FLOW LEGEND

PRIMARY CONSTRUCTION ACCESS

SECONDARY CONSTRUCTION ACCESS

0 5 10 20
SCALE IN FEET

STATE OF NEW YORK LICENSED PROFESSIONAL ENGINEER
04/03/14

DSGN	NO.	DATE	DR	CHK	APVD
JPM	0	04/03/14	JPM	MJS	JPC
				BY	APVD

ISSUED FOR CONSTRUCTION
REVISION

MJS

MRS

JPM

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New York State
Department of Environmental Conservation

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NYSDEC SITE NO. - 932128

MACTEC Engineering and Consulting, P.C.
P.O. Box 1076, 511 Congress Street
Portland, Maine 04112-7050
(207) 775-5401

MACTEC

CIVIL
PHASE I
EXCAVATION PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	04/03/14
PROJ	3612-12-2244
DWG	C-102
SHEET	4 OF 9

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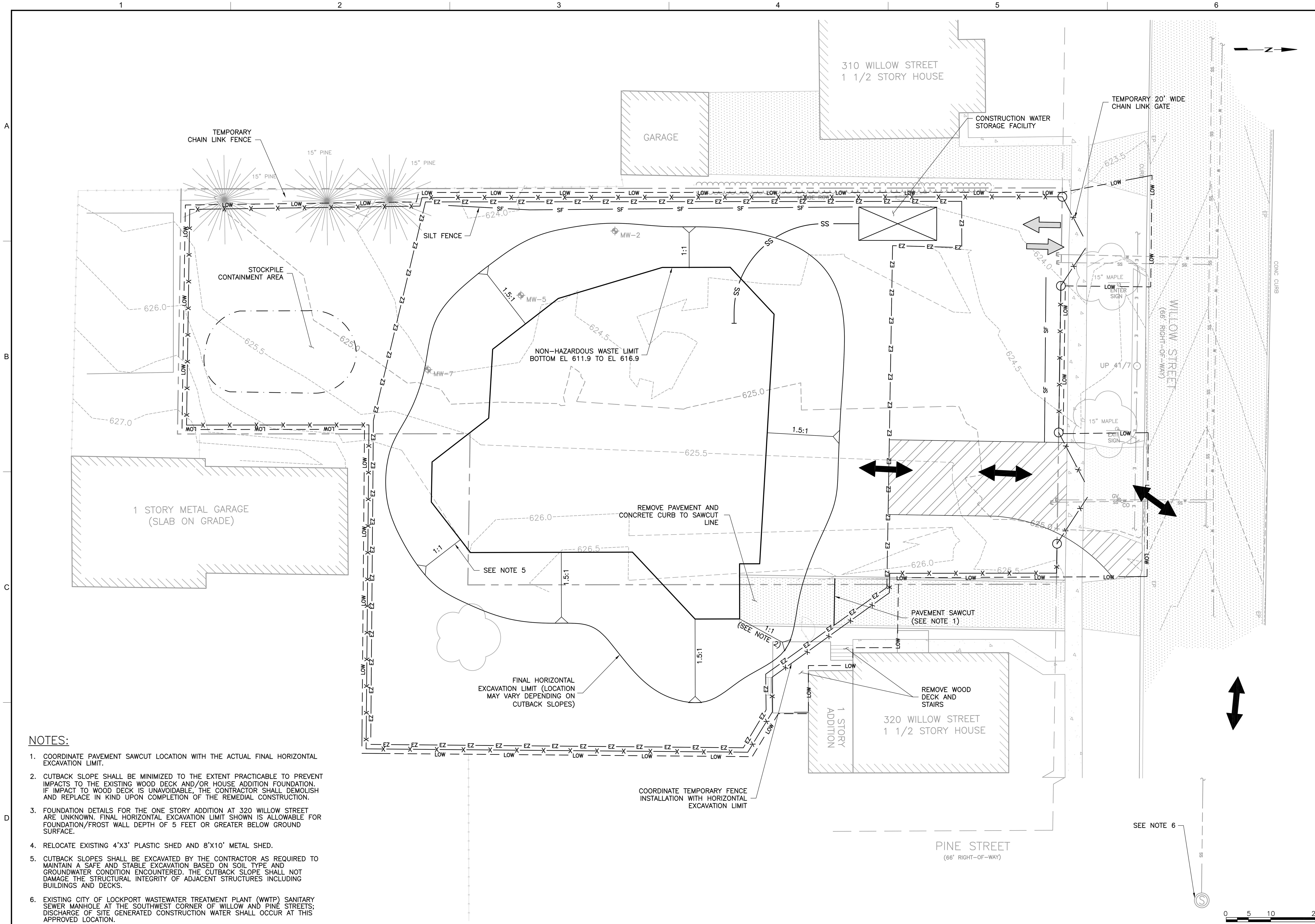


NOTES:

1. COORDINATE PAVEMENT SAWCUT LOCATION WITH THE ACTUAL FINAL HORIZONTAL EXCAVATION LIMIT.
2. CUTBACK SLOPE SHALL BE MINIMIZED TO THE EXTENT PRACTICABLE TO PREVENT IMPACTS TO THE EXISTING WOOD DECK AND/OR HOUSE ADDITION FOUNDATION. IF IMPACT TO WOOD DECK IS UNAVOIDABLE, THE CONTRACTOR SHALL DEMOLISH AND REPLACE IN KIND UPON COMPLETION OF THE REMEDIAL CONSTRUCTION.
3. FOUNDATION DETAILS FOR THE ONE STORY ADDITION AT 320 WILLOW STREET ARE UNKNOWN. FINAL HORIZONTAL EXCAVATION LIMIT SHOWN IS ALLOWABLE FOR FOUNDATION/FROST WALL DEPTH OF 5 FEET OR GREATER BELOW GROUND SURFACE.
4. RELOCATE EXISTING 4'X3' PLASTIC SHED AND 8'X10' METAL SHED.
5. CUTBACK SLOPES SHALL BE EXCAVATED BY THE CONTRACTOR AS REQUIRED TO MAINTAIN A SAFE AND STABLE EXCAVATION BASED ON SOIL TYPE AND GROUNDWATER CONDITION ENCOUNTERED. THE CUTBACK SLOPE SHALL NOT DAMAGE THE STRUCTURAL INTEGRITY OF ADJACENT STRUCTURES INCLUDING BUILDINGS AND DECKS.
6. EXISTING CITY OF LOCKPORT WASTEWATER TREATMENT PLANT (WWTP) SANITARY SEWER MANHOLE AT THE SOUTHWEST CORNER OF WILLOW AND PINE STREETS; DISCHARGE OF SITE GENERATED CONSTRUCTION WATER SHALL OCCUR AT THIS APPROVED LOCATION.

NO.	DATE	REVISION	BY	APVD
0	04/03/14	ISSUED FOR CONSTRUCTION	JPM	MJS

DSGN JPM | DR MRS | CHK MJS | APVD JPC

04/03/14

MACTEC Engineering and Consulting, P.C.
P.O. Box 7050, 511 Congress Street
Portland, Maine 04112-7050
(207) 775-5401

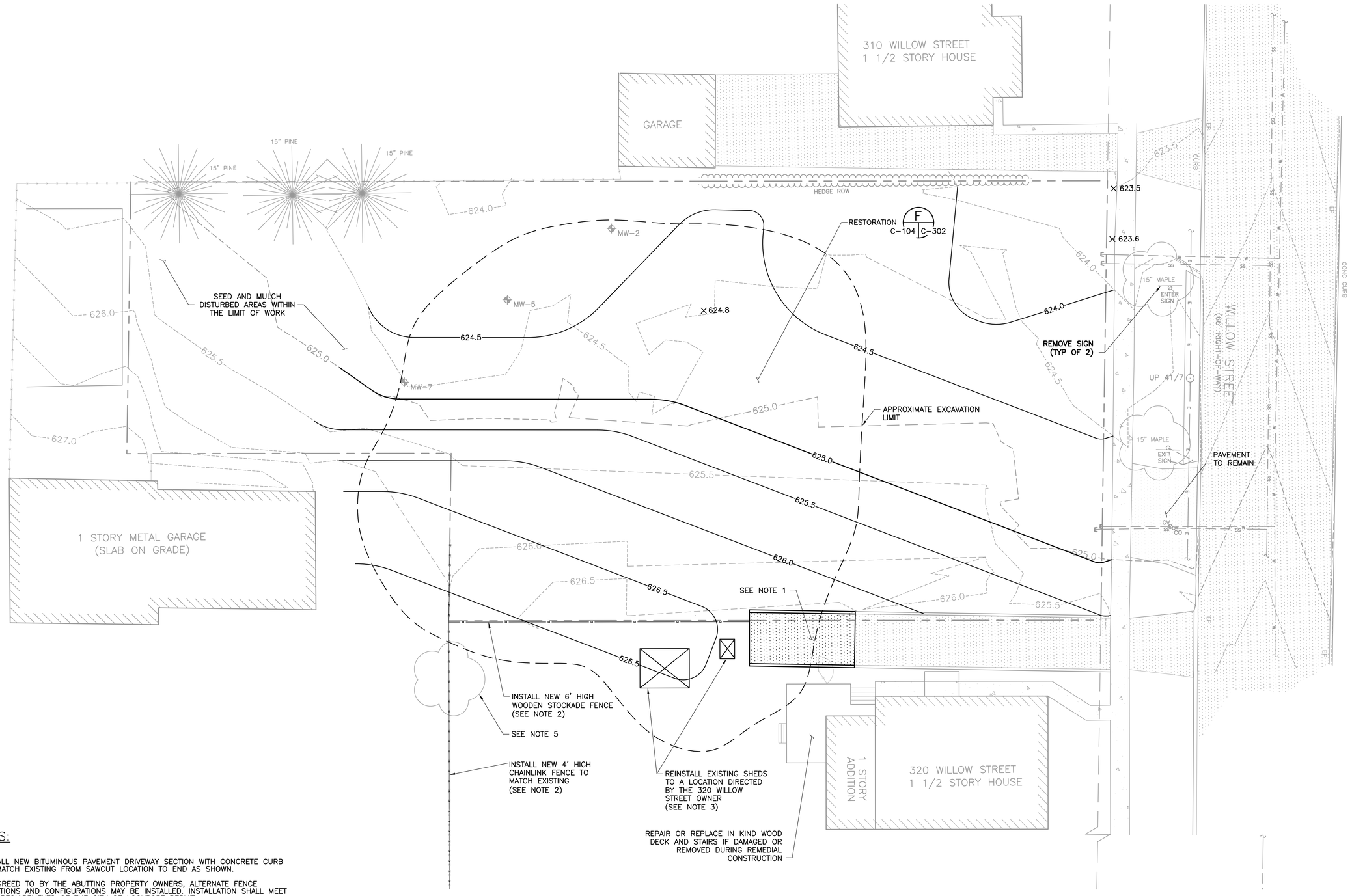
New York State Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

CIVIL
FINAL
EXCAVATION PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	04/03/14
PROJ	3612-12-2244
DWG	C-103
SHEET	5 OF 9



NOTES:

1. INSTALL NEW BITUMINOUS PAVEMENT DRIVEWAY SECTION WITH CONCRETE CURB TO MATCH EXISTING FROM SAWCUT LOCATION TO END AS SHOWN.
2. IF AGREED TO BY THE ABUTTING PROPERTY OWNERS, ALTERNATE FENCE LOCATIONS AND CONFIGURATIONS MAY BE INSTALLED. INSTALLATION SHALL MEET THE REQUIREMENTS OF THE CITY OF LOCKPORT PERMIT.
3. SHED INSTALLATION SHALL MEET THE REQUIREMENTS OF THE CITY OF LOCKPORT PERMIT.
4. GRADE DISTURBED AREAS WITHIN THE LIMIT OF WORK AND BACKFILLED RESTORATION AS REQUIRED TO DIRECT DRAINAGE AS GENERALLY DEPICTED BY THE FINAL GRADE CONTOURS. ADJUSTMENTS MAY BE MADE ON THE 320 WILLOW STREET PROPERTY AS REQUIRED TO BLEND THE RESTORATION AREA GRADING WITH EXISTING AREAS OUTSIDE THE LIMIT OF WORK.
5. ASSESSMENT OF REMEDIAL CONSTRUCTION IMPACTS ON THE EXISTING TREE WILL BE MADE DURING RESTORATION WORK. IF IT IS DETERMINED THAT WORK HAS RESULTED IN ROOT DAMAGE, THE TREE WILL BE REMOVED.

N

0 5 10 20
SCALE IN FEET

STATE OF NEW YORK LICENSED PROFESSIONAL ENGINEER
04/03/14

NO.	DATE	DSGN	DR	CHK	APVD
0	04/03/14	JPM	JPM	MRS	MJS

ISSUED FOR CONSTRUCTION

REVISION	BY	APVD
	JPM	MPS
		JPC

New York State Department of Environmental Conservation

INTERIM REMEDIAL MEASURE
PETERS DRY CLEANING
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NYSDEC SITE NO. - 932128

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CIVIL
RESTORATION PLAN

VERIFY SCALE
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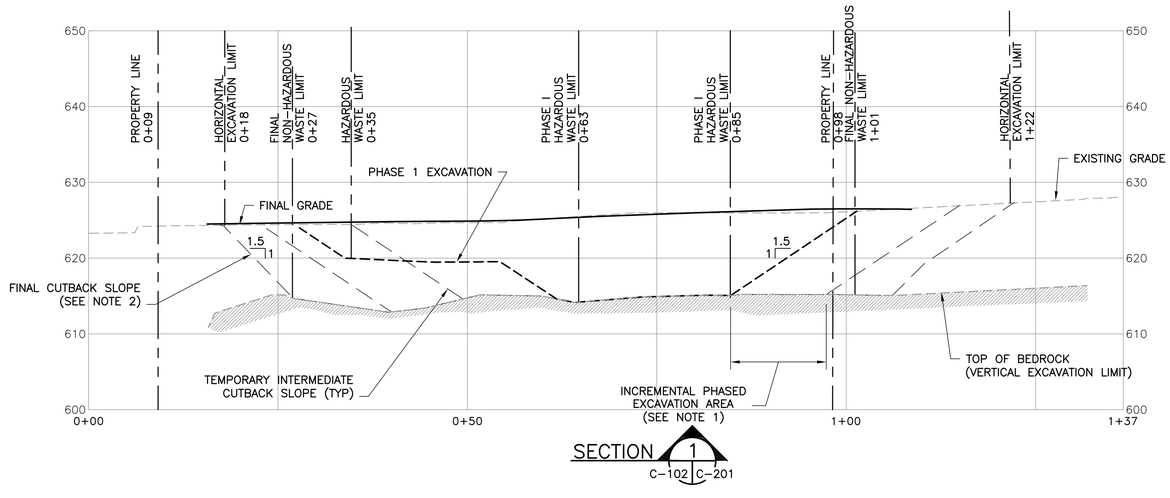
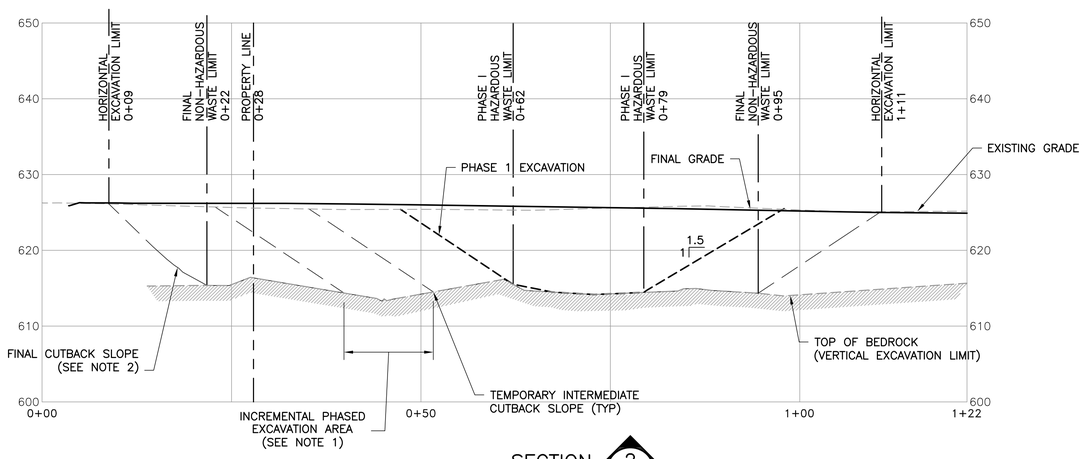
0 1"

DATE	04/03/14
PROJ	3612-12-2244
DWG	C-104
SHEET	6 OF 9



SECTION 1
C-102 | C-201



SECTION 2
C-102 | C-201

NOTE:

1. OPEN ACTIVE EXCAVATION AREA TO BE SIZED BY THE CONTRACTOR AS REQUIRED TO COORDINATE WITH THE SEQUENCE OF WORK AND TO MINIMIZE DEWATERING REQUIREMENTS.
2. EXCAVATION CUTBACK SLOPES (INTERMEDIATE AND FINAL) SHALL COORDINATE WITH SOIL TYPE, GROUNDWATER CONDITIONS, AND THE REQUIREMENTS OF OSHA SAFETY STANDARDS.

STATE OF NEW YORK LICENSED PROFESSIONAL ENGINEER
04/03/14

NO.	DATE	DSGN	DR	CHK	APVD
0	04/03/14	JPM	JPM	MRS	MJS

ISSUED FOR CONSTRUCTION

BY	APVD
JPM	MJS
JPC	APVD

New York State
Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

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CIVIL
CROSS SECTION

VERIFY SCALE
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0 1"

DATE	04/03/14
PROJ	3612-12-2244
DWG	C-201
SHEET	7 OF 9

FILE NAME: P:\Projects\CADD-PORT\Projects\nysdec1\Peters Dry Cleaning\IRM-C-201.dwg PLOT DATE: Thu, 03 Apr 2014 PLOT TIME: 10:31 PM

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (STATE STANDARDS) AND THE CONTRACT DOCUMENTS, SPECIFICALLY:

   - SPECIFICATION SECTION 02370 "EROSION AND SEDIMENT CONTROL";
   - DRAWING C–102 "PHASE 1 EXCAVATION PLAN";
   - DRAWING C–103 "FINAL EXCAVATION PLAN"; AND
   - DRAWING C–301 "CIVIL DETAILS 1".

   IF A DISCREPANCY EXISTS BETWEEN THE STATE STANDARDS AND THE CONTRACT DOCUMENTS, THE STATE STANDARDS SHALL TAKE PRECEDENCE.

2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

3. EROSION AND SEDIMENTATION CONTROLS SHALL BE AUGMENTED OR SUPPLEMENTED IF THE INSTALLED MEASURES DO NOT PROVIDE ADEQUATE PROTECTION OF DOWNSTREAM RESOURCES AS DETERMINED BY THE ENGINEER OR DEPARTMENT.

4. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN FOURTEEN (14) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE TEMPORARY SEEDING AND MULCHING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH HAY OR STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TONS PER ACRE, ACCORDING TO STATE STANDARDS.

5. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH HAY OR STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE, ACCORDING TO STATE STANDARDS.

6. ANY STEEP SLOPES (I.E. SLOPES GREATER THAN 3:1) WILL BE COMPLETELY GRADED AND STABILIZED DAILY, AS CONSTRUCTION PROGRESSES.

7. THE STANDARD FOR STABILIZED CONSTRUCTION ENTRANCE REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE.

8. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF WORK OR ONTO PUBLIC RIGHT–OF–WAYS SHALL BE REMOVED IMMEDIATELY.

9. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS AS SOON AS POSSIBLE AFTER FINAL GRADING. IF SEEDING IS NOT PERFORMED WITHIN 48 HOURS OF COMPLETION OF FINAL GRADING, ADDITIONAL SURFACE SCARIFICATION SHALL BE COMPLETED PRIOR TO SEEDING.

10. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS TO BE UNDERTAKEN, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROWTH SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE TO SUSTAIN VEGETATIVE GROWTH. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON–VEGETATIVE MEANS OF PERMANENT STABILIZATION SHALL BE EMPLOYED.

11. DEWATERING OPERATIONS SHALL BE UNDERTAKEN IN A MANER TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE SPECIFICATIONS.

12. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED PER THE STATE STANDARDS. CALCIUM CHLORIDE SHALL ONLY BE USED FOR DUST CONTROL DURING FREEZING CONDITIONS.

13. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF WORK WITH APPROPRIATE PROTECTIVE EROSION AND SEDIMENTATION CONTROLS.

14. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH GENERAL EROSION AND SEDIMENT CONTROL NOTE NO. 4 OR COVERED WITH GEOMEMBRANE.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR DOWNGRADIENT OF STORMWATER OUTFALLS/OUTLETS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

SOIL EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE:

1. STABILIZED CONSTRUCTION ENTRANCE

   A. STABILIZED CONSTRUCTION ENTRANCES SHALL, AT A MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24–HOUR PERIOD.

   B. STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES. CHECK FOR DAMAGE/DETERIORATION/CLOGGING AND IMMEDIATELY REPAIR OR RECONSTRUCT AS NECESSARY.

   C. THE PERFORMANCE OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY LENGTHENING, SCRAPING, OR TOP–DRESSING WITH ADDITIONAL AGGREGATE.

   D. STABILIZED CONSTRUCTION ENTRANCES SHALL HAVE A 6–INCH MINIMUM THICKNESS.

   E. INSPECT ADJACENT IMPERVIOUS SURFACES DAILY (MINIMUM). IMMEDIATELY REMOVE VISIBLE ACCUMULATED SEDIMENT DEPOSITED ON PAVED SURFACES VIA SWEEPING, VACUUMING, OR WASHING. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. PROPERLY DISPOSE OF SEDIMENT.

2. SEDIMENT BARRIERS

   A. SILTATION FENCE

      A.1. SILTATION FENCES SHALL, AT A MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24–HOUR PERIOD.

      A.2. REMOVE THE SEDIMENT DEPOSITS OR INSTALL A SECONDARY BARRIER UPSLOPE FROM THE EXISTING BARRIER WHEN SEDIMENT DEPOSITS REACH ONE HALF THE HEIGHT OF THE FENCE. PROPERLY DISPOSE OF SEDIMENT.

      A.3. REPLACE OR REPAIR FENCES WITHIN 24 HOURS OF OBSERVED FAILURE (E.G., DAMAGE OR DECOMPOSITION; FENCE MOVED OUT OF POSITION; UNDERCUTTING, OVERTOPPING, OR FLOW CHANNELS AROUND THE END OF FENCES).

      A.4. MAINTAIN SILTATION FENCES UNTIL THE CONTRIBUTING AREA IS STABILIZED.

3. TEMPORARY SEEDING AND MULCHING

   A. AREAS RECEIVING TEMPORARY SEEDING AND MULCHING SHALL, AT A MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE DURING A 24–HOUR PERIOD.

   B. WHERE SEED/MULCH HAS MOVED OR SOIL EROSION HAS OCCURRED, REPAIR THE AREA APPROPRIATELY AND RE–APPLY SEED AND/OR MULCH. APPLY NETTING, TACKIFIER, OR OTHER ANCHORING TECHNIQUES AS NECESSARY TO PREVENT FAILURE. ADDITIONAL TEMPORARY MEASURES MAY ALSO BE INSTALLED TO CONTROL STORMWATER RUNOFF AND SEDIMENT MOVEMENT.

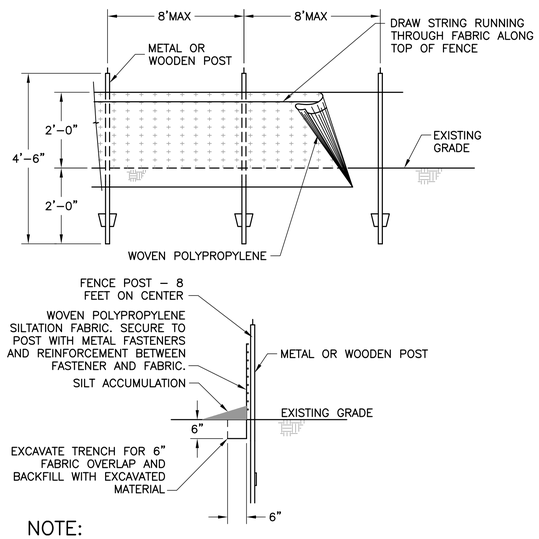
   C. CONTINUE INSPECTION AND MAINTENANCE OF AREAS RECEIVING TEMPORARY SEEDING AND MULCHING UNTIL AT LEAST 90% OF THE SOIL SURFACE IS BE COVERED BY MATURE, ESTABLISHED VEGETATION CAPABLE OF CONTROLLING SOIL EROSION AND SURVIVING SEVERE WEATHER.

4. DUST CONTROL

   A. THE PROJECT SITE AND ADJACENT RESIDENTIAL PROPERTIES SHALL, AT A MINIMUM, BE INSPECTED DAILY.

   B. APPLY DUST CONTROL MEASURES WHEN FUGITIVE DUST BECOMES EVIDENT.

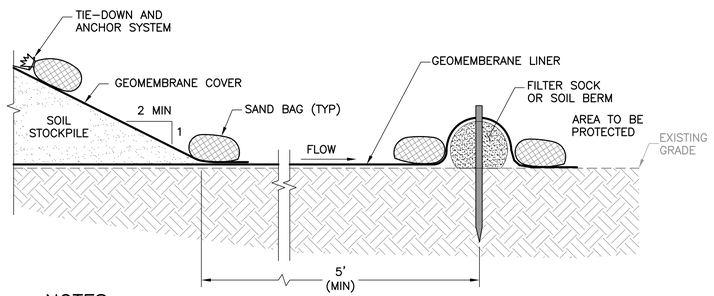
5. ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED ONCE UPGRADIENT AREAS ARE STABILIZED WITH ESTABLISHED VEGETATION, HOT MIX ASPHALT.



NOTE:

WHERE REQUIRED AT CRITICAL LOCATIONS, SILTATION FENCE REINFORCED WITH HOG OR CHICKEN WIRE OR INTEGRAL PLASTIC MESH REINFORCING MAY BE USED.

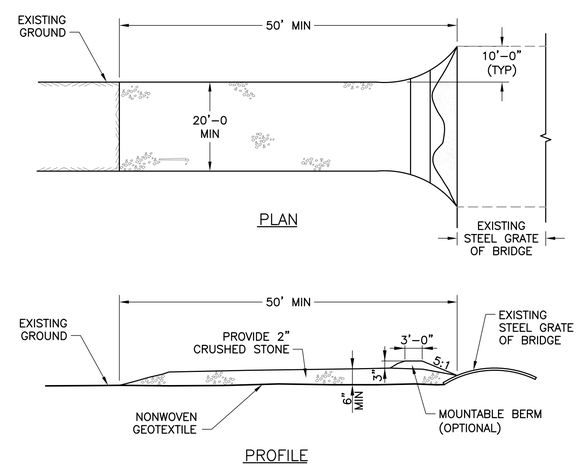
SILTATION FENCE (A)
NTS
C–102 | C–301



NOTES:

1. GEOMEMBRANE COVER IS NOT REQUIRED FOR STOCKPILES OF IMPORTED CLEAN MATERIAL OR EXCAVATED SOIL SUITABLE FOR RE–USE HOWEVER, COVERS MAY BE UTILIZED AS A DUST CONTROL MEASURE.
2. CONTAMINATED SOIL STOCKPILES SHALL BE COVERED TO THE EXTENT PRACTICABLE.
3. CONTAIMINATED SOIL STOCKPILES SHALL BE LOCATED WITHIN THE EXCLUSION ZONE. STOCKPILES OF IMPORTED MATERIALS AND/OR EXCAVATED SOIL SUITABLE FOR RE–USE MAY BE LOCATED INSIDE OR OUTSIDE THE EXCLUSION ZONE BUT WITHIN THE SITE PROPERTY BOUNDARY.

SOIL/SEDIMENT STOCKPILE CONTAINMENT (B)
NTS
C–102 | C–301



STABILIZED CONSTRUCTION ENTRANCE (C)
NTS
C–102 | C–301

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CIVIL
CIVIL DETAILS 1

New York State
Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

NO.	DATE	DSGN	DR	CHK	APVD
0	04/03/14	JPM	MRS	MJS	APVD
				JPM	BY
					APVD

ISSUED FOR CONSTRUCTION
REVISION

04/03/14 JPC

VERIFY SCALE
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DATE	04/03/14
PROJ	3612-12-2244
DWG	C-301
SHEET	8 OF 9

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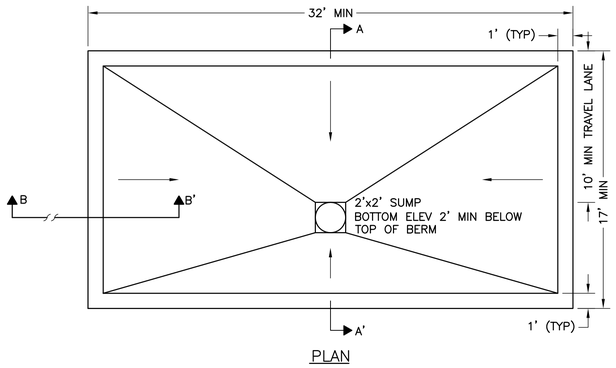

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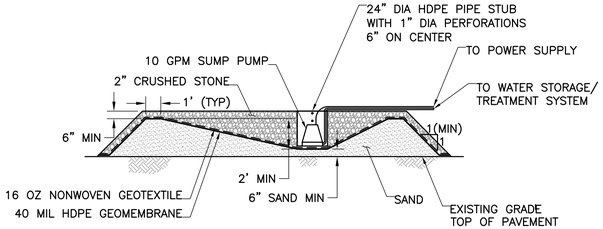
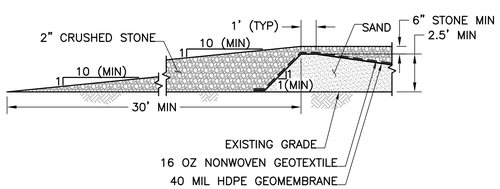


SECTION A–A'

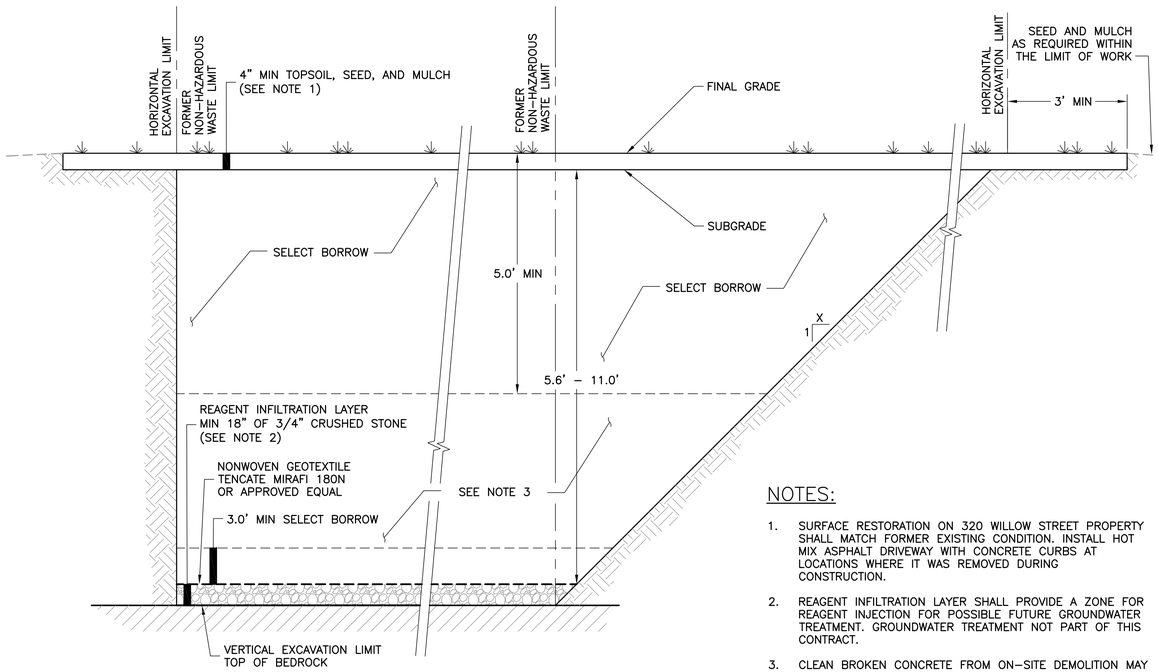


SECTION B–B'

NOTE:

CONTRACTOR MAY PROPOSE ALTERNATE MEANS AND METHODS OF DECONTAMINATION FOR APPROVAL BY THE ENGINEER.

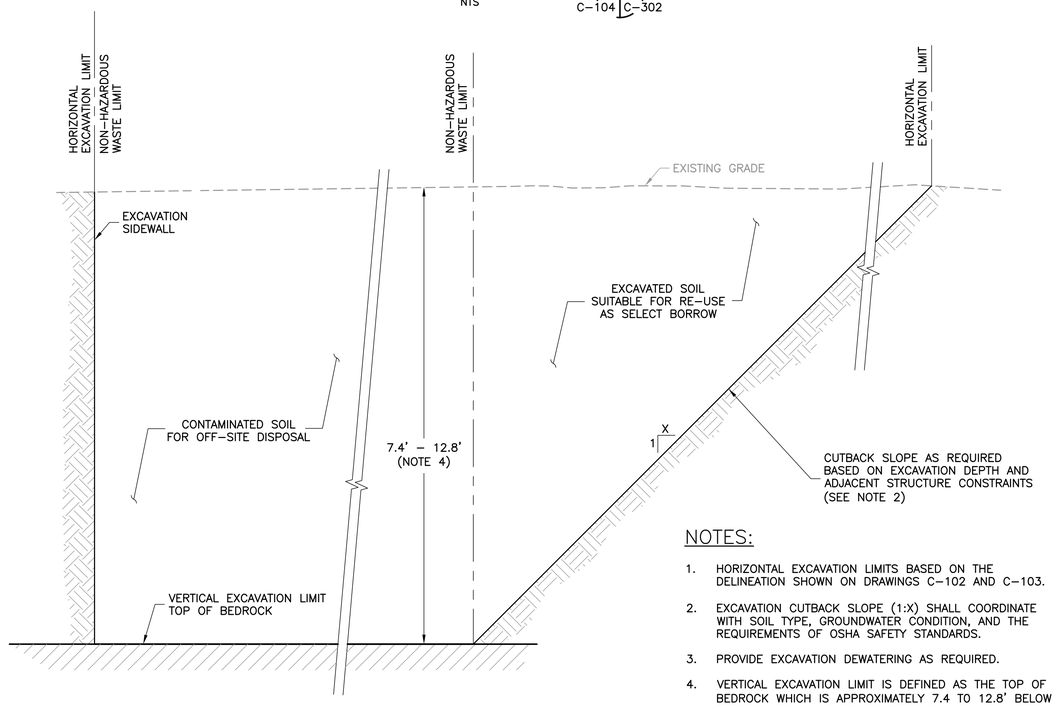
VEHICLE DECONTAMINATION PAD (D)
NTS
C–102 | C–302



NOTES:

1. SURFACE RESTORATION ON 320 WILLOW STREET PROPERTY SHALL MATCH FORMER EXISTING CONDITION. INSTALL HOT MIX ASPHALT DRIVEWAY WITH CONCRETE CURBS AT LOCATIONS WHERE IT WAS REMOVED DURING CONSTRUCTION.
2. REAGENT INFILTRATION LAYER SHALL PROVIDE A ZONE FOR REAGENT INJECTION FOR POSSIBLE FUTURE GROUNDWATER TREATMENT. GROUNDWATER TREATMENT NOT PART OF THIS CONTRACT.
3. CLEAN BROKEN CONCRETE FROM ON–SITE DEMOLITION MAY BE BACKFILLED WITHIN THE DEFINED LIMITS SHOWN.

RESTORATION (F)
NTS
C–104 | C–302



NOTES:

1. HORIZONTAL EXCAVATION LIMITS BASED ON THE DELINEATION SHOWN ON DRAWINGS C–102 AND C–103.
2. EXCAVATION CUTBACK SLOPE (1:X) SHALL COORDINATE WITH SOIL TYPE, GROUNDWATER CONDITION, AND THE REQUIREMENTS OF OSHA SAFETY STANDARDS.
3. PROVIDE EXCAVATION DEWATERING AS REQUIRED.
4. VERTICAL EXCAVATION LIMIT IS DEFINED AS THE TOP OF BEDROCK WHICH IS APPROXIMATELY 7.4 TO 12.8' BELOW EXISTING GROUND SURFACE WITHIN THE HORIZONTAL EXCAVATION LIMIT.

EXCAVATION (E)
NTS
C–103 | C–302

NO.	DATE	DSGN	DR	CHK	APVD
0	04/03/14	JPM	JPM	MRS	MJS

ISSUED FOR CONSTRUCTION

BY	APVD
JPM	MJS

REVISION

JPC 04/03/14

New York State
Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

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CIVIL
CIVIL DETAILS 2

VERIFY SCALE
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DATE	04/03/14
PROJ	3612-12-2244
DWG	C-302
SHEET	9 OF 9

FILE NAME: P:\Projects\CADD-PORT\Projects\nysdec1\Peters Dry Cleaning\IRM-C-302.dwg PLOT DATE: Thu, 03 Apr 2014 PLOT TIME: 10:38 PM

APPENDIX B

SPECIFICATIONS

01025	Measurement for Payment
01330	Submittal Procedures
01410	Regulatory Requirements
01450	Construction Quality Control
01500	Temporary Facilities and Controls
01560	Dust and Odor Control
01720	Field Engineering and Surveying
02100	Green Remediation
02105	Chemical Sampling and Analysis
02110	Waste Removal, Handling, and Storage
02120	Off-Site Transportation and Disposal
02221	Select Site Demolition
02231	Clearing and Grubbing
02240	Dewatering
02245	Construction Water Management
02250	Shoring (Sheeting and Bracing)
02300	Earthwork
02370	Erosion and Sediment Control
02921	Seeding and Soil Supplement

SECTION 01025

MEASUREMENT FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. This section covers the requirements for measurements and records for payment purposes, and describes measurement and payment for work to be completed under each pay item contained on the Price Sheet. Work specified, but not specifically designated as a pay item to be measured or paid for, shall be incidental to all pay items.

B. Payment procedures shall be as described in the terms of the Remedial Services Standby Contract (Contract) between the New York State Department of Environmental Conservation (DEPARTMENT) and the CONTRACTOR.

1.02 SCOPE OF PAYMENT

A. Payments to the CONTRACTOR shall be made for the actual quantities of the pay items performed and accepted in accordance with the Contract and Work Plan. Upon completion of construction, if these actual quantities show either an increase or decrease from the quantities given in the Price, the contract unit prices will still prevail, except as provided hereinafter.

B. The CONTRACTOR shall accept compensation, as herein provided, in full payment for furnishing all materials, labor, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced by the Contract; also for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work and until its final acceptance by the ENGINEER; and for all risks of every description connected with the prosecution of the Work, except as provided herein; also for all expenses incurred in consequence of the suspension of the Work as herein authorized.

C. No extra payment shall be made to the CONTRACTOR for any delays caused by weather conditions, lack of progress, defective workmanship, or rescheduling of work by other contractors, subcontractors, or equipment and material suppliers.

D. Additional costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of ENGINEER, shall be paid for by the party causing the rejected or nonconforming work.

E. Work done on written instructions of ENGINEER/DEPARTMENT, other than defective or nonconforming work, shall be paid for by the DEPARTMENT.

1.03 PAYMENT FOR INCREASED OR DECREASED QUANTITIES

A. When alterations in the quantities of work not requiring Change Orders, as herein provided for, are ordered and performed, the CONTRACTOR shall accept payment in full at the contract price for the actual quantities of work done. No allowance will be made for anticipated profits. Increased or decreased work involving Change Orders will be paid for as stipulated in such Change Orders as approved by the DEPARTMENT and CONTRACTOR.

1.04 ELIMINATED ITEMS

A. Should any unit price items contained in the Price Sheet be found unnecessary for the proper completion of the work contracted, the DEPARTMENT may eliminate such unit price items from the Contract, and such action shall in no way invalidate the Contract, and no allowance will be made for items so eliminated in making final payment to the CONTRACTOR.

1.05 FINAL PAYMENT

A. The CONTRACTOR will make, as soon as practicable after the entire completion of the project, a final quantity invoice of the amount of the Work performed and the value of such work for submittal to the ENGINEER.

1.06 INCIDENTAL WORK

A. Incidental work items for which separate payment is not measured include, but are not limited to, the following items:

1. Clean-up and disposal of debris and general Site trash generated during execution of the Work;
2. Restoration of property;
3. Traffic control and signage;
4. Cooperation and coordination with other contractors, the property owners, regulatory agencies, and others;
5. Utility crossings and relocations, unless otherwise paid for;
6. Temporary facilities and controls; and
7. Coordination with and inspection by emergency response entities.

B. All incidental work items associated with the specified Work shall be accounted for in one or more of the pay items.

1.07 SUBMITTALS

A. Price Breakdown:
CONTRACTOR shall provide a price breakdown of all items to be used for establishing amendments associated with work scope changes. Include a price for deck demolition, deck construction, paved driveway replacement, tree removal, as well as other defined work items identified and described in Sub-Part 1.08

B. APPLICATION FOR PAYMENT

CONTRACTOR shall provide applications for payment that meet the requirements of the DEPARTMENT and the Standby-Contract Agreement.

1.08 DESCRIPTION OF PAY ITEMS

A. General:

1. The pay items listed below describe the measurement of and payment for the Work to be done under the respective items listed on the Price Sheet.
2. Each pay item amount stated in the Price Sheet shall constitute full compensation, as herein specified, for each item of the Work completed.

B. Pay Item 1 – Mobilization/Demobilization

1. Pay Item 1 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for Mobilization/ Demobilization per the Work Plan.
2. Provide all labor, materials, equipment, and incidentals necessary to completely and properly furnish items in accordance with Specification Section 01330 – Submittal Procedures, Section 01410 – Regulatory Requirements, Section 01450 – Construction Quality Control, and as described below including, but not limited to:

    a. Bonds and insurance;
    b. Project work plans and submittals;
    c. Permitting;
    d. Mobilization of personnel and equipment;
    e. Temporary utilities;
    f. Temporary facilities and controls;;
    g. Decontamination pad;
    h. Staging and storage areas;
    i. Construction quality control;
    j. Temporary erosion and sedimentation controls;
    k. Final site cleanup;
    l. Demobilization;
    m. Project closeout; and
    n. Other work not specifically included in other items including: compliance with applicable regulatory requirements; preconstruction and construction period planning; scheduling, reporting, administration, and documentation; and spill control.

3. Measurement for payment for Pay Item 1 - Mobilization/Demobilization shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work described in this item as documented and approved by the ENGINEER.

C. Pay Item 2 – Demolition

1. Pay Item 2 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for Demolition per the Work Plan.
2. Provide all labor, materials, equipment, and incidentals necessary to completely and properly furnish items in accordance with Specification Section 02221 – Select Site Demolition, and as described below including, but not limited to:

    a. Decommissioning MW-3 and MW-4;
    b. Removal and on-site processing of bituminous pavement;
    c. Removal and on-site processing of concrete foundations, slabs, and concrete remnants;
    d. Removal and on-site processing of concrete underground storage tanks (content removal is included under Pay Item 3)
    e. Removal of wood deck and stairs;
    f. Abandonment of existing on-site utilities;
    g. Removal and disposal of clearing debris including the tree closest to the excavation limit; and
    h. Associated work not specifically included in other items.

3. Measurement for payment for Pay Item 2 – Demolition shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work described in this item as documented and approved by the ENGINEER.

D. Pay Item 3 – C&D Transportation and Disposal

1. Pay Item 3 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT and the project-specific unit price per ton for disposal of construction and demolition (C&D) debris.
2. Provide all labor, materials, equipment, and incidentals necessary for transportation and disposal of each ton of C&D generated as a result of select site demolition in accordance with Specification Section 0221 – Select Site Demolition, Section 02120 – Off-Site Transportation and Disposal; and as described below:

    a. Loading of processed C&D into trucks/containers;
    b. Transportation to the approved designated Treatment, Storage, and/or Disposal Facility (TSDF), or recycling facility;
    c. Disposal at the designated TSDF; and
    d. Associated work not specifically included in other items.

3. Measurement for payment of Pay Item 4 – C&D Transportation and Disposal shall be on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended

to complete the Work and the actual tons disposed at the TSDF. Disposal payment shall be unit price for each ton disposed at the TSDF as described above and verified by certified weight slips from the TSDF.

E. Pay Item 4 – Removal, Transportation, and Disposal of UST Contents

1. Pay Item 4 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT and the project-specific unit price per gallon for disposal of pumped underground storage tank (UST) contents.
2. Provide all labor, materials, equipment, and incidentals necessary for each gallon of liquid/solid contents removed from the tanks in accordance with Specification Section 02110 – Waste Removal, Handling, and Storage; and as described below:

    a. Removal of the UST contents by vactor truck or similar;
    b. Waste characterization testing of contents as required for disposal;
    c. Transportation of waste to the approved designated Treatment, Storage, and/or Disposal Facility (TSDF).
    d. Disposal at the designated TSDF; and
    e. Associated work not specifically included in other items

3. Measurement for payment of Pay Item 4 – Removal, Transportation, and Disposal of UST Contents shall be on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work and the actual gallons disposed at the TSDF. Disposal payment shall be unit price for each gallon disposed at the TSDF as described above and verified by certified measurement from the TSDF.

F. Pay Item 5 – Soil Excavation & Documentation Sample Collection

1. Pay Item 5 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for Soil Excavation per the Work Plan.
2. Provide all labor, materials, equipment, and incidentals necessary to completely and properly furnish items in accordance with Specification Section 02231 – Clearing and Grubbing; Section 02300 – Earthwork, and as described below including, but not limited to:

    a. Grubbing surface vegetation
    b. Excavating soil in support of demolition of concrete foundations, slabs, underground storage tanks, and abandonment of site utilities.
    c. Excavating hazardous waste to the horizontal and vertical hazardous waste limit as shown on Drawing C-102;
    d. Excavating non-hazardous waste to the horizontal and vertical non-hazardous waste limit as shown on Drawing C-103

e. Excavating cutback slopes to support removal of non-hazardous waste.

f. Provide all labor, materials, equipment, and incidentals necessary collect and submit documentation samples in accordance with Specification Section 02105 - Chemical Sampling and Analysis and as described below. Samples shall be submitted to the DEPARTMENT's call out laboratory (TestAmerica).

1. Coordinate delivery of laboratory containers
2. Collect samples; and
3. Ship samples;

g. On-site management of soil stockpiles; and

h. Associated work not specifically included in other items.

3. Measurement for payment for Pay Item 5 – Soil Excavation shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work described in this item as documented and approved by the ENGINEER.

G. Pay Item 6 – Construction Water Management

1. Pay Item 6 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for Construction Water Management per the Work Plan.

2. Provide all labor, materials, equipment, and incidentals necessary to completely and properly furnish items in accordance with Specification Section 02240 – Dewatering; Section 02245 – Construction Water Management, and as described below including, but not limited to:

a. Dewatering excavations;

b. Treating construction water to meet City of Lockport Wastewater Treatment Plant (WWTP) discharge limits;

c. Startup testing of treated construction water;

d. Transporting and disposing construction water to the approved off-site discharge location;

e. Coordinating with the Lockport WWTP to schedule discharges; and

f. Associated work not specifically included in other items.

3. Measurement for payment for Pay Item 6 – Construction Water Management shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work described in this item as documented and approved by the ENGINEER.

H. Pay Item 7 –Hazardous Waste Transportation and Disposal

1. Pay Item 8 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT and the project-specific unit price per ton for disposal of Hazardous Waste.
2. Provide all labor, materials, equipment, and incidentals necessary for transportation and disposal of each ton of Hazardous Waste in accordance with Specification Section 02110 – Waste Removal, Handling, and Storage, Section 02120 – Off-Site Transportation and Disposal; and as described below:

    a. Waste characterization testing, as required;
    b. Loading of hazardous waste into trucks/containers;
    c. Transportation to the approved designated Treatment, Storage, and/or Disposal Facility (TSDF);
    d. Disposal at the designated TSDF; and
    e. Associated work not specifically included in other items.

3. Measurement for payment of Pay Item 8 – Hazardous Waste Transportation and Disposal shall be on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work and the actual tons disposed at the TSDF. Disposal payment shall be unit price for each ton disposed at the TSDF as described above and verified by certified weight slips from the TSDF.

I. Pay Item 8 –Non-Hazardous Waste Transportation and Disposal

1. Pay Item 9 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT and the project-specific unit price per ton for disposal of Non-Hazardous Waste.
2. Provide all labor, materials, equipment, and incidentals necessary for transportation and disposal of each ton of Non-Hazardous Waste in accordance with Specification Section 02110 – Waste Removal, Handling, and Storage, Section 02120 – Off-Site Transportation and Disposal; and as described below:

    a. Waste characterization testing, as required;
    b. Loading of non-hazardous waste into trucks/containers;
    c. Transportation to the approved designated Treatment, Storage, and/or Disposal Facility (TSDF);
    d. Disposal at the designated TSDF; and
    e. Associated work not specifically included in other items.

3. Measurement for payment of Pay Item 9 – Non-Hazardous Waste Transportation and Disposal shall be on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials

expended to complete the Work and the actual tons disposed at the TSDF. Disposal payment shall be unit price for each ton disposed at the TSDF as described above and verified by certified weight slips from the TSDF.

J. Pay Item 9 – Final Restoration

1. Pay Item 10 shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for Final Restoration per the Work Plan.
2. Provide all labor, materials, equipment, and incidentals necessary to completely and properly furnish items in accordance with Specification Section 02300 – Earthwork; Section 02921 – Seeding and Soil Supplement, and as described below including, but not limited to:

    a. Completing geotechnical testing associated with all borrow material;
    b. Providing and installing 3/4" Crushed Stone and nonwoven geotextile for reagent infiltration layer;
    c. Providing imported Select Borrow;
    d. Backfilling excavation with on-site soil suitable for re-use as Select Borrow and imported Select Borrow.
    e. Compacting and testing Select Borrow
    f. Providing and installing Topsoil
    g. Final grading within the excavation limit and associated disturbed areas within the limit of work;
    h. Seeding and mulching imported Topsoil within the excavation limit;
    i. Seeding and mulching all disturbed areas within the limit of work
    j. Re-locating the sheds on 320 Willow Street property;
    k. Provide and install new chain link fence.
    l. Provide and install new wood stockade fence;
    m. Construct new deck with stairs on 320 Willow Street Property;
    n. Construct new bituminous pavement driveway section with concrete curbs; and
    o. Associated work not specifically included in other items.

3. Measurement for payment for Pay Item 10 – Final Restoration shall be paid on a time and materials basis per the unit rates in the CONTRACTOR's Remedial Services Standby Contract with the DEPARTMENT for the actual labor, equipment, and materials expended to complete the Work described in this item as documented and approved by the ENGINEER.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Required Submittals are identified in each technical specification section of the Contract Documents. A summary of Submittals is provided at the end of this section. Submittals shall be provided to the ENGINEER, as required, unless otherwise specified. Submittals may include:

1. Data
2. Drawings
3. Instructions
4. Schedules
5. Statements
6. Reports
7. Plans
8. Certificates
9. Samples
10. Records
11. Operation and Maintenance Manuals
12. Certified payrolls.

B. The CONTRACTOR shall make Submittals as required by the Contract Documents, including the individual specification sections and Construction Contract Drawings. Submittal items are summarized in Attachment 01330-1: Submittal Summary Table. The CONTRACTOR is responsible for all submittals indicated in the Contract Documents, whether listed in the Submittal Summary Table or not.

C. Submittal procedures shall conform to the requirements of Articles 5.23 and 5.29 of Section VIII – General Conditions, and as described in this section.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.01 GENERAL

A. Submittals shall be provided to the ENGINEER. Additional copies shall be provided to the DEPARTMENT upon request.

B. Submittals shall include items such as:

1. Manufacturer's or fabricator's drawings
2. Descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves
3. Test reports
4. Samples
5. Operation and Maintenance Manuals (including parts list)
6. Certifications
7. Warranties
8. Other pertinent data.

C. The CONTRACTOR is responsible for providing submittals well in advance of the need for the material or equipment for construction. Consideration shall be given to material lead times, delivery schedules, and time required for submittal review and acceptance by the ENGINEER.

D. Additional submittal requirements are described in Section 02105 – Chemical Sampling and Analysis.

3.02 SUBMITTAL REQUIREMENTS

A. Transmittal Form:

1. A Transmittal Form shall accompany all Submittals.
2. The Transmittal Form shall be developed and furnished by the ENGINEER.
3. Transmittals shall include the following information, at a minimum:

a. Submittal number in sequence, beginning with 1 (subsequent revised Submittals shall be identified with a number and letter, for example, 1A, 1B, etc.)
b. Date
c. Project title and project number
d. CONTRACTOR's name and address
e. Identification of each item submitted under the single Transmittal Form with a separate sequential number (e.g. 1.1, 1.2, etc.). Group only like items in a single Submittal; five items per Submittal maximum
f. Reference to the specification section and Sub-Part number and/or Construction Contract Drawing sheet and detail number (if applicable) pertinent to the data submitted
g. Notification of any deviations from Contract Documents
h. Return date required by CONTRACTOR
i. Other pertinent data.

B. CONTRACTOR Certification: The CONTRACTOR’s Certification that the Submittal meets contract requirements shall contain the following:

1. CONTRACTOR firm name
2. Point of contact name, signature, and title;
3. Date
4. CONTRACTOR's corrections as noted on Submittal data and/or attached sheets(s)
5. The certification may be provided as part of the Transmittal, on a separate sheet attached to the Transmittal, or as a stamp on the Submittal itself.

C. Procedures:

1. The CONTRACTOR shall schedule submissions at least 14 days before Submittal approvals will be needed, except where different lead time is specified.
2. Submittals shall be delivered electronically. The CONTRACTOR shall provide hardcopies to the ENGINEER and/or DEPARTMENT upon request.
3. The CONTRACTOR shall deliver Submittals to the ENGINEER and to the DEPARTMENT in electronic form by email. The CONTRACTOR-signed Transmittal shall be scanned and attached to the other electronic Submittal documents. The subject line of the email shall clearly note the project name and Submittal number.
4. The CONTRACTOR shall maintain one copy of the Submittal and Transmittal on Site.
5. At the time of each submission, the CONTRACTOR shall call to the ENGINEER's attention, in writing, any deviations that the Submittal may have from the requirements of the Contract Documents.

D. Submittals shall include:

1. Date and revision dates
2. Project title and number
3. The names of:

    a. ENGINEER
    b. CONTRACTOR
    c. Subcontractor
    d. Supplier
    e. Manufacturer
    f. Separate detailer when pertinent.

4. Identification of product or material
5. Field dimensions, clearly identified as such
6. Specification section and Sub-Part number and/or Construction Contract Drawing sheet and detail number
7. Applicable standards, such as ASTM or Federal Specification number
8. For Submittals which include proposed deviations requested by the CONTRACTOR, follow the procedures of Section VIII, Article 5.7.1, page VIII-14.

E. Submittals shall be of standardized sizes.

1. Approved standard sizes shall be:

    a. 24 inches by 36 inches
    b. 11 inches by 17 inches
    c. 11 inches by 8 1/2 inches.

2. Provision shall be made in preparing Submittals to afford a binding margin on left hand side of sheet.
3. Submittals put forward other than as specified herein may be returned for resubmittal without being reviewed.

Attachment 01330-1: Submittal Summary Table

No.	Specification Section	Specification Sub-Part	Submittal Item	Schedule
1	01410	1.06A	Copies of permit applications and permits	Upon submission/receipt
2	01450	1.04A	Contractor Quality Control (CQC) Plan	At the request of the ENGINEER/DEPARTMENT
3	01450	1.04B	Quality Assurance Project Plan (QAPP)	At the request of the ENGINEER/DEPARTMENT
4	01450	1.04C	Weekly CQC Reports, Test Reports, Deficiency Reports, and/or Project Summaries	As soon as the report is available
5	01720	1.03A	Qualifications of persons providing field engineering and surveying services	At the request of the ENGINEER/DEPARTMENT
6	01720	1.03B	Documentation verifying accuracy of survey work or instrumentation	At the request of the ENGINEER/DEPARTMENT
7	01720	1.03D	Survey data in support of quantity measurements	Prior to or along with payment requisitions
8	01720	1.03E	Survey data and measurements as the Work progresses in support of establishing Record Documents	At the request of the ENGINEER/DEPARTMENT
9	01770	1.07	Project Record Documents including • As-built survey data • All outstanding submittals (documentation and test data)	At project completion along with request for final payment
10	02100	1.04A	Form "A" – Summary of Green Remediation Metrics	With application for payment
11	01025	1.07A	Price Breakdown	14 days after notice to proceed
12	02105	1.04A	Quality Assurance Project Plan	At the request of the ENGINEER/DEPARTMENT
13	02105	1.04B	Sampling and Analysis Reports	Within TAT plus one day of sampling collection for electronic copy. Within TAT plus two weeks for final copy with DUSR.
14	02110	1.02B	Waste characterization laboratory reports	14 days prior to date approval is required.
15	02110	1.02B	Manufacturer's product data for geomembrane liner and cover	14 days prior to date approval is required
16	02120	1.02B	Permit profile of the Treatment Storage and/or Disposal Facility	14 days prior to date approval is required

Attachment 01330-1: Submittal Summary Table

No.	Specification Section	Specification Sub-Part	Submittal Item	Schedule
17	02120	1.02C	Profile Sampling Results	As work progresses
18	02120	1.02D	Written acceptance of waste profile from disposal facility	As work progresses and as an attachment in support of payment requisitions
19	02120	1.02E	Written confirmation from disposal facility of acceptance of waste	As work progresses and as an attachment in support of payment requisitions
20	02120	1.02F	Bill of Lading and Manifests for all transported waste loads	As work progresses and as an attachment in support of payment requisitions
21	02120	1.02G	Certified weight slips for each load transported to the disposal facility	As work progresses and as an attachment in support of payment requisitions
22	02240	1.03A	Dewatering and discharge/disposal methods	14 days prior to date approval is required
23	02245	1.03A	Construction Water Management Plan	At the request of the ENGINEER/DEPARTMENT
24	02245	1.03B	Analytical test reports	14 days prior to date approval is required
25	02245	1.03C	Bills of lading or manifests for off-site disposal	14 days prior to date approval is required
26	02250	1.03A	Engineered shoring system design, signed and sealed by a New York licensed professional ENGINEER for informational purposes	10 days prior to commencing excavation
27	02250	1.03B	Vibration monitoring readings for the duration of the work	Within 5 days of the completion of the Work
28	02300	1.04A	Borrow source information: • Name; and • Location	14 days prior to date approval is required
29	02300	1.04B	Contractor's Quality Control Testing Laboratory(ies) information: • Name; and • Qualifications	At the request of the ENGINEER/DEPARTMENT
30	02300	1.04C	Select Borrow Source Test Reports - Geotechnical	14 days prior to date approval is required
31	02300	1.04C	Crushed Stone Source Test Reports - Geotechnical	14 days prior to date approval is required
32	02300	1.04C	Topsoil Source Test Reports – Geotechnical and Nutrient Analysis	
33	02300	1.04C	Select Borrow Field Moisture/Density (Compaction) Test Reports	As soon as the report is available

Attachment 01330-1: Submittal Summary Table

No.	Specification Section	Specification Sub-Part	Submittal Item	Schedule
34	02370	1.05A	Stormwater Pollution Prevention Plan	At the request of the ENGINEER/DEPARTMENT
35	02370	1.05B	Proposed means and methods for ESC	At the request of the ENGINEER/DEPARTMENT
36	02370	1.05C	Manufacturer's data for all materials	14 days prior to date approval is required
37	02921	1.04A	Topsoil Source Test Reports	14 days prior to date approval is required
38	02921	1.04A	Grass Seed Vendor's Certificate	14 days prior to date approval is required
39	02921	1.04B	Fertilizer Manufacturer's Product Data showing chemical analysis and percent composition	14 days prior to date approval is required
40	02921	1.04C	Hydraulic Seeding Method	At the request of the ENGINEER/DEPARTMENT

Note: The CONTRACTOR is responsible for all submittals indicated in the Contract Documents, whether listed in the Submittal Summary Table or not.

END OF SECTION

SECTION 01410

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

Comply with local, State, and Federal regulations appropriate or applicable to the proposed work.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02370 - Erosion and Sediment Control

1.03 GENERAL REQUIREMENTS

Regulations applicable to remediation activities will include but not necessarily be limited to those promulgated by the following regulating authorities:

A. United States Environmental Protection Agency (USEPA)

1. Clean Air Act (CAA)
2. Clean Water Act (CWA)
3. Toxic Substances Control Act (TSCA)

B. United States Department of Labor (USDOL)

1. Occupational Safety and Health Administration (OSHA)

C. New York State Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Disposal Site Program (State Superfund Program)

1. New York State Department of Environmental Conservation, Department of Environmental Remediation, *Technical Guidance for Site Investigation and Remediation* (DER-10)
2. 6 NYCRR Part 375 Environmental Remediation Programs (SSF, BCP, ERP)
3. 6 NYCRR Part 480 Environmental Regulatory Program Fees
4. 6 NYCRR Part 481 Program Fees-General
5. 6 NYCRR Part 483 Hazardous Waste Program Fees
6. 6 NYCRR Part 750 State Pollutant Discharge Elimination System (SPDES)
7. 6 NYCRR Part 364 Waste Transporter Permits
8. 6 NYCRR Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
9. 6 NYCRR Part 376 Land Disposal Restrictions
10. 6 NYCRR Part 257 Air Quality Standards

E. Niagara County

1. Niagara County Soil and Water Conservation District
2. Niagara County Sewer District

F. City of Lockport

1.04 PERMIT APPLICATION BY CONTRACTOR

Permits that must be applied for by CONTRACTOR and approved by regulating authority prior to commencing associated work.

A. City of Lockport – The following permits are applicable to this project and applications are attached to the end of this section for completion by the CONTRACTOR:
   1. Building Permit Application for Decks/Sheds
   2. Building Permit Application for Fence, Driveway/Parking Lot

B. New York State Department of Environmental Conservation, State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity – In accordance with 6 NYCRR 375, a SPDES permit does not have to be obtained, but the requirements of the permit need to be followed by the CONTRACTOR.

C. General - Other permits as necessary to perform the work as described in the Contract Documents.

1.05 PERMIT APPLICATION BY ENGINEER

A. None.

1.06 SUBMITTALS

A. Copies of all permit applications and permits applied for by the CONTRACTOR.

1.07 ACCESS PERMISSIONS

A. The DEPARTMENT will secure access agreements with the adjacent property owners in order for the CONTRACTOR to conduct the work as described in the Contract Documents.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

CITY OF LOCKPORT
BUILDING INSPECTION DEPARTMENT

ONE LOCKS PLAZA PHONE-439-6754 FAX-439-6605

BUILDING PERMIT APPLICATION FOR DECKS/ SHEDS

Job Location:_____ Date:_____

Owner:_____ Address (if different):_____

Phone:_____ City:_____ Zip:_____

Construction Cost: _____

Contractor(s): _____

_____

Type: ___ Shed ___ Open Deck ___ Covered Deck

Height: _____ Length: _____ Width: _____

Please Attach the Following:

___ Property Survey that is current and accurate
___ Locations of the proposed structures
___ Setback dimensions (front, rear, and all sides)
___ Drawing with lumber sizes, fasteners and footing depth

The Owner/ Applicant agrees to conform to all applicable laws of this jurisdiction, adhere to the plans and specifications affixed hereto and permit Building Department personnel to perform required inspections.

Applicant's Name:(if different than owner)_____(attach letter of agency)
Owner/ Applicant Signature: _____ Date: _____

CITY OF LOCKPORT
BUILDING INSPECTION DEPARTMENT

ONE LOCKS PLAZA PHONE-439-6754 FAX-439-6605

BUILDING PERMIT APPLICATION FOR FENCE, DRIVEWAY/ PARKING LOT

Job Location:_____ Date:_____

Owner:_____ Address (if different):_____

Phone:_____ City:_____ Zip:_____

Construction Cost: _____

Contractor(s): _____

_____

Anticipated Start Date: _____

Driveway (Please Check One):
(Please note any changes in size)
___ New install ___Recover ___ Remove & Replace

Material (Please Check One):

___ Blacktop ___ Concrete ___ Stone

Fence Material (Please Check One**):**

___ Wood ___ Vinyl ___ Other

Height: _____

Please Attach the Following:

___ Property Survey that is current and accurate
___ Locations of the proposed structures

The Owner/ Applicant agrees to conform to all applicable laws of this jurisdiction, adhere to the plans and specifications affixed hereto and permit Building Department personnel to perform required inspections.

Applicant's Name:(if different than owner)_____(attach letter of agency)

Owner/ Applicant Signature: _____ Date: _____

SECTION 01450

CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

This section covers quality control procedures and testing to be completed by the CONTRACTOR during the Work. Prior to commencement of the Work, the CONTRACTOR shall prepare a CONTRACTOR Quality Control (CQC) Plan detailing the procedures to be followed and testing to be completed. Quality control testing shall be executed as required in the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 01770 – Project Closeout Procedures

C. Section 02105 – Chemical Sampling and Analysis

1.03 REFERENCES AND STANDARDS

A. Conform to referenced standards with date of issue current on the date of the bid, except where stated otherwise or referenced differently by code.

1.04 SUBMITTALS

A. Pre-Construction Submittals
CONTRACTOR Quality Control (CQC) Plan shall identify personnel, procedures, instructions, records, and forms to be used in carrying out the requirements of the Work. The CQC Plan shall provide the CONTRACTOR with a means to provide and maintain effective Quality Control for construction, sampling, and testing activities. No work on-site shall be permitted until comments received are adequately addressed by the CONTRACTOR and the CQC Plan is approved by the ENGINEER and the DEPARTMENT.

B. Quality Assurance Project Plan (may be included as a component of the CQC):

1. Submit the following two weeks prior to start of the work:

a. Site-specific Quality Assurance Project Plan (QAPP) prepared in accordance with NYSDEC DER-10.
b. Proposed Project Analytical Laboratory and certifications. Documentation shall be provided that the analytical laboratory is certified for solid and hazardous waste analyses by the New York

State Department of Health Environmental Lab Approval Program (ELAP).

C. Construction Submittals
Weekly CQC Reports, Test Reports, Deficiency Reports, and Project Summaries

1.05 DEFINITIONS

A. Quality Control: Activities undertaken by the CONTRACTOR including observing, measuring, sampling, and testing undertaken by the CONTRACTOR to determine that work performed and/or products/materials provided and installed meet the requirements of the Contract Documents and the quality specified therein.

1.06 QUALITY CONTROL SAMPLING AND TESTING

A. The CONTRACTOR shall notify the ENGINEER and the DEPARTMENT a minimum of 72 hours prior to any quality control sampling and testing activities. The ENGINEER and DEPARTMENT reserve the right to collect duplicate quality control samples.

B. All third party quality control test reports shall be reported/sent directly to the ENGINEER and the DEPARTMENT and shall not be routed through the CONTRACTOR. The CONTRACTOR shall give their subcontracted laboratory permission to send reports directly to the ENGINEER and the DEPARTMENT.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. The quality of all Work shall be the responsibility of the CONTRACTOR.

B. Perform sufficient inspections and tests of all items of work, on a continuing basis, including that of subcontractors, to ensure conformance to applicable specifications and Construction Contract Drawings with respect to the quality of materials, workmanship, construction, and functional performance.

C. Provide qualified personnel, appropriate facilities, instruments, and testing devices necessary for the performance of the quality control function.

D. Controls shall be adequate to cover all construction operations, shall be keyed to the proposed construction sequence, and shall be coordinated by the CONTRACTOR's quality control personnel.

3.02 CONTRACTOR QUALITY CONTROL (CQC) PLAN

A. Prepare and submit a CONTRACTOR Quality Control Plan to the ENGINEER and the DEPARTMENT for approval.

B. Comments or approval from the ENGINEER and DEPARTMENT will be submitted to the CONTRACTOR within 14 calendar days following receipt of the plan. The CONTRACTOR shall adequately respond to comments to the satisfaction of the ENGINEER and the DEPARTMENT within 14 calendar days following receipt of any comments from the ENGINEER and/or the DEPARTMENT.

C. No work on-site shall be permitted until the comments received are adequately addressed by the CONTRACTOR and the CQC Plan is approved by the ENGINEER and the DEPARTMENT.

D. The CQC Plan, at a minimum, shall include the following:

1. A description of the Quality Control Organization, including charts showing lines of internal CONTRACTOR authority, and external CONTRACTOR, subcontractor, and ENGINEER relationships. The Quality Control Organization shall include the names, qualifications, duties, and responsibilities of each person assigned to a quality control function. The Quality Control Organization chart shall identify a CONTRACTOR's Quality Control Manager whose responsibilities and qualifications are described in Sub-Part 3.04 - Contractor Quality Control Organization.
2. Method of performing, documenting, and enforcing quality control operations of both CONTRACTOR and subcontract work including inspection and testing.
3. Inspections as described in the Sub-Part 3.05 – Inspections.
4. Provide a list of analytical or testing laboratories to be used by the CONTRACTOR for testing required by the Specifications with listed test methods to be performed by each laboratory indicated. The analytical or testing laboratories to be used by the CONTRACTOR must be New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP) certified.
5. Protocol describing corrective actions to be taken by the CONTRACTOR with specifically defined feedback systems. The ENGINEER will then decide what further corrective action, if any, shall be taken by the CONTRACTOR. Personnel responsible for initiating and carrying out corrective action shall be indicated in the protocol.

E. Submit Weekly CQC Reports, Test Reports, Deficiency Reports and Project Summaries as required by this Specification.

3.03 NOTIFICATION OF CHANGE

A. After submittal and approval of the CQC Plan, the ENGINEER and DEPARTMENT shall be notified in writing of any proposed changes to the CQC Plan and implement the changes only after the DEPARTMENT's approval.

3.04 CONTRACTOR QUALITY CONTROL ORGANIZATION

A. CQC Manager:

1. Identify an individual, within the CONTRACTOR's organization at the Site who shall be responsible for overall management of the CQC Plan and have the authority to act in all CQC matters for the CONTRACTOR.
2. The CQC Manager for this Contract shall be a qualified construction manager/ENGINEER or comparable individual with a minimum of 2 years of applicable experience, at the Project Manager, Project ENGINEER, Superintendent, or CQC Manager level, whose responsibility is to ensure compliance with the Construction Documents. The CQC Manager shall be independent of the Project Superintendent.
3. The CQC Manager shall be on-site whenever work is in progress so that he/she may be in charge of the CQC Plan for the project.
4. All submittals for approval shall be reviewed and modified or corrected as needed by the CQC Manager or authorized assigns prior to forwarding to the ENGINEER.

3.05 INSPECTIONS

A. The CQC Plan shall include the following inspections and tests:

1. The CONTRACTOR shall perform preparatory inspections prior to beginning each feature of work on any on-site construction conducted by the CONTRACTOR or a subcontractor. Preparatory inspections for the applicable feature of work shall include:

    a. review of submittal requirements and all other Contract requirements with the performance of the work;
    b. check to assure that provisions have been made to provide required field quality control testing;
    c. examine the work area to ascertain that all preliminary work has been completed;
    d. verify all field dimensions and advise the ENGINEER of any discrepancies;
    e. perform a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all required materials and/or equipment are on hand and comply with the Contract requirements.

2. Perform initial inspection as soon as work begins on a representative portion of the particular feature of work, and include examination of the quality of

workmanship as well as review of quality control testing for compliance with the Construction Document requirements.

3. Perform follow-up inspections continuously as any particular feature of work progresses to ensure compliance with Contract requirements, including quality control testing, until completion of that feature of work.

3.06 QUALITY CONTOL TESTING

A. The CONTRACTOR shall be responsible for all required testing, documentation, and corrective measures. The CONTRACTOR shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements.

B. Specific quality control testing requirements including types of tests, frequency of tests, and performance outcomes measured by the tests are indicated in each specification section associated with that component of the work.

3.07 CONSTRUCTION MONITORING

A. Existing conditions assessment - Prior to commencing invasive construction activities including but not limited to installing shoring or excavating, complete an assessment to record conditions of buildings and surrounding infrastructure. Record condition with video or photographs noting existing deficiencies or damage as observed prior to construction. The assessment shall, at a minimum, include the following components:

1. Building facade of residences immediately adjacent to the Work;
2. Foundation walls of residences immediately adjacent to the Work;
3. Doors and windows of residences adjacent to the Work;
4. Roof overhang, fascia, and/or general roof line of residences adjacent to the Work;
5. Pavement and concrete surface treatments of residences adjacent to the Work;
6. Prominent exterior Site features within 50 feet of the limit of work including retaining walls, stairs, , utility poles, fences, specimen trees, etc.; and

B. Maintain continuous vibration monitoring and recording at locations approved by the ENGINEER during the following work:

1. Monitor/record the off-site residential property at a location adjacent to the exterior face of the house during shoring and/or sheeting installation (as required for excavation support), and excavating, backfilling, compacting, and all other activities utilizing heavy construction equipment likely to cause strong vibrations when work within 10 feet of the 320 Willow Street house or deck, is conducted.

3.08 NONCONFORMING WORK

A. If inspections or testing by the CQC Manager or other member of the CQC Organization identify Work as not meeting the required quality standard of the Contract Documents, the work shall be considered nonconforming.

B. If quality assurance inspections or testing performed by the ENGINEER or the DEPARTMENT identify Work as not meeting the required quality standard of the Contract Documents, the work shall be considered nonconforming.

C. Nonconforming work shall be remedied by the CONTRACTOR through corrective action.

D. Nonconforming work shall be reported in the CQC Weekly Report.

3.09 CORRECTIVE ACTION

A. Corrective action of nonconforming work shall take place as soon as possible after identification of the nonconformance.

B. Corrective action plans shall be communicated with the ENGINEER and shall include rework, as necessary along with all associated CQC Plan requirements including inspection and testing.

C. At least 72 hours advance notification shall be provided to the ENGINEER for any additional testing to be performed. The ENGINEER/DEPARTMENT reserves the right to collect duplicate samples for quality assurance testing.

D. The corrective action performed to remedy the nonconforming work shall be reported in the CQC Weekly Report. Descriptions of differences in work means, methods, or testing protocols shall be included.

3.10 ACCEPTANCE OF THE WORK

A. The ENGINEER/DEPARTMENT will accept the Work completed by the CONTRACTOR as meeting the quality requirements for the project as set forth in the Contract Documents.

B. The basis of acceptance shall be inspections and observations by the ENGINEER/DEPARTMENT; reported test results submitted to, reviewed by, and accepted by the ENGINEER; and the reported results of any ENGINEER/DEPARTMENT performed quality assurance testing.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Provide such temporary facilities and controls as the Work may warrant. General locations as depicted on the Construction Drawings may be modified as required by the Contractor upon approval of the Engineer and Department.
2. Required temporary facilities and controls include:

    a. Shelter for crews including sanitary facilities conforming to local codes and OSHA requirements.
    b. Fire protection.
    c. Contractor utility services including water, and electric.
    d. Safety equipment.
    e. Site security fence and barricades.
    f. Soil stockpile areas (see Section 02110 – Waste Removal, Handling, and Storage).
    g. Decontamination pad.
    h. Pumping systems for dewatering and stormwater management.
    i. Construction Water Storage Facility.
    j. Erosion and sediment control (see Section 02370 – Erosion and Sediment Control).

3. Other facilities that may be necessary or provided, depending on the Contractor's approach to the work and the preference of the Contractor, include, but are not limited to:

    a. Yard lighting (if necessary).
    b. Construction warning, protection, and control devices for maintenance and safety of vehicular and pedestrian traffic (if necessary).

4. Completely remove all temporary equipment and materials upon completion of the Work and repair all damage caused by the installation of temporary measures.
5. Make all necessary applications and arrangements for electric power, light, water and other utilities with the property owner and/or tenants. Notify the local electric power company if unusually heavy loads, such as welders, will be connected.

B. Other Requirements:

1. Obtain permits as required by local governmental authorities.
2. Obtain easements, when required, across private property other than that of the Owner for temporary power service.

3. Comply with the latest National Electrical Code.
4. Comply with all local, State, and Federal codes, laws, and regulations.
5. Allow access to and use of facilities provided by the Contractor to the Engineer and Department.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Contractor's facilities shall be of size and content for adequate administration of the Contract, storage of materials required, and provision for personnel shelter.

B. Equipment required for personal safety of workmen shall be furnished in full compliance with specific safety requirements of local, state, and Federal agencies, including OSHA.

C. Traffic signs, barricades, warning lights, and all necessary equipment for the protection of the traveling public shall be furnished and maintained as specified in "Part 6, Temporary Traffic Control" of the Manual on Uniform Traffic Control Devices, 2003 Edition by the Federal Highway Administration.

D. Temporary Fencing: Provide temporary fence panels and gates to separate vehicles and pedestrians from the work area as defined by the limit of work. Comply with ASTM A392-96, Standard Specifications for Zinc-Coated Chain Link Fence.

1. Fence shall be 6-foot high galvanized steel chain link fencing with galvanized steel frame and woven wire mesh fabric.
2. Post stands and ballast for each fence panel shall be of adequate size and weight to adequately support the fence on the ground surface in a stable/secure location throughout the construction period. Posts shall not impact existing pavement.
3. Polypropylene wind/privacy screening with a minimum 85% closed mesh shall be installed on all woven wire mesh fabric.
4. Gates with a minimum 20-foot wide opening shall be installed at locations shown on the Construction Drawings. Gates shall be locked during non-working hours.

E. Concrete Barrier: Shall meet the requirements of Temporary Concrete Barrier as defined by the New York State Department of Transportation (NYSDOT) Standard Sheet No. M519-3R1.

F. Decontamination Pads: Facilities shall be constructed as shown on the Construction Drawings.

1. Sand and 2 inch Crushed Stone materials as described in Section 02300 – Earthwork.
2. Geomembrane shall be minimum 20-mil scrim-reinforced polyethylene equal to Dura Skrim® 20WW by Raven Industries. Panels shall be sized so that no seams are required.
3. Geotextile shall be a minimum 16 ounce per square yard nonwoven geotextile equal to GEOTEX® 1701 by Propex Geosynthetics.

G. Working Pads: Construct of a minimum 20-mil scrim-reinforced polyethylene equal to Dura Skrim® 20WW by Raven Industries. Panels shall be sized so that no seams are required

H. Construction Water Storage Facilities: Provide Frac Tank of adequate size to store liquid waste generated from excavation dewatering pump outs; decontamination facilities; collected stormwater or drain water from stockpile containment areas.

I. Liquid Waste Storage Facilities: Provide Frac Tank or tanker truck of adequate size to collect and store liquid waste generated from underground storage tank pump outs.

I. Water Storage Facilities: If connection to on-site water utility is not permitted, provide clean tank to store non contaminated water supply to be used for decontamination facilities.

J. Stockpile Containment Areas: Provide stockpile containment areas for all demolished and excavated material stored on-site as specified in Section 02300 – Earthwork.

PART 3 - EXECUTION

3.01 PERFORMANCE

A. Field Office, Storage Trailers, or Buildings: Sited in approved locations and properly set up for all anticipated weather conditions.

B. Sanitary Conveniences for Project Personnel:

1. Provide and maintain in sufficient numbers, for the use of all persons employed on the work. Site at suitable locations, screened from public observation, in accordance with State and local ordinances.
2. Rigorously enforce the use of the approved sanitary facilities provided.
3. When no longer required, remove from the Site and properly dispose of the contents.

C. Temporary bypass for sanitary sewer building service shall meet all local sanitary codes and flow capacity requirements.

D. Provide sufficient drinking water for all employees from approved potable sources.

E. Obey and enforce other local sanitary regulations and orders, taking such precautions against infectious diseases as may be deemed necessary.

F. Conduct operations in a manner which, with the use of proper equipment provides maximum safety for workmen and the traveling public.

3.02 DECONTAMINATION PAD

A. Construct to facilitate the cleaning of equipment and trucks prior to leaving the Site. Locate as close to the active work as possible to prevent tracking of contaminated material beyond the limit of the designated Working Pad.

B. Decontamination Pad shall consist of an aggregate (stone/sand) working base, a geomembrane liner, and a collection sump and pumping system as shown on the Construction Drawings.

1. The subgrade surface beneath the liner shall be free of stones, debris, or other objects greater than one half inch in size.

C. Collect and store liquid waste from the sump in a portable storage tank adjacent to the Decontamination Pad.

D. Liquid waste treatment, transportation, and disposal shall occur as described in Section 02110 - Waste Removal, and Handling and Section 02120 - Off-Site Transportation and Disposal.

E. Demolish and properly dispose of the Decontamination Pad off-site in accordance with all applicable regulations upon completion of the project.

3.03 WORKING PAD

A. Construct or lay out a Working Pad for each designated truck loading area as excavation progresses.

B. Queue trucks as space permits on the Working Pad in preparation for loading. Excavated/demolished material shall be loaded on trucks within the limits of the designated Working Pad.

C. Clean the surface of the Working Pad regularly to remove spillage generated during truck loading.

D. Demolish and properly dispose of the Working Pad materials off-site in accordance with all applicable regulations upon completion of demolition and excavation activities.

E. Clean the surface of pavement below the Working Pad at the completion of demolition and excavation activities. Spray or sweep as required to remove all residuals.

F. Alternate to installation of a Working Pad, trucks can be direct clean loaded with the use of polyethylene sheeting draped over the truck during loading. At the completion of loading, the sheeting shall be lifted toward the truck to empty spillage back into the truck bed.

3.04 TEMPORARY EROSION AND SEDIMENTATION CONTROLS

A. Temporary erosion and sedimentation controls shall be located, installed, and maintained as shown on the Construction Drawings and described in Section 02370 - Erosion and Sedimentation Control.

END OF SECTION

SECTION 01560

DUST AND ODOR CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. The CONTRACTOR shall execute the Work by methods that minimize the generation of dust and nuisance odors. The CONTRACTOR shall employ dust control measures to minimize the creation of airborne dust during execution of the Work. At a minimum, standard dust control techniques shall be employed in areas of heavy equipment traffic such as watering down the Site. The dust control measures will be such that, at a minimum, air quality is in compliance with applicable OSHA regulations.

B. The CONTRACTOR shall provide an odor control system to control odors as necessary to address complaints from property tenants and the local community. Odor control agents such as an odor-control foam, misting system, or other method selected by the CONTRACTOR and approved by the ENGINEER or the DEPARTMENT shall be available on-site and shall be applied as needed to control nuisance odors. At a minimum, an odor control foam system shall be available on-site. Other systems may be required as necessary to meet the project performance objectives.

C. The performance objective for odor control will be to control, eliminate, or mask any odors that generate complaints from building tenant, neighboring residents, the public, state or local officials, or the DEPARTMENT.

D. No additional payments will be made due to shutdowns as a result of emissions whether exceeding standards or posing a nuisance. If the initial emission controls are found to be inadequate, the CONTRACTOR shall provide additional measures at no additional cost.

E. Dust and odor control systems shall be implemented as necessary to meet local, state, and/or federal regulations for air emissions and dust and to control nuisance odors.

F. Sufficient volumes of water and/or odor control foam shall be readily available or stored on-site to address continuous application as necessary.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02370 – Erosion and Sediment Control

PART 2 - PRODUCTS

2.01 MATERIALS

A. Water shall be free from oil, acid, and injurious alkali or vegetable matter, and other deleterious materials or contaminants. Water shall not be brackish.

B. Water shall be obtained from a legal off-site location. Pumping of surface water from the Unnamed Tributary and/or Sauquoit Creek for the purpose of dust control shall not be allowed.

C. Odor control foam. Odor control foam shall be a biodegradable, non-flammable, and non-toxic water-based material designed for the control of VOCs, dust, and odor. It shall be capable of being spray applied to form a uniform encapsulating layer between contaminated materials and the environment, suppressing VOCs, dust, odors, and gas.

2.02 EQUIPMENT

A. Equipment for dust and odor control shall include appropriate measures (e.g., heat tape, tank heaters) to prevent freezing or impair operation due to temperatures below freezing.

B. Spray nozzles for water shall be capable of delivering a light spray to coat ground surfaces evenly without generating excessive runoff.

C. Spray nozzles for odor control dispersants or misting systems shall be capable of delivering a fine airborne vapor spray to minimize immediate settling to the ground.

PART 3 - EXECUTION

3.01 SPRINKLING WATER

A. Apply to haul roads or disturbed areas of the Site by approved methods and with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.

B. Disperse through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.

C. Apply water until the surface is wet, but avoid ponding, run off, or muddy conditions.

3.02 PAVEMENT SWEEPING

A. Maintain clean pavement surfaces within the designated work area and Site egress

route. Do not permit construction equipment to track soil outside of the active Exclusion Zone or the limit of work onto public roads.

B. Sweep pavement surfaces as required during construction to prevent migration of soil outside of the limit of work and to prevent the generation of dust.

C. Sweep all paved surfaces within the limit of work and truck ingress/egress routes at the end of construction as a final cleanup task to remove any residual construction debris and soils.

3.03 STOCKPILE MANAGEMENT

A. Maintain on-site stockpiles in a manner that prevents wind-blown dust generation. During active use, provide periodic water sprinkling and during inactive periods, cover stockpiles with weighted tarps.

3.04 TESTING

A. All equipment, if not in regular use, shall be tested as requested by the ENGINEER or the DEPARTMENT.

B. The DEPARTMENT or ENGINEER, at their discretion, may request the CONTRACTOR to test the water being used for dust control and provide analytical results for review.

3.05 DISPOSAL

A. Sweepings collected during pavement sweeping activities shall be managed on-site as waste material to be characterized for off-site disposal during active work.

B. When the waste removal and handling activities on Site are complete, the sweepings shall be properly disposed off-site at a licensed disposal facility.

END OF SECTION

SECTION 01720

FIELD ENGINEERING AND SURVEYING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Established survey control points are available on-site for construction purposes. The CONTRACTOR shall verify locations of survey control points prior to starting work. The CONTRACTOR shall safeguard all survey control points. Should any of these points be damaged or destroyed, the CONTRACTOR shall replace the control point at no cost to the DEPARTMENT. The CONTRACTOR shall assume the entire expense of rectifying work improperly constructed due to failure to maintain and protect such established survey control points.

B. The CONTRACTOR shall be responsible for the layout of the construction and any additional survey control points, grid coordinate locations, lines, grades, and levels necessary for the proper construction and testing of the work required in the Contract Documents. Survey control shall include, but not be limited to, maintaining appropriate slopes, specified thicknesses, specified elevations, and constructed locations as shown on the Construction Contract Drawings.

C. The CONTRACTOR shall employ a surveyor using standard practices accepted in the State of New York as required for the proper execution of the Work, and to document and record the completed Work.

D. The CONTRACTOR is responsible for scheduling surveys to coincide with the construction activities. The surveys shall be performed by a Land Surveyor licensed in the State of New York. If the survey documentation shows improper slopes, elevations, locations, or layer thicknesses, the CONTRACTOR shall correct the deficiency and re-survey the re-work at no additional cost to the DEPARTMENT. Survey documentation may include, but not be limited to:

1. Construction layout.
2. Documentation of as-built quantities required for measurement for payment.
3. Final as-built limit of excavation and documentation test locations.
4. Final as-built topography within the limit of work.
5. Location and elevation of CONTRACTOR established survey control points and/or benchmarks.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01110 – Summary of Work

B. Section 01330 – Submittal Procedures

C. Section 01450 – Contractor Quality Control

1.03 SUBMITTALS

A. On request, submit data demonstrating qualifications of persons providing field engineering and survey services.

B. On request, submit documentation verifying accuracy of survey work.

C. Submit field verification survey results.

1. The CONTRACTOR shall perform a field verification survey prior to the start of construction activities for the purposes of establishing pre-construction Site conditions and verifying the accuracy of the existing conditions depicted on the Construction Contract Drawings.
2. The results of the field verification survey shall be submitted in electronic format compatible with AutoCAD 2008 (or later version) computer software as well as Adobe Acrobat .pdf format. All associated supporting files (e.g., .dwg, .dtm) shall also be submitted. The size of the drawing shall match the Construction Contract Drawings. Drawing requirements include, but are not limited to:

    a. Reference (xreference in AutoCAD) or link the file containing the existing conditions depicted on the Construction Contract Drawings (e.g., V-SP01.dwg) in the file containing the CONTRACTOR's field verification survey data. Do not alter the file containing the existing conditions depicted on the Construction Contract Drawings (e.g., V-SP01.dwg). Do not copy the existing condition survey data into the file containing the field verification survey data.
    b. Show the existing conditions data in gray in the background and show the CONTRACTOR's field verification survey data in black in the foreground.
    c. Clearly show and label a "Limit of Remedial Action Survey" line encompassing the extent of the CONTRACTOR's field verification survey.
    d. The general style and presentation (e.g., scale, naming conventions, and line types) of the field verification survey shall match that of the Construction Contract Drawings. Use a layer naming convention that is readily understood and correlates to the Construction Contract Drawings.
    e. Present the field verification survey drawing on the surveyor's title block, which shall, at a minimum, contain the surveyor's name, address, and telephone number; the project name and address; the date(s) of initial drawing release and subsequent revisions; and in-house approvals.
    f. If the surveyor is different from the CONTRACTOR, document the CONTRACTOR's name, address, and telephone number.
    g. Document the horizontal and vertical datums.
    h. Acknowledge the source(s) of information shown on the drawing and document the date the field instrument survey was performed.

i. Provide a north arrow and graphic scale in feet. Provide a legend as necessary.

j. The CONTRACTOR shall specifically record all discrepancies between the existing conditions depicted on the Construction Contract Drawings and the field verification survey. If no discrepancies are found, provide a statement to this effect. All discrepancies shall be resolved through communication with the DEPARTMENT or the ENGINEER and documented prior to initiation of construction activities affected by discrepancies.

D. As necessary, submit as-built survey data as the work progresses in support of quantity measurements in accordance with Contract Section XII – Measurement for Payment.

E. Submit final as-built drawings.

1. The CONTRACTOR shall perform topographic and location surveys at the completion of construction in support of establishing as-built drawings to be used by the ENGINEER to develop Record Documents. At a minimum, the following final as-built drawings shall be provided by the CONTRACTOR:

   a. As-Built Excavation Plan: final as-built horizontal and vertical excavation limits within the limit of work.

   b. As-Built Final Grading and Site Restoration Plan: final as-built topographic and location survey within the limit of work.

2. The as-built surveys shall be performed and certified (stamped) by a Land Surveyor licensed in the State of New York. As-built excavation limit survey may be completed by the CONTRACTOR if the ENGINEER deems their equipment, methods, and personnel suitably qualified to perform this work.

3. The drawings shall be submitted in electronic format compatible with AutoCAD 2008 (or later version) computer software as well as Adobe Acrobat .pdf format. All associated supporting files (e.g., .dwg, .dtm) shall also be submitted. The size and scale of the drawing shall match the Construction Contract Drawings. As-built drawing requirements include, the following:

   a. Reference (xreference in AutoCAD) or link the file containing the existing conditions from the Construction Contract Drawings or the file containing the field verification survey data into the file containing the CONTRACTOR's as-built survey data for the As-Built Excavation Plan. Do not copy existing conditions (i.e., field verification) survey data into the file containing the as-built (i.e., post-construction) survey data. Use layer control to create an accurate representation of pre-construction and post-construction conditions.

   b. At a minimum, all items listed in Sub-Part 1.01D shall be surveyed and shown on the drawing.

c. Show the existing conditions data in gray in the background and show the CONTRACTOR's as-built survey data in black in the foreground.

d. Clearly show and label a "Limit of Remediation Construction Survey" line encompassing the extent of the CONTRACTOR's as-built survey.

e. The general style and presentation (e.g., scale, naming conventions, and line types) of the as-built survey shall match that of the Construction Contract Drawings. Use a layer naming convention that is readily understood and correlates to the Construction Contract Drawings.

f. Present the as-built survey drawing on the surveyor's title block, which shall, at a minimum, contain the surveyor's name, address, and telephone number; the project name and address; the date(s) of initial drawing release and subsequent revisions; and in-house approvals.

g. If the surveyor is different from the CONTRACTOR, document the CONTRACTOR's name, address, and telephone number.

h. Document the horizontal and vertical datums.

i. Acknowledge the source(s) of information shown on the drawing and document the date the field instrument survey was performed.

j. Provide a north arrow and graphic scale in feet. Provide a legend as necessary.

1.04 FIELD ENGINEERING AND SURVEY REQUIREMENTS

A. Provide field engineering and survey services using appropriate construction practices. Use skilled persons, trained and experienced in the necessary tasks and techniques for the proper execution of the Work. Locate and layout the Work by survey instrumentation and similar appropriate means.

B. The CONTRACTOR shall sufficiently establish the existing ground elevations before earthwork is started.

C. The CONTRACTOR shall perform the layout and shall document completed construction on As-Built Drawings (also called Redlines), including the features listed in Sub-Part 1.01D.

D. Check final excavated elevation during construction to verify that excavation has occurred to the required limit.

E. The CONTRACTOR shall sufficiently survey to verify quantities included in requests for payment as required in Section XII, Measurement for Payment.

F. Vertical and horizontal control shall be sufficient to assure work is constructed within 0.1 foot of proposed fill thickness requirements (or proposed grades as indicated where settlement is not a concern) and location.

G. All surveys information provided by the CONTRACTOR shall be provided in electronic file format compatible with AutoCAD 2008 (or later version) and Adobe Acrobat (.pdf format).

1.05 TECHNICAL REQUIREMENTS OF SURVEY

A. Horizontal ground control shall originate and terminate on New York State Plane North American Datum 1983 (NAD 83). Vertical control shall be tied to North American Vertical Datum 1988 (NAVD 88).

B. Drawing Accuracy - Ninety percent of the elevations determined from the solid-line contours for the topographic survey shall have accuracy with respect to true elevation of one half (1/2) the contour interval (0.25 foot) or better, and the remaining 10 percent of such elevations shall not be in error by more than one contour interval (0.5 foot).

C. Vertical Control: Use existing established benchmarks shown on the Construction Contract Drawings that have been verified by the CONTRACTOR or establish new project benchmark for vertical control.

D. Horizontal Control: Each horizontal control point shall be plotted on the drawings within the coordinate grid in which it should lie to an accuracy of one one-hundredth foot (0.01 foot) of its true position as expressed by the plane coordinates computed for this point.

E. Spot Elevations: Survey shall be constructed to provide an accuracy of 0.04 feet vertically. No shots exceeding 500 feet shall be taken. Ninety percent of all spot elevations placed on the maps shall have an accuracy of at least 0.04 foot, and the remaining 10 percent shall not be in error by more than one-half (1/2) of the contour interval (0.25 foot).

1.06 EXISTING CONDITIONS SURVEY

A. Existing features for the Site are based on:

1. "BOUNDARY SURVEY MAP" FOR PETERS DRY CLEANERS, LOCKPORT, NY, PREPARED BY PRUDENT ENGINEERING, DATED DECEMBER 19, 2013, SCALE 1"=20'.
2. Supplemental field measurements by MACTEC Engineering and Consulting, P.C.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

Not applicable.

END OF SECTION

SECTION 02100

GREEN REMEDIATION PRACTICES

PART 1 – GENERAL

1.01 SUMMARY

A. Work includes, to the extent practicable, special environmental "Green" remediation practices related to reducing waste generation; energy usage; emissions including greenhouse gases (GHGs), nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter and hazardous air pollutants (HAPs); water usage; and land and ecosystem disturbance.

B. The CONTRACTOR shall implement green remediation practices in the performance of the requirements of the Work to maximize to the extent practicable, sustainability, reduce energy and water usage, promote carbon neutrality, promote industrial materials reuse and recycling, and protect and preserve land resources.

C. The CONTRACTOR shall utilize concepts and techniques presented in the New York State Department of Environmental Conservation – (NYSDEC) Program Policy DER-31/Green Remediation, August 11, 2010.

D. The CONTRACTOR shall implement, to the extent practicable, practices and procedures to meet the environmental performance goals of the DEPARTMENT consistent with NYSDEC Program Policy DER-31/Green Remediation. In general, such practices and procedures shall include, but are not limited to:

1. Reducing direct and indirect Green House Gas (GHG) and other emissions;
2. Increasing energy efficiency and minimizing use of non-renewable energy;
3. Conserving and efficiently managing natural resources such as soil, water and habitat;
4. Reducing waste, increasing recycling and increasing reuse of materials;
5. Maximizing the reuse of land and the recycling of on-site materials; and
6. Applying green remediation concepts, such as foregoing energy consuming operations.

E. Specifically, CONTRACTOR shall consider inclusion of the following provisions:

1. Beneficially reuse materials that would otherwise be considered a waste (e.g., crushed clean concrete as base or fill).
2. Use of renewable energy and/or the purchase of renewable energy credits (RECs) or a combination of the two techniques to offset electricity demand at the Site.
3. Reduce vehicle idling. All vehicles, both on and off road (including construction equipment) shall be shut off when not in use for more than 5 minutes, consistent with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition For Heavy Duty Vehicles.
4. Cover soil, as approved by the DEPARTMENT, rather than spraying with water.
5. Establish minimally invasive and well-designed traffic patterns for on-site activities to reduce impacts to land and ecosystems.

F. CONTRACTOR shall be aware of the DEPARTMENT's policy to utilize, as approved by the DEPARTMENT, recycled content materials, locally manufactured materials and low-emitting materials.

G. CONTRACTOR shall ensure, to the extent practicable, that the requirements related to the goals of the DEPARTMENT and as defined in the Contract Documents, are implemented to the fullest extent.

1.02 DEFINITIONS:

A. Green Remediation Definitions

1. Renewable energy sources include solar, wind, geothermal, biomass and biogas.
2. Locally manufactured shall mean manufactured within 150 miles of the work.
3. Recovered materials shall be waste materials and by-products that have been recovered from solid waste, but does not include materials and by-products generated from, and commonly reused within, an original manufacturing process.

1.03 ENVIRONMENTAL GOALS

A. The CONTRACTOR, to the extent practicable, shall:

1. Minimize the amount of waste generated from the site and maximize the use of recycling/reuse facilities for disposal of the waste to the extent practicable and as approved by the DEPARTMENT.
2. Maximize use energy derived from a renewable source.
3. Minimize on and off-site fuel combustion.
4. Minimize use of water.
5. Minimize disturbance to land and ecosystems.

1.04 SUBMITTALS

A. Form "A" - Summary of Green Remediation Metrics:

1. Consistent with NYSDEC Program Policy DER-31/Green Remediation requirements specified in Section 1.1B and Green Remediation Metrics requirements specified in Section 1.2.C of the applicable specifications, the CONTRACTOR shall complete *Form A - Summary of Green Remediation Metrics*, in its entirety and sign the certification as to its accuracy.
2. The CONTRACTOR shall submit properly completed Form A to the DEPARTMENT along with the CONTRACTOR's Application for Payment.

1.05 QUALITY ASSURANCE

A. Environmental Project Management and Coordination:

1. CONTRACTOR shall designate an employee who shall be responsible for implementation of green remediation elements, coordinate work of subcontractors and suppliers; instruct workers relating to environmental issues;

ensure that green remediation metrics are collected, recorded on *Form A - Summary of Green Remediation Metrics* and submitted with the CONTRACTOR's Application for Payment; and oversee Project environmental goals.

PART 2 – PRODUCTS

A. CONTRACTOR shall use environmentally preferable products, where appropriate and as approved by the DEPARTMENT, including, but not limited to:

1. Compact Fluorescent Lights (CFL) or LED
2. Environmentally friendly electronics (e.g., ENERGY STAR)
3. Items composed of recovered materials

PART 3 – EXECUTION

A. The CONTRACTOR shall, to the extent practicable:

1. Set up on- site recycling program for CONTRACTOR generated wastes.
2. Minimize equipment engine idling.
3. Utilize properly sized equipment.
4. Minimize emissions during site work (i.e., replace or retrofit older engines or use newer efficient models).
5. Practice engine maintenance in accordance with manufacturers' standards and properly train operators to run equipment efficiently.
6. Sequence work to minimize double-handling of materials.
7. Provide locally made materials that are composed of recovered materials to the maximum amount practicable.
8. Provide materials that generate least amount of pollution during mining, manufacturing, transport, installation, use and disposal.
9. Maintain office trailer heating and cooling systems at efficient set points.
10. Avoid materials that contain ozone-depleting chemicals (e.g., CFCs or HCFCs) and that emit potentially harmful volatile organic compounds (VOCs).
11. Employ construction practices that minimize the generation of excessive dust and combustion by-products.
12. Minimize use of scarce, irreplaceable and endangered resources.
13. Contain and reuse water on-site, to the extent practicable, as approved by the DEPARTMENT.
14. Reduce impact to land and ecosystems, to the extent practicable.

END OF SECTION

Form A
Summary of Green Remediation Metrics

Site Name: _____ Site Code: _____ Operable Unit: _____
Address: _____ City: _____
State: _____ Zip: _____ County: _____

Reporting Period
Contract Period From: _____To: _____
Reporting Period From: _____To: _____ Is this a Final Report? Yes ☐ No ☐

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____ Company Code: _____

Waste Generation: Quantify the management of waste generated on-site.

	Current Reporting Period (Tons)	Total to Date (Tons)
Total waste generated on-site		
• Remedy generated waste		
• Contractor generated waste		
Of that total amount, provide quantity:		
• Transported off-site to landfills		
• Transported off-site to other disposal facilities		
• Transported off-site for recycling/reuse		
• Reused on-site		

Provide a description of any implemented waste reduction programs appropriate for this project in the space provided on Page 3.

Energy Usage: Quantify the amount of energy used on-site and portion of that voluntarily derived from renewable energy sources.

	Current Reporting Period (KWh)	Total to Date (KWh)
Total electricity usage		
Of that total amount, provide quantity:		
• Derived from renewable source (i.e. solar, wind)		

Provide a description in the space provided on Page 3 of all reported energy usage reduction programs appropriate to this project, including usage of electricity derived from renewable sources.

Emissions: Quantify the distance traveled for delivery of supplies and removal of waste.

	Current Reporting Period (Miles)	Total to Date (Miles)
Off-site mobile fuel combustion		

Provide a description in the space provided on Page 3 of practices such as use of local vendors within 150 miles of the site and on-site stationary fuel usage reduction programs.

Quantify the number of hours that diesel and other equipment with the potential to emit hazardous air pollutants (HAPs) or greenhouse gas (GHG) emissions was operated on-site.

	Current Reporting Period (Hours)	**Total to Date (Hours)**
On-site diesel excavation/construction equipment usage		
Other on-site processes potentially generating emissions		

Provide a description in the space provided on Page 3 of the type of excavation/construction equipment used, rating, emission control devices used and other means to reduce emissions, such as use of biodiesel. Also, include a description of other onsite processes that may result in emissions of HAPs or GHG emissions and any emission control devices that are utilized to reduce emissions.

Water Usage: Quantify the volume of water used on-site from difference sources

	Current Reporting Period (Gallons)	**Total to Date (Gallons)**
Total quantity of water used on-site		
Of that total amount, provide the quantity obtained from:		
• Public potable water supply usage		
• Surface water usage		
• On-site groundwater usage		
• Reclaimed water usage		
• Collected or diverted storm water usage		

Provide a description in the space provided on Page 3 of any reported water usage reduction programs appropriate for this project.

Land and Ecosystem: Provide a description of the amount of land and/or ecosystems disturbed construction and the area of land and/or ecosystems restored to a natural condition.

	Current Reporting Period (Acres)	**Total to Date (Acres)**
Land Disturbed		
Land Restored		

Provide a description of the amount of land and/or ecosystems remediated.

	Current Reporting Period (Acres)	**Total to Date (Acres)**
Total area of land impacted by contamination		
Of the total acres provide the:		
Area of Land Remediated		

Other: *Provide a description in the space provided on page 3 of any other green remediation practices performed during the project.*

Description of green remediation programs reported above (Attach additional sheet if needed) **Waste Generation:**
Energy Usage:
Emissions:
Water Usage:
Land and Ecosystem:
Other:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this application. _____ _____ **Date** **Contractor**

SECTION 02105

CHEMICAL SAMPLING AND ANALYSIS

PART 1 – GENERAL

1.01 DESCRIPTION

A. CONTRACTOR shall provide all necessary personnel, equipment, materials, and subcontracting required to perform chemical sampling and analysis associated with the remedial construction at the 316 Willow Street Inactive Hazardous Waste Site in Lockport, New York. The sampling and analyses shall be conducted for:

1. Off-Site Disposal

a. Sampling and analysis of contaminated soil from the Site for waste characterization
b. Sampling and analysis of underground storage tank contents for waste characterization
c. Sampling and analysis of construction water to be discharged or disposed off-site.

2. On-Site Remediation and Use

a. Sampling and analysis of imported materials for borrow source testing.
b. Coordinating, sampling, and shipping documentation samples to TestAmerica for analysis paid for by the DEPARTMENT under separate contract.

B. TestAmerica, as a standby contractor to the DEPARTMENT, shall provide all necessary personnel, equipment, materials, and subcontracting required to perform chemical analysis associated with the remedial construction at the 316 Willow Street Inactive Hazardous Waste Site in Lockport, New York. The analyses shall be conducted for:

1. Documentation samples collected by the CONTRACTOR at the limit of excavation (horizontal and vertical) identified on the Construction Contract Drawings.

C. The sampling and analysis shall be conducted in accordance with United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (the DEPARTMENT) standards and requirements for environmental sampling and analysis.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 01450 – Contractor Quality Control

C. Section 02110 – Waste Removal, Handling, and Storage

D. Section 02120 – Off-Site Transportation and Disposal

E. Section 02245 – Construction Water Management

F. Section 02300 – Earthwork

1.03 REFERENCES

A. New York State Department of Environmental Conservation "Analytical Services Protocol." (NYSDEC ASP) June 2000 - revised July 2005.

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

C. Guidance for the Development of Data Usability Reports; NYSDEC Division of Environmental Remediation; Appendix 2B; DER-10; May 3, 2010.

1.04 SUBMITTALS

A. Sampling and Analysis Reports:

1. Submit the following reports:

a. Field sampling data records including copies of completed field sheets, chain-of-custodies, and field log book entries;
b. Laboratory Data Deliverable, including electronic and hard-copy data deliverables;
c. Data Usability Summary Report (DUSR).

B. Sample Locations:

1. Submit an excel spreadsheet containing the compiled surveyed locations and elevations of each documentation sample. Provide northings, eastings, and elevations..

C. Additional submittal requirements are described in Section 01330 – Submittal Procedures.

1.05 DEFINITIONS

A. Composite Sample: a combination of three (3) to five (5) discrete samples collected at random locations and homogenized (mixed) into a single sample for the purpose of analytical testing.

B. Discrete Sample: a grab sample taken at a single location for the purpose of analytical testing.

C. Documentation Sample: a sample taken after remedial action is complete to document the level of contamination remaining. For a final delineation sample, the analysis must be by an ELAP-accredited laboratory (as defined by NYSDEC DER-10).

D. Electronic Data Deliverable (EDD): a standardized format required for confirmation sample analytical data submitted. Data must be formatted to meet the guidelines specified by the DEPARTMENT. Requirements are provided at the link provided - http://www.dec.ny.gov/chemical/62440.html.

E. Data Usability Summary Report (DUSR): a document that provides a thorough evaluation of the analytical data to determine whether or not the data, as presented, meets the Site/project specific criteria for data quality and use (as defined by NYSDEC DER-10).

F. Refer to Section 02110 – Waste Removal, Handling, and Storage for additional definitions of waste materials.

PART 2 - PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 HEALTH AND SAFETY

A. Field personnel will be required to utilize the personnel protection as defined in the Contractor's Site-Specific Health and Safety Plan (HASP).

B. CONTRACTOR personnel will be required to review the Site or task-specific HASP prepared for this project and acknowledge that they have done so before initiating work.

3.02 WASTE CHARACTERIZATION SAMPLE COLLECTION

A. Waste characterization samples for off-site waste disposal include:

1. Representative samples of contaminated soil and solid waste material removed from within the excavation limit.
2. Contents of underground storage tanks (liquid or solid).
3. Construction water.

Definitions of waste types are include in Section 02110 – Waste Removal, Handling, and Storage.

B. Waste characterization samples may be collected from stockpiled excavated material or from test pits/borings completed prior to excavation.

C. Composite and discrete samples shall be collected at frequencies consistent with the requirements of the approved Treatment, Storage or Disposal Facility (TSDF).

D. Discrete samples shall be collected using manual methods, such a hand auger, trowel, or spoon to obtain the necessary volume of material for each sample.

E. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

F. Turn-around time for laboratory analytical results shall be coordinated with allowable on-site storage and staging space, but is generally requested to be 48 hours (construction water is requested to be 24 hours).

3.03 DOCUMENTATION SOIL SAMPLE COLLECTION

A. Documentation soil samples shall be collected by the CONTRACTOR from the bottom six (6) inches of the exposed sidewall and bottom surface of the contaminated soil excavation.

B. Discrete samples shall be collected at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 02105-1. Other sampling frequencies can be proposed and implemented upon DEPARTMENT approval.

C. Samples shall be collected by using manual methods, such as a hand auger, trowel, or spoon to obtain the necessary volume of soil for each discrete sample.

D. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory for documentation samples, TestAmerica.

E. CONTRACTOR shall request sample containers from TestAmerica and ship according to their direction.

F. Turn-around time for laboratory analytical results shall be maximum 48-hours.

3.04 IMPORTED BORROW SOURCE SOIL SAMPLE COLLECTION

A. Imported borrow source soil samples shall be collected from the borrow source (off-site borrow pit bank or stockpile) prior to delivery of the material to the Site for incorporation into the Work as part of the remedial construction.

B. Imported materials with a gradation of 10 percent or less by weight passing the number 80 sieve as determined by ASTM D 422 can be imported without chemical sampling and analysis consistent with NYSDEC DER-10 Paragraph 5.4(e)(5).

C. Discrete samples shall be collected at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 02105-1, as applicable, based on estimated volume of material to be imported. At a minimum, one sample shall be collected per each borrow source.

D. Discrete samples shall be collected using manual methods, such as a hand auger, trowel, or spoon to obtain the necessary volume of soil for each sample.

E. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

F. Turn-around time for laboratory analytical results shall be coordinated with the material use requirements for the project.

G. The ENGINEER/DEPARTMENT may request access to, and observation of, off-site borrow source sample collection. The ENGINEER/DEPARTMENT reserves the right to sample and test material delivered to Site for quality assurance purposes.

3.05 CONSTRUCTION WATER SAMPLE COLLECTION

A. Construction water as defined in Section 02110 – Waste Removal, Handling, and Storage generated during execution of the Work shall be containerized on-site in approved portable storage facilities not exceeding 25,000 gallons each (i.e. Frac Tanks).

B. Discrete samples shall be collected using manual methods from each tank at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 02105-1.

C. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

D. Turn-around time for laboratory analytical results shall be 24-hours.

3.06 LABORATORY ANALYSIS

The United States Environmental Protection Agency (USEPA), Office of Solid Waste (OSW) publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* specifies the analytical test methods in compliance with the Resource Conservation and Recovery Act (RCRA) regulations.

A. Non-Hazardous soil samples for waste characterization shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the following:

1. The testing required by the selected licensed treatment, storage, and/or disposal facility, Modern Disposal Services, Model City, New York.

B. Hazardous soil samples for waste characterization shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the following:

1. TCL VOCs (Total Analysis)
2. TCLP Benzene and Lead
3. Ignitability (flashpoint)

4. Any additional contaminant required by the selected licensed treatment, storage, and/or disposal facility, Chemical Waste Management Chemical Services, Model City, New York.

C. Soil documentation samples after excavation and removal of contaminated soil shall be analyzed by TestAmerica in accordance with NYSDEC ASP for the following:

1. TAL VOCs using USEPA Method 8260
2. TAL SVOCs using USEPA Method 8270C.

D. Imported soil borrow source samples shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the following:

1. TAL metals using USEPA Method 6010B.
2. Mercury using USEPA Method 7471B.
3. Total Cyanide using USEPA Method 9010C.
4. Chromium (hexavalent) using USEPA Method 7199.
5. TAL Pesticides using USEPA Method 8081
6. 2,4,5-TP Acid (Silvex) using USEPA Method 8151A.
7. TAL PCBs using Method 8082, in accordance with 40 CFR §761.292.
8. TAL SVOCs using USEPA Method 8270C.
9. TAL VOCs using USEPA Method 5035A/8260B.

E. Construction water samples shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the constituents required by the designated disposal facility or disposal scenario (i.e. discharging to the Lockport Wastewater Treatment Plant). The startup testing of the first treated batch of construction water shall be tested for the following:

1. Purgeable Organics by EPA Test Method 624.
2. pH by Standard Test Method SM 4500-H+ B.
3. Oil and Grease by EPA Test Method 1664A.

3.07 REPORTING

A. TestAmerica shall prepare a Data Usability Summary Report(s) (DUSR) following the "Guidance for Data Deliverables and the Development of Data Usability Reports" provided in Appendix 2B of the NYSDEC DER-10 and included as Attachment 02105-2. The DUSR shall be prepared for documentation soil samples specified in Sub-Part 3.03.

B. TestAmerica shall deliver to the DEPARTMENT documentation soil sample analytical reports in an electronic data deliverable (EDD) format that complies with the DEPARTMENT's Electronic Document Standards (EDS), or as otherwise directed by the DEPARTMENT, following Section 1.15, *Electronic Submissions*, of the NYSDEC DER-10 as summarized below:

1. All data generated shall be submitted in an electronic data deliverable (EDD) that complies with the DEPARTMENT's Electronic Data Warehouse Standards (EDWS) or as otherwise directed by the DEPARTMENT.

2. Additional information relative to the EDS, EDD and EDWS is available on the NYSDEC website.

C. Laboratory analyses for documentation soil samples shall include Category B deliverables as defined in the NYSDEC ASP.

3.11 ANALYTICAL TEST RESULT EVALUATION

A. Waste Characterization soil sample analytical results shall be compared to the allowable limits for waste acceptance specific to the permitted treatment, storage, and/or disposal facility designated to receive the waste.

B. Documentation soil sample analytical results shall be compared to the Unrestricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(a) and included as Attachment 02105-3.

C. Borrow source soil sample analytical results shall be compared to the Unrestricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(a) and included as Attachment 02105-3.

D. Construction water analytical results shall be compared to one of the following criteria:

1. Discharge limits required by the Lockport Wastewater Treatment Plant (WWTP); or
2. The allowable limits for waste acceptance specific to the permitted treatment, storage, and/or disposal facility designated to receive the waste

3.12 ACCEPTANCE OF ANALYTICAL RESULTS AND CORRESPONDING ACTION

A. The ENGINEER/DEPARTMENT will review the analytical results and the associated DUSR submitted and based on the information, indicate approval and/or provide direction to the CONTRACTOR.

B. Waste characterization analytical results require the review and approval of the DEPARTMENT/ENGINEER and the designated off-site treatment, storage, and/or disposal facility. Once approval has been granted and acceptance of the waste has been confirmed, the soil may be transported off-site for disposal in accordance with Section 02120 – Off-Site Transportation and Disposal.

C. Documentation sample analytical results reporting contaminant concentration values less than each of the SCOs verifies that complete removal of contaminated soil has been achieved. If any one of the results is greater than or equal to a SCO, additional contamination remains on-site and additional monitoring and possible future remediation under separate contract will be required.

D. Borrow source sample analytical results meeting the required SCOs is accepted for remedial construction use and may be imported and incorporated into the Work. Samples not meeting the required SCOs, indicates that the material is impacted and requires a restricted use. Imported materials requiring a restricted use will be rejected by the ENGINEER/DEPARTMENT. The CONTRACTOR shall identify a new source and complete new borrow source testing to qualify the material for project use.

E. Construction water sample analytical results reporting concentrations of pollutants less than the discharge limits of the Lockport WWTP may be discharged to the identified off-site sanitary sewer manhole. Alternately, construction water may be disposed off-site at a licensed treatment, storage, or disposal facility.

3.13 DISPOSAL OF WORK DERIVED WASTES

A. Disposable sampling equipment and personnel protective equipment (PPE) associated with sample collection shall be classified as contaminated solid waste and handled as described in Section 02110 – Waste Removal, Handling, and Storage and Section 02120 – Off-Site Transportation and Disposal.

3.14 DECONTAMINATION

A. Equipment and tools will be decontaminated as required.

END OF SECTION

Attachment 02105-1

Chemical Sampling and Analysis Summary Table

Matrix	Sample Frequency	QA/QC Frequency	Sample Type	Turn Around Time[2,3]	Analytical Method
WASTE CHARACTERIZATION SAMPLE COLLECTION[1]					
Contaminated Soil	Per TSDF	Per TSDF	Composite	48 hours[4]	Lab analysis for constituents required by the designated TSDF.
Contents of USTs	One per tank per matrix (liquid and/or solid)	Per TSDF	Composite	48 hours[4]	Lab analysis for constituents required by the designated TSDF.
Construction Water[5]	Per TSDF for off-site disposal, or one per off-site discharge to the Lockport WWTP	Dup/MS/MSD One per 20 samples	Discrete	24 hours	Lab analysis for constituents required by the designated TSDF for off-site disposal or the Lockport WWTP to verify discharge limits for off-site discharge.
DOCUMENTATION SOIL SAMPLE COLLECTION					
Soil	One (1) sample per 30 linear feet of sidewall; one (1) sample per 900 square feet of bottom area.	Dup/MS/MSD One per 20 samples	Discrete	24 hours	TAL VOCs-5035A/8260B, TAL SVOCs-8270C
IMPORTED BORROW SOURCE SOIL SAMPLE COLLECTION[1]					
Soil	One per 2,000 cy	Dup/MS/MSD One per 20 samples	Composite	Shall be coordinated with the material use requirements for the project.	TAL Metals-6010B, Mercury-7471B, Total Cyanide-9010C, Chromium (+6)-7199, TAL Pesticides-8081, 2,4,5-TP Acid (Silvex)-8151A, TAL PCBs-8082, TAL SVOCs-8270C, TAL VOCs-5035A/8260B. Imported materials with a gradation of 10 percent or less by weight passing the number 80 sieve as determined by ASTM D 422 can be imported without chemical sampling and analysis consistent with NYSDEC DER-10 Paragraph 5.4(e)(5).

Notes:

1. Discrete and composite samples shall be collected for analytical testing defined by the receiving treatment, storage and/or disposal facility (TSDF) to establish a waste profile that satisfies the permit/license requirements of the TSDF. Site characterization data compiled during previous completed site investigations may be submitted to the TSDF to meet some or all of the facility waste profile testing requirements.
2. Standard level of reporting shall consist of a summary of laboratory results, laboratory QA/QC results, and a copy of the chain-of custody submitted to the laboratory with the samples.
3. Turn-Around-Time is the amount of time between submittal of samples to the analytical laboratory and receipt of analytical results.
4. TAT shall be coordinated with on-site waste handling and storage limitations.
5. Construction Water samples should be identified as waste characterization samples for any quantities disposed off-site at a TSDF. For Construction Water treated and discharged off-site, the sample should be identified as discharge limit/confirmation samples.

Abbreviations: cm, centimeter; cy, cubic yard; DER, Division of Environmental Remediation; Dup, duplicates; gal, gallon; MS, matrix spike; MSD, matrix spike duplicate; NYSDEC, New York State Department of Environmental Conservation; SVOC, semi-volatile organic compound; SW, solid waste; TAL, target analyte list; USEPA, United States Environmental Protection Agency; WWTP, wastewater treatment plant.

Appendix 2B
New York State Department of Environmental Conservation "Technical Guidance for Site Investigation and Remediation"; DER-10; May 3, 2010

Appendix 2B
Guidance for Data Deliverables and the Development of Data Usability Summary Reports

1.0 Data Deliverables

(a) DEC Analytical Services Protocol Category A Data Deliverables:

1. A Category A Data Deliverable as described in the most current DEC Analytical Services Protocol (ASP) includes:

i. a Sample Delivery Group Narrative;

ii. contract Lab Sample Information sheets;

iii. DEC Data Package Summary Forms;

iv. chain-of-custody forms; and,

v. test analyses results (including tentatively identified compounds for analysis of volatile and semi-volatile organic compounds)

2. For a DEC Category A Data Deliverable, a data applicability report may be requested, in which case it will be prepared, to the extent possible, in accordance with the DUSR guidance detailed below.

(b) DEC Analytical Services Protocol Category B Data Deliverables

1. A Category B Data Deliverable is includes the information provided for the Category A Data Deliverable, identified in subdivision (a) above, plus related QA/QC information and documentation consisting of:

i. calibration standards;

ii. surrogate recoveries;

iii. blank results;

iv. spike recoveries;

v. duplicate results;

vi. confirmation (lab check/QC) samples;

vii. internal standard area and retention time summary;

viii. chromatograms;

ix. raw data files; and

x. other specific information as described in the most current DEC ASP.

2. A DEC Category B Data Deliverable is required for the development of a Data Usability Summary Report (DUSR).

2.0 Data Usability Summary Reports (DUSRs)

(a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

1. The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

i. a DEC ASP Category B Data Deliverable; or

ii. the *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation.*

2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

(b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.

(c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?

2. Have all holding times been met?

3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

(d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

Attachment 02105-3

Unrestricted Use Soil Cleanup Objectives [6 NYCRR Part 375 Table 375-6.8(a)]

375-6.8 Soil cleanup objective tables.

(a) Unrestricted use soil cleanup objectives.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	350 [c]
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1 [b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		27
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Total Mercury		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9[c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 [b]
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	0.005 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
delta-BHC [g]	319-86-8	0.04
Dibenzofuran [f]	132-64-9	7
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	2.4
Endosulfan II [d, f]	33213-65-9	2.4
Endosulfan sulfate [d, f]	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
Acenaphthene	83-32-9	20
Acenapthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]
Benzo(g,h,i)perylene [f]	191-24-2	100
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Fluoranthene [f]	206-44-0	100 [a]
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	100
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	100
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.33
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.25
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 [b]
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	12
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33 [b]
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether [f]	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene [f]	103-65-1	3.9
sec-Butylbenzene [f]	135-98-8	11
tert-Butylbenzene [f]	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	3.6
1,3,5-Trimethylbenzene[f]	108-67-8	8.4
Vinyl chloride[f]	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

SECTION 02110

WASTE REMOVAL, HANDLING, AND STORAGE

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes a description of responsibilities and project requirements for on-site management of wastes including removal, handling, and storage. For the 316 Willow Street Inactive Hazardous Waste Site, these materials and wastes are identified as the following:

1. Land Clearing Debris (See Section 02231 – Clearing and Grubbing)
2. Construction and Demolition Debris (C&D Debris, See Section 02221 – Select Site Demolition)
3. Hazardous Waste (soil)
4. Non-Hazardous Waste (soil)
5. Construction Water (See Section 02245 – Construction Water Management)
6. Underground Storage Tank Liquid and Solid Wastes
7. Site Refuse

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01500 – Temporary Facilities and Controls

B. Section 02105 – Chemical Sampling and Analysis

C. Section 02120 – Off-Site Transportation and Disposal

D. Section 02221 – Select Site Demolition

E. Section 02231 – Clearing and Grubbing

F. Section 02240 – Dewatering

G. Section 02245 – Construction Water Management

H. Section 02300 – Earthwork

1.03 SUBMITTALS

A. Manufacturer’s data for all products including geomembrane liner and cover for soil/sediment stockpile containment areas.

1.04 DEFINITIONS

A. Land Clearing Debris: refer to Section 02231 – Clearing and Grubbing for definition.

B. Solid Waste: typical municipal household and/or commercial/ industrial waste in solid form and not classified as or hazardous waste, including rubbish/trash, garbage, other miscellaneous discarded material/debris.

C. Construction and Demolition (C&D) Debris: Uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to bricks, concrete and other masonry materials, soil, rock, wood (including painted, treated and coated wood and wood products), land clearing debris (except grubbings), wall coverings, plaster, drywall, plumbing fixtures, non-asbestos insulation, roofing shingles and other roof coverings, asphaltic pavement, glass, plastics that are not sealed in a manner that conceals other wastes, empty buckets ten gallons or less in size and having no more than one inch of residue remaining on the bottom, electrical wiring and components containing no hazardous liquids, and pipe and metals that are incidental to any of the above.

D. Construction Water: Wastes in liquid form collected during construction that may be generated from dewatering activities, decontamination activities, and/or stormwater runoff that has contacted contaminated soil/sediment and/or other materials.

E. Chemical Liquid Wastes: Chemicals in liquid form found inside or in proximity to underground storage tanks (USTs) and/or damaged/leaking buried drums uncovered during excavation.

F. Sanitary Wastes: Wastes characterized as sanitary sewage. Refer to Section 01500 – Temporary Facilities and Controls.

G. Site Refuse: Typical municipal residential and/or commercial/ industrial waste in solid form and not classified as Remediation Waste, including rubbish/trash, garbage, and other miscellaneous discarded material/debris, Includes waste generated during the course of remedial action construction from Site workers, equipment, temporary facilities and controls, and/or imported materials.

H. Non-Hazardous Waste: Soil impacted with semi-volatile organic compounds and/or volatile organic compounds at concentrations at or below the “contained-in” criteria outlined in the Technical and Administrative Guidance Memorandum (TAGM) 3028 and approved by the New York State of Environmental Conservation.

I. Hazardous Waste: Soil impacted with semi-volatile organic compounds and/or volatile organic compounds at concentrations above being classified as hazardous in accordance the Resource Conservation and Recovery Act (RCRA).

J. Contaminated Materials: Waste types requiring special handling including land clearing debris – grubbings; non-hazardous waste; hazardous waste; liquid or solid waste contents of the USTs; and construction water; Other materials in direct contact with these waste types are also classified as contaminated.

K. Clean: Work or areas where direct contact with contaminated material does not occur. Clean areas include areas where remediation is not required as determined by remedial investigation testing; areas where remediation has been completed as verified by testing, and areas where separation between clean and impacted has been maintained with an engineered control.

L. Impacted: Work or areas where direct contact with contaminated materials does occur.

M. Engineered Control: A physical barrier or method employed by the CONTRACTOR to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination or eliminate potential exposure pathways to contamination. Examples may include clean temporary access roads, stockpile containment areas, and tarps.

1.05 WASTE CONTAINERS

A. The CONTRACTOR shall provide:

1. Trucks or other equipment as required for on-site management and handling of all waste types in a manner that minimizes comingling and cross contamination.
2. Appropriate containers and/or trucks for the off-site transportation disposal/recycling of all wastes.
4. Portable, temporary storage tanks (e.g. Frac tanks.) for the storage/treatment of collected construction water.
5. Containers (e.g., roll-off containers or dumpsters) for Site refuse collected during the course of the project and during final Site cleanup activities.
6. Plastic bags for disposable personnel protection equipment. Plastic bags shall have a minimum thickness of six (6) mils.

1.06 HEALTH AND SAFETY

A. Waste shall be removed, handled, and stored in consideration of worker and environment health and safety.

B. The CONTRACTOR shall follow their approved Site specific Health and Safety Plan. Monitor Site conditions for changes and modify personnel protective equipment (PPE) when action levels have been reached.

C. The CONTRACTOR shall conduct work including removing, handling, and storing wastes in a manner that is protective of the environment.

1.07 WASTE REMOVAL

A. Locate and retain excavated soil away from top edges of the excavation. All temporary/daily stockpiles shall be maintained a sufficient distance from the excavation to prevent loading of the slope and to provide stability.

B. Provide excavation shoring and bracing where required as described in Section 02250 – Sheeting (Shoring and Bracing).

C. Dewater excavations to maintain stability as described in Section 02240 – Dewatering.

D. Divert stormwater runoff from entering active waste removal areas.

1.08 WASTE HANDLING

A. Direct load waste removed from excavations to roll-off containers or trucks to the extent practical.

B. Segregate waste types as defined herein. Establish means and methods to prevent the comingling of waste types.

C. Minimize the generation of additional waste by comingling or contacting waste materials with other uncontaminated Site media (soil, sediment, water).

D. Provide temporary on-site access roads, as required, within the Exclusion Zone to maintain separation between clean waste handling activities and contaminated materials.

E. Equipment and personnel in direct contact with waste during waste handling activities shall be decontaminated prior to exiting the Exclusion Zone.

F. Waste handling activities are classified as clean if contaminated materials are confined in secure containers where spillage, leakage, or direct contact with equipment and personnel is not required.

1. Waste transported in a truck, roll-off container, or frac tank over clean temporary access roads within the Exclusion Zone meets this criteria.

G. Waste handling activities are classified as impacted if the contaminated materials are transported in an unsecured manner where direct contact with equipment and personnel occurs.

1. Contaminated materials transported by front end loader, excavator, or bulldozer within the Exclusion Zone meets this criterion.
2. Waste confined in a secure container but transported within the Exclusion Zone outside of designated clean areas meets this criterion.

H. Vehicles, equipment, and personnel involved in impacted waste handling activities shall be decontaminated prior to exiting the Exclusion Zone.

1.09 ON-SITE WASTE MANAGEMENT

A. The CONTRACTOR shall be responsible for proper on-site management of wastes generated in compliance with all Federal, State and local regulations. Management shall include removal, handling, segregating, testing, and storing, as required, for the wastes listed in Sub-Part 1.01A of this Section.

1. Land Clearing Debris: manage and store as described in Section 02231 – Clearing and Grubbing.
2. C&D Waste: manage and store as described in Section 02221 – Select Site Demolition.
3. Non-Hazardous Waste: manage and store as described in this section.
4. Hazardous Waste: manage and store as described in this section.
5. Construction Water: manage and store as described in Section 02245 – Construction Water Management.
6. Liquid and Solid contents of the USTs: manage and store as described in this section.
8. Sanitary Wastes: manage as described in Section 01500 – Temporary Facilities and Controls.
9. Site Refuse: store in an on-site container that is removed or emptied periodically to provide available secure storage capacity throughout construction.

B. The CONTRACTOR shall be responsible for movement of the containers, trucks, etc. into positions required for proper loading and management of wastes.

C. Load all waste containers, trucks, etc. with all removed or collected wastes.

D. Manage wastes to limit on-site stockpiling of waste materials.

E. The CONTRACTOR shall not load waste containers, trucks, etc. with non-contaminated materials prior to inspection and determination by the ENGINEER that decontamination of the waste containers has been achieved.

F. The CONTRACTOR shall not load hazardous waste containers, trucks, etc. with other waste materials prior to inspection and determination by the ENGINEER that decontamination of the waste containers has been achieved.

G. Coordinate the schedule for delivery and pick-up of supplied waste containers. Manage the movement and storage of containers within the Site to allow the progress of the Work.

H. Disposal of waste shall occur in accordance with Section 02120 – Off-Site Transportation and Disposal.

1.10 ON-SITE WASTE STORAGE

A. The CONTRACTOR shall store/stockpile excavated materials within the Exclusion Zone limit as delineated on the Construction Contract Drawings or as agreed upon

with the ENGINEER. Designated separate storage/stockpile areas/methods shall be established, at a minimum for the following:

1. C&D Waste.
2. Hazardous Waste.
2. Non-Hazardous Waste.
3. Liquid and Solid Waste contents of the USTs

B. Contaminated soil removed from the excavation but unable to be direct loaded shall be transported directly to a designated storage/stockpile area until loading for off-site disposal is possible.

C. The CONTRACTOR shall place, grade, and shape stockpiles to provide for proper drainage. Furthermore, stockpiles shall incorporate appropriate erosion and sedimentation controls in accordance with Section 02370 - Erosion and Sedimentation Control, to prevent the off-site migration of sediments.

D. Storage of Contaminated Soil:

1. Stockpiles of Contaminated Soil/Material shall be constructed to isolate contaminated material from the environment. The maximum stockpile size shall be 500 cubic yards. Stockpiles shall be constructed to include:

    a. A chemically resistant geomembrane liner. Non-reinforced geomembrane liners shall have a minimum thickness of 20 mils. Scrim reinforced geomembrane liners shall have a minimum weight of 40 lbs. per 1000 square feet. The ground surface on which the geomembrane is to be placed shall be free of rocks greater than 0.5 inches in diameter and any other object which could damage the membrane.
    b. Geomembrane cover to prevent precipitation from entering the stockpile. Non-reinforced geomembrane covers shall have a minimum thickness of 10 mils. Scrim reinforced geomembrane covers shall have a minimum weight of 26 lbs. per 1,000 square feet. The cover material shall be anchored to prevent it from being removed by wind.
    c. Berms surrounding the stockpile, a minimum of 12 inches in height. Vehicle access points shall also be bermed.
    d. Storage and removal of liquid which collects in the stockpile shall be in accordance with Section 02245 – Construction Water Management.
    e. Inspection of the stockpile areas will be conducted on a weekly basis (at a minimum), or following a significant precipitation event and/or as requested by the ENGINEER.

2. Roll-Off Units:

    a. Water-tight roll-off units may be used to temporarily store separately C&D Debris; Non-Hazardous Waste, Hazardous Waste; and Site Refuse.

b. An impermeable cover shall be placed over the units to prevent precipitation from contacting the stored material.
c. The units shall be located within the limit of work as delineated on the Construction Contract Drawings or as directed by the ENGINEER.
d. Liquid which collects inside the units shall be removed and stored in accordance with Section 02245 – Construction Water Management.

3. Liquid Storage

a. Liquid collected from excavations and stockpiles classified as construction water shall be conveyed to the on-site construction water treatment facility for pre-treatment prior to disposal.
b. Liquid storage containers included in the treatment system shall be water-tight.

E. Cover waste stockpiles with plastic sheeting and anchoring system to prevent stormwater runoff from contacting the waste.

1.11 WASTE CHARACTERIZATION SAMPLING AND TESTING

A. Testing shall not be required for the following types of wastes:

1. Land Clearing Debris - Clearing Debris
2. C&D Debris
3. Sanitary Waste
4. Refuse

B. The CONTRACTOR shall be responsible for the sample collection and laboratory testing of the following types of wastes, including but not limited to:

1. Non-Hazardous Waste
2. Hazardous Waste
3. Liquid/Solid Contents of Underground Storage Tanks
4. Construction Water

C. Collect samples and perform testing in accordance with Section 02105 – Chemical Sampling and Analysis, the designated off-site TSDF, and the ENGINEER.

D. Laboratory testing of wastes shall be performed by a certified laboratory as required by the selected Treatment, Storage and Disposal Facility (TSDF):

1. Laboratory reports shall be prepared by the subcontracted laboratory to include all requirements of the DEPARTMENT.
2. All laboratory test methods and frequencies shall be in accordance with the DEPARTMENT requirements.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Geomembrane Liner as described in Subpart 1.10C.1.

B. Geomembrane Cover as described in Subpart 1.10C.1.

PART 3 – EXECUTION

Not Applicable

END OF SECTION

SECTION 02120

OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes a description of requirements and responsibilities for proper transportation and disposal of waste materials removed and identified for off-site disposal including the following materials:

1. Land Clearing Debris
2. Construction and Demolition Debris (C&D Debris)
3. Hazardous Waste (soil)
1. Non-Hazardous Waste (soil)
5. Construction Water Underground Storage Tank Liquid and Solid Wastes
6. Site Refuse

Each of these waste materials is further described in Section 02110 - Waste Removal, Handling, and Storage.

B. The CONTRACTOR shall properly transport and dispose of all items, which can be generally classified as hazardous and non-hazardous solid wastes removed from the Site, to appropriate disposal facilities. This includes existing wastes as well as the wastes generated by the CONTRACTOR during construction.

C. 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/or Disposal Facility (TSDF), Solid Waste Management Facility (SWMF), Publically Owned Treatment Works (POTW), or reclamation/recycling/salvage facility, Federal, State, and local governments are complied with and properly documented.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 02105 – Chemical Sampling and Analysis

C. Section 02110 – Waste Removal, Handling, and Storage

D. Section 02245 – Construction Water Management

1.03 REFERENCES

A. The publications listed below are pertinent in whole or part to the Work. The publications are referred to within the text by basic designation only.

1. Code of Federal Regulations (CFR)

a. 40 CFR 262: Standards Applicable to Generators of Hazardous Waste
b. 40 CFR 761: Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
c. 49 CFR 172: Tables, Hazardous Material Communication Requirements, and Emergency Response Information Requirements

2. New York Codes, Rules, and Regulations (NYCRR)

a. 6 NYCRR 364: Waste Transportation Permits
b. 6 NYCRR 372: Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities
c. 6 NYCRR 248: Use of Ultra Low Sulfur Diesel Fuel and Best Available Retrofit Technology for Heavy Duty Vehicles

B. The CONTRACTOR shall comply with all applicable Federal, State, and local requirements regarding transportation and disposal of hazardous and nonhazardous material.

1.04 SUBMITTALS

A. Description of planned means and methods for transporting and disposing of all waste materials removed from the Site or generated as a component of the Work. The description shall be a component of the Construction Work Plan and include the following:

1. Locations of all identified TSDFs, SWMFs, POTWs, and/or reclamation/recycling/salvage facilities;
2. Permit profile of each identified disposal facility.
3. The proposed haul route over local roads to each of the identified facilities.

B. Sample Bill of Lading and Uniform Hazardous Waste Manifest to be used for the project.

C. Completed and signed Bill of Ladings and Manifests for all transported waste loads.

D. Certified weight slips from the TSDF, POTW, or reclamation/recycling/salvage facility for each load transported to the disposal facility.

E. Weekly transportation report that includes the type of waste material, weight, volume, disposal/recycle location, date of shipment, date of receipt, and responsible transporter.

1.05 DEFINITIONS

A. Refer to the definitions for classifications of wastes in Section 02110 – Waste Removal, Handling, and Storage.

B. Local Road: for the purpose of this specification, it shall mean those roads within the City of Lockport, Niagara County, New York.

C. Generator: The Site is an abandoned hazardous waste Site and the actual generator of the waste is not participating in the remedial action. For the purpose of the project, the DEPARTMENT or the ENGINEER on behalf of the DEPARTMENT will assume the role of generator and, as such, shall sign all required documentation and recordkeeping.

D. Transporter: means a person or firm engaged in the off-site transportation of solid waste by air, rail, highway or water.

1.06 WASTE CONTAINERS

A. Provide waste containers specific to the individual waste as described in Section 02110 – Waste Removal, Handling, and Storage.

1.07 TRANSPORTATION OF WASTES

A. This section applies to all wastes identified in Sub-Part 1.01A except Hazardous Waste.

B. Transport all wastes specified or generated as a result of the Work. This includes materials generated by final Site cleanup activities including the dismantling of the temporary facilities and controls.

C. Comply with the New York State Diesel Emissions Reduction Act (DERA), Environmental Conservation Law 19-0323, and 6 NYCRR 248 when using heavy duty vehicles.

D. Coordinate the number and schedule of vehicles required for off-site transportation of waste materials generated during the execution of the specified work.

E. Inspect the transportation vehicles before and after loading to ensure compliance with all local, State, and Federal regulations for the safe transport of wastes from the Site to the receiving facility. The CONTRACTOR shall provide the necessary labor and materials to insure all trucks, containers, etc. are lined with plastic prior to filling, as required; foamed or stabilized with an agent, if necessary; and covered prior to departure.

F. Insure that the transporters arriving at the Site for loading do not cause undue congestion to local roads. Stage trucks either within the perimeter of the Site or at the parking lot of the City owned Altro Park. Permission has been granted by the City of Lockport to allow Contractor staging and queuing for the duration of the work. Transporters shall not be accepted at the Site before 7:00 AM and after 5:00 PM.

G. Proceed directly from the Site to the designated receiving facility indentified by the CONTRACTOR in the Construction Work Plan. Temporary staging or storage of material at intermediate locations between the Site and the receiving facility is prohibited.

H. Travel from the Site along traffic routes established by the CONTRACTOR and documented in the Construction Work Plan.

I. Originate, maintain, and provide the ENGINEER with a copy of each executed bill of lading for each load shipped off-site. In addition, provide the ENGINEER documentation and records verifying receipt of each truck load by the receiving facility. Such documentation shall indicate the actual certified weight of each load shipped.

1.08 TRANSPORTATION OF HAZARDOUS WASTE

A. Transport Hazardous Waste as specified or generated as a result of the Work. This includes materials generated by final Site cleanup activities including the dismantling of the temporary facilities and controls that have been in contact with Hazardous Waste.

B. Comply with the New York State Diesel Emissions Reduction Act (DERA), Environmental Conservation Law 19-0323, and 6 NYCRR 248 when using heavy duty vehicles.

C. Coordinate the number and schedule of vehicles required for off-site transportation of waste materials generated during the execution of the specified work.

D. Inspect the transportation vehicles before and after loading to ensure compliance with all local, State, and Federal regulations for the safe transport of wastes from the Site to the receiving facility. The CONTRACTOR shall provide the necessary labor and materials to insure all trucks, containers, etc. are lined with plastic prior to filling, as required; foamed or stabilized with an agent, if necessary; and covered prior to departure.

E. Insure that the transporters arriving at the Site for loading do not cause undue congestion to local roads. Stage trucks either within the perimeter of the Site or at the parking lot of the City owned Altro Park. Permission has been granted by the City of Lockport to allow Contractor staging and queuing for the duration of the work. Transporters shall not be accepted at the Site before 7:00 AM and after 5:00 PM.

F. Decontaminate loaded trucks as specified in Section 02110 - Waste Removal, Handling, and Storage prior to transporting off-site.

G. Proceed directly from the Site to the designated receiving facility indentified by the CONTRACTOR in the Construction Work Plan. Temporary staging or storage of material at intermediate locations between the Site and the receiving facility is prohibited.

H. Travel from the Site along traffic routes established by the CONTRACTOR and documented in the Construction Work Plan.

I. Originate, maintain, and provide the ENGINEER with a copy of each executed manifest for each load shipped off-site. In addition, provide the ENGINEER documentation and records verifying receipt of each truck load by the receiving facility. Such documentation shall indicate the actual weight of each load shipped.

1.09 RECORDKEEPING

A. This section applies to all wastes identified in Sub-Part 1.01A except Hazardous Waste.

B. Document each waste load shipped off-site.

1. Complete a bill of lading provided by the transporter or TSDF for non-hazardous wastes. Other forms as approved by the ENGINEER may be used. The form shall generally include the following information:

a. Unique identifying tracking number.
b. Generator/generator representative contract information.
c. Transporter contract information.
d. TSDF contact information.
e. Date of shipment.
f. Quantity of shipment.
g. Signatures of generator/generator representative, transporter, and TSDF.

2. Complete a Uniform Hazardous Waste Manifest for hazardous waste in accordance with Sub-Part 1.10.

1.10 RECORDKEEPING FOR HAZARDOUS WASTE

A. Document each load of Hazardous Waste shipped off-site in accordance with the requirements of 40 CFR 761 Sub-Part K and 6 NYCRR 372.

B. Complete a Uniform Hazardous Waste Manifest (United States Environmental Protection Agency, USEPA Form 8700-22) for each shipped load of Hazardous Waste. Forms shall be obtained from USEPA Manifest Registry approved registered printers identified in the Table of Approved Registrants found at the website

http://www.epa.gov/wastes/hazard/transportation/manifest/registry/printers.htm .

1. Include USEPA Identification Number for the Site on all manifests.

C. Provide signed manifests to the noted recipient on each copy of the form including the generator, transporter, and designated TSDF.

1.11 DISPOSAL OF WASTES

A. Dispose of all wastes that are specified as a component of the Work or that are generated during the execution of the Work in conformance with all Federal, State, and local regulations and requirements.

B. The ENGINEER/DEPARTMENT shall approve of all designated TSDFs prior to off-site transportation and disposal. The CONTRACTOR shall not change facilities without prior consent of the ENGINEER/DEPARTMENT.

C. Complete waste characterization testing and prepare waste profiles in accordance with the requirements of the TSDF/POTW as described in Section 02110 – Waste Removal, Handling, and Storage.

D. Approved TSDFs, POTWs, and reclamation/recycling/salvage facilities shall be licensed to accept the wastes profiled/characterized by the CONTRACTOR.

E. Maintain waste on-site until approval of the waste profile has been granted by the TSDF/POTW.

F. Dispose non-hazardous wastes at approved TSDFs including, as appropriate, state-licensed SWMFs including Municipal Solid Waste Landfills and Construction and Demolition Debris Landfills;; and/or POTWs.

G. Document certified weights of each waste load measured by the TSDF, POTW, or reclamation/recycling/salvage facility at the time of disposal. The certified weight slips shall include at a minimum, the name and location of the TSDF, the date and time of measure, and the net weight of the load measured in tons calculated by subtracting the vehicle tare weight from the total gross weight (vehicle and load). For POTWs, the unit of measure shall be gallons.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

SECTION 02221

SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

A. The CONTRACTOR shall furnish all labor, equipment, and materials necessary for the selective demolition, removal, and/or abandonment of existing structures, pavement, and utilities as shown on the Construction Contract Drawings and as approved by the ENGINEER. Work includes, but is not limited to, the following:

1. Protection of pavement, facilities, structures, utilities, etc. designated to remain;
2. Demolition and removal of bituminous pavement driveways; concrete foundations, slabs, underground storage tanks, driveway curbing, and remnants; fuel, water service, and sanitary sewer service piping; chain link and wood stockade fencing, wood decking and stairs; and other minor structures as required to facilitate the Work and as approved by the ENGINEER.
3. Certain uncharted piping or other utilities encountered during the Work may be abandoned in-place at the discretion of the ENGINEER.
4. Demolition work performed for the convenience of the CONTRACTOR will not be considered for payment.

B. Sampling, analysis, characterization, transportation, and disposal of demolished materials is included in and shall be in accordance with Section 02105 - Chemical Sampling and Analysis, Section 02110 – Waste Removal, Handling, and Storage and Section 02120 – Off-Site Transportation and Disposal.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330: Submittal Procedures.

B. Section 02105: Chemical Sampling and Analysis.

C. Section 02110: Waste Removal, Handling, and Storage.

D. Section 02120: Off-Site Transportation and Disposal.

E. Section 02300: Earthwork.

F. Section 02370: Erosion and Sediment Control.

1.03 SUBMITTALS

A. Utility Investigation Findings

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.01 PROTECTION

A. General:

1. Conduct operations to prevent injury to persons.
2. Ensure safe passage of workers/persons around area of demolition.

B. Streets, Roads, Adjacent Property, Existing Facilities/Structures, and Other Works to Remain:

1. Protect throughout the work by temporary fences/barricades and exercise special care to avoid unnecessary damage.
2. Demolition operations shall be conducted such that existing facilities or structures indicated to remain are not damaged. Existing features or structures that are indicated or made known prior to the start of demolition operations shall be repaired in the event of any damage during such operations.
3. Keep public streets and private roadways accessible to emergency vehicles, patrols, and construction vehicles at all times. Provide street/road cleaning as necessary to prevent hazards.

C. Utility Lines:

1. Protect existing utility lines that are indicated to remain from damage.
2. When utility lines to be removed or relocated are encountered, the CONTRACTOR shall notify the associated utility company in ample time to minimize interruption of the service.
3. The CONTRACTOR shall notify the ENGINEER and/or Owner immediately of damage to or an encounter with an unknown existing utility line.
4. The CONTRACTOR shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the CONTRACTOR prior to start of demolition.

3.02 UTILITY INVESTIGATION

A. Test pit at the right-of –way boundary to identify utility services to the former building.

B. If a utility is found, investigate the source and type of utility.

C. Report the findings of the investigation to the ENGINEER.

3.03 UTILITY ABANDONMENT

A. Abandon identified on-site inactive utilities. Abandonment shall include demolishing pipes and structures associated with the inactive utilities. For utilities that extend beyond the site property and into the street right-of-way, cut the pipes 5 feet outside the right-of-way boundary and cap the open pipe end to remain. Provide a cap suitable for the pipe size and material capable of maintaining a watertight connection. Plugging open pipe ends with grout is not acceptable.

3.04 DEMOLITION

A. General:

1. Structures to be demolished or removed shall be discontinued in use prior to start of work.
2. The use of explosives will not be permitted.
3. Concrete demolition debris shall be reduced to manageable sections by hydraulic shear or other means. Debris pieces shall be broken/crushed to reduce the pieces to a maximum of 2 feet in size in any dimension prior to on-site re-use or off-site disposal.
4. Pavement demolition debris shall be reduced to manageable sections by mechanical means. Debris pieces shall be broken to reduce the pieces to a maximum of 2 feet in size in any dimension prior to off-site disposal.

B. Pollution Controls:

1. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.
2. Comply with governing regulations and environmental protection.
3. Do not use water when it may create hazardous or objectionable conditions such as runoff, ice, flooding, and pollution.

C. Utility Piping:

1. Where indicated on the Construction Contract Drawings or approved by the ENGINEER, the CONTRACTOR shall remove existing piping and/or utilities as required to perform the work.

    a. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
    b. Pipe shall be completely removed and broken/crushed to an appropriate size for handling, temporary on-site storage, transportation, and disposal.

3.05 SAMPLING, ANALYSIS, AND CHARACTERIZATION

A. Demolition debris shall be classified as construction and demolition debris as defined in Section 02120 – Waste Removal, Handling, and Storage. The exception to this may be the concrete underground storage tanks. Visual observation of severe staining will characterize

the concrete as contaminated and require handling as a hazardous or non-hazardous waste depending on the waste characterization of the remaining tank contents.

B. Sampling and analysis shall be in accordance with 02105 – Chemical Sampling and Analysis.

3.05 CONSTRUCTION AND DEMOLITION DEBRIS ON-SITE RE-USE

A. Clean broken concrete derived from on-site demolition may be segregated and used as on-site backfill provided it meets the criteria of Section 02300 - Earthwork.

3.06 TRANSPORTATION AND DISPOSAL

A. Construction and demolition debris identified as not suitable for on-site re-use shall be disposed off-site in accordance with Section 02120 – Off-Site Transportation and Disposal.

END OF SECTION

SECTION 02231

CLEARING AND GRUBBING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Clearing includes cutting trees and general woody growth including shrubs, bushes, vines, and general brush at the ground surface.
2. Grubbing includes removal of vegetative cover (grass) with root systems, stumps with root systems, and other organic matter surficial or buried within the top 1 foot of soil (topsoil).
3. The clearing and grubbing debris generated during remedial action construction is collectively classified as land clearing debris.

B. Limit of Work:

1. Perform clearing within the limit of work as shown on Construction Contract Drawing C-102 and agreed upon by the Engineer.
2. Perform grubbing within excavation limits and in additional areas as required to install construction temporary facilities and controls, or areas to be restored.
3. In no case shall clearing or grubbing take place outside the delineated limit of work.

C. Clearing performed outside the defined limit of clearing shall not be permitted without permission of the ENGINEER

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02110 – Waste Removal, Handling, and Storage

B. Section 02120 – Off-Site Transportation and Disposal

C. Section 02300 – Earthwork

D. Section 02370 – Erosion and Sediment Control

1.03 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:

1. Dispose of combustible material by burning only when permitted by and in accordance with all applicable local and state laws, ordinances, and code requirements.

B. Remove and dispose of non-salvageable material in accordance with all applicable local and state laws, ordinances, and code requirements.

PART 2 – PRODUCTS

None

PART 3 – EXECUTION

3.01 PROTECTION

A. Streets, Roads, Adjacent Property, Existing Facilities, and Other Works to Remain:

1. Protect throughout the Work and exercise care to avoid unnecessary damage.
2. Clearing and grubbing operations shall be conducted such that existing facilities or structures indicated to remain are not damaged. Existing features or structures that are indicated or made known prior to the start of clearing and grubbing operations shall be repaired in the event of any damage during such operations.
3. Keep streets and roads accessible to emergency vehicles, patrols, and construction vehicles at all times.

B. Utility Lines:

1. Protect existing utility lines from damage.
2. When utility lines to be removed or relocated are encountered within the area of clearing and grubbing operations, the CONTRACTOR shall notify the associated utility company in ample time to minimize interruption of the service.
3. The CONTRACTOR shall notify the ENGINEER immediately of damage to or an encounter with an unknown existing utility line.
4. The CONTRACTOR shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the CONTRACTOR prior to start of clearing and grubbing operations.

3.02 PERFORMANCE

A. Layout and Marking:

1. The CONTRACTOR shall generally clear up to the alignment of the perimeter chain link fence located along the south and east property boundaries as shown on the Construction Contract Drawings.

B. Clearing:

1. Remove trees, shrubs, and brush above the ground surface within the clearing limit.
2. Segregate clearing debris from grubbings. If clearing debris is comingled with grubbings or surficial site soil/sediment, as determined by the ENGINEER, the debris shall be considered contaminated.
3. Cleared material may be stockpiled within the limit of work in limited quantities and for short durations.

C. Grubbing:

1. Remove all stumps, roots, and vegetative matter including grasses and weeds in a manner that does not comingle material with clearing debris.
2. Grubbings may be temporarily stockpiled, if required within the Exclusion Zone prior to off-site disposal.

D. Disposal:

1. Land clearing debris – clearing debris shall be considered non-impacted waste and shall be legally disposed off-site.2. Land clearing debris – grubbings, including roots and stumps, and any other component having direct contact with soil, shall be considered contaminated material and shall be disposed off-site as Hazardous or Non-Hazardous Waste depending on the location..
3. Burning of Materials: Burning is not permitted.
4. Minimize on-site stockpiling of waste to be disposed off-site.

3.03 RESTORATION

A. Restore any items damaged by this work to their original condition.

END OF SECTION

SECTION 02240

DEWATERING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Furnish, operate, and maintain dewatering measures and/or equipment for the control, collection, and disposal of ground and surface water entering trenches, excavations, and proposed fill/backfill areas.

B. Water from dewatering activities shall be classified as construction water and be managed in accordance with Section 02245 – Construction Water Management. Discharge may not occur to any storm drain system.

C. The estimated groundwater condition is summarized as follows:

1. Initial groundwater inflow rates are estimated to be as high as 4.8 gallons per minute for the Site based on calculations using historical data.
2. Groundwater depths within the excavation limit are estimated at 5 feet below the existing ground surface.
3. March 2014 test pitting activities indicated little groundwater intrusion.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 02245 – Construction Water Management

C. Section 02300 – Earthwork

D. Section 02370 – Erosion and Sediment Control

1.03 SUBMITTALS

A. Submit a description of the proposed dewatering method(s) which are to be utilized as a component of the Construction Water Management Plan (CWMP) to the ENGINEER for review.

PART 2 - PRODUCTS

2.01 GENERAL

A. Provide, operate, and maintain a dewatering system to remove all water from excavations and trenches using pumps, drains, well points, piping, and any other facilities necessary to keep the excavations and trenches free of water, as required

by these Specifications or by the ENGINEER. Have spare units available for immediate use in the event of equipment breakdowns.

PART 3 - EXECUTION

3.01 PERFORMANCE

A. Excavations shall be kept free of water during excavating, testing, and backfilling.

B. Open inactive excavations may be allowed to temporarily collect water if given the type of soils and groundwater condition, the excavation sidewalls remain stable.

C. Open and inactive excavations that are deemed unstable due to groundwater inflow shall be dewatered and backfilled or maintained in a dewatered state. Additional dewatering effort or re-work associated with temporary backfill shall be considered incidental costs.

D. Disposal of Water:

1. Sampling, Analysis, and Containment. All collected water shall be classified as Construction Water and shall be handled in accordance with Section 02245 – Construction Water Management.
2. Treatment. On-site treatment of water from dewatering activities shall be in accordance with Specification Section 02245 – Construction Water Management. CONTRACTOR shall be responsible for complying with the discharge permits.

E. Damage:

1. All damage resulting from the dewatering operations or the failure of the CONTRACTOR to maintain the Work in a suitable dry condition shall be repaired by the CONTRACTOR, at no additional cost to the DEPARTMENT.
2. Take all necessary precautions to protect new work from flooding during storms or from other causes.
3. Thoroughly brace or otherwise protect all pipelines and structures which are not stable, against floatation, when necessary.

F. Diversion Berms:

1. Design, construct, maintain, and remove diversion berms where necessary for diverting runoff away from open excavations and trenches to minimize the generation of liquid wastes
2. Design and construct diversion berms to withstand all imposed loads to prevent injury to adjacent structures or property.

G. Temporary Under Drains:

1. When necessary, lay temporary under drains in the excavation.
2. Excavate trenches to suitable dimensions to provide space for the under drains and surrounding gravel.
3. Install under drains a distance of at least 3 inches below the bottom of the pipe or structure and the top of the bells of the under drain pipes.
4. Under drain pipe shall be concrete, HDPE, or PVC pipe of standard thickness with open joints wrapped in geotextile fabric to prevent the admission of sand and other soil. Sewer pipe of the quality known as "seconds" will be acceptable.
5. Entirely surround the under drain and fill the space between the under drain and the pipe or structure with crushed stone.
6. Compact the crushed stone, if necessary, and leave the surface suitable for laying the pipe or building the structure.

3.02 DEWATERING THE CONSTRUCTION SITE

A. Dewater foundations, cutoff trenches, and other parts of the construction Site and keep free of standing water or excessively muddy conditions as needed for proper execution of the construction Work.

B. Furnish, install, operate, and maintain all drains, sumps, pumps, and other equipment needed to perform the dewatering as specified.

C. Dewatering methods that cause a loss of fines from foundation areas will not be permitted.

D. Discharge of water pumped from excavations shall be limited to appropriate on-site storage containers. Discharge to other stormdrain systems, sewer systems, or over land is not allowed.

3.03 REMOVAL OF TEMPORARY WORKS

A. After the temporary works have served their purposes, remove them or level and grade them to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

B. Except as otherwise specified, remove any temporary under drain pipes.

END OF SECTION

SECTION 02245

CONSTRUCTION WATER MANAGEMENT

PART 1 – GENERAL

1.01 DESCRIPTION

A. Furnish, operate, and maintain construction water management measures and equipment to control, convey, collect, treat, and/or dispose of all construction related water including the following:

1. groundwater from excavation dewatering operations
2. decontamination water from vehicle and equipment decontamination facilities
3. water collected from stockpile containment areas
4. stormwater runoff from contaminated areas of the Site
5. other incidental water that contacts contaminated material or equipment.

B. The CONTRACTOR may elect to dispose of construction water by any combination of the following means:

1. Off-site disposal of treated construction water to the sanitary sewer manhole at the corner of Willow Street and Pine Street in Lockport, New York approximately 300 feet east of the Site.
2. Off-site disposal to a properly permitted off-site Treatment, Storage and/or Disposal Facility (TSDF) as described in Section 02120 – Off-Site Transportation and Disposal.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 01410 – Regulatory Requirements

C. Section 02105 – Chemical Sampling and Analysis

D. Section 02110 – Waste Removal, Handling, and Storage

E. Section 02120 – Off-Site Transportation and Disposal

F. Section 02240 - Dewatering

1.03 SUBMITTALS

A. Analytical test reports in accordance with Section 02105 – Chemical Sampling and Analysis and the requirements of the Lockport Wastewater Treatment Plant (WWTP):

1. Start up analytical test reports proving an on-site treatment system installed by the CONTRACTOR is capable of generating effluent meeting the allowable discharge limits of the Lockport WWTP.
2. Analytical test reports for construction water samples collected and tested prior to off-site disposal.

B. Bill of ladings or manifests for off-site disposal of construction water as described in Section 02120- Off-Site Transportation and Disposal.

1.04 REGULATORY REQUIREMENTS

A. If the CONTRACTOR elects off-site discharge of construction water to the Lockport WWTP sanitary sewer, the following requirements shall be met:

1. Start up analytical test reports must demonstrate the on-site treatment system installed by the CONTRACTOR is capable of generating effluent meeting the allowable discharge limits of the Lockport WWTF prior to discharge.
2. Notification of the Lockport WWTP Pretreatment Coordinator, Victoria Haenle, at 716-433-1613, EXT 1 shall occur prior to each planned discharge to the sewer.
3. A representative of the Lockport WWTP shall observe each batch discharge to the sanitary sewer.

1.05 FEES

A. Any and all fees associated with disposal of construction water or violations associated with disposal shall be paid by the CONTRACTOR.

PART 2 - PRODUCTS

2.01 GENERAL

A. Provide, operate, and maintain a construction water management system. The system must be sized appropriately to collect, convey, store, and/or treat the quantity of water generated so that water management does not impact construction work. In general, the system may include some combination of the following components:

1. Pumping systems from excavations, dewatering facilities, and/or decontamination facilities.
2. Piping to convey water from the point of generation to storage/treatment.
3. Construction water storage facilities to temporarily store untreated water, treated water, and/or water designated for off-site disposal.
4. A treatment system designed to treat construction water to the required disposal standard of the Lockport WWTP or off-site TSDF.

PART 3 – EXECUTION

3.01 PERFORMANCE

A. Minimize generation of construction related water using engineering controls, best management practices, stormwater controls, and other related means and methods. Contributing factors include:

1. Total active and open area being excavated at any given time.
2. Uncontrolled stormwater runoff entering contaminated areas.
3. Number and frequency of construction vehicles being decontaminated.

B. If the ENGINEER believes that construction water is being mishandled or there is insufficient management of the construction water, the ENGINEER may stop work until the CONTRACTOR corrects the problem.

C. Off-site disposal of construction water shall be to a properly permitted Treatment, Storage, and/or Disposal Facility (TSDF) allowed to accept the water based on the characterization testing performed by the CONTRACTOR in accordance with Section 02105 – Chemical Sampling and Analysis and in coordination with the designated TSDF requirements.

D. Off-site discharge of construction water to the Lockport WWTP sanitary sewer shall be allowed provided the tested water satisfactorily demonstrates compliance with the applicable regulatory requirements of the Lockport WWTP. Analytical reports documenting compliance shall follow the requirements of Section 02105 – Chemical Sampling and Analysis.

3.02 OFF-SITE DISCHARGE

A. Off-site discharge of construction water to the Lockport WWTP sanitary sewer requires that the conditions of the WWTP be met.

B. Collect all construction water for temporary on-site storage in the construction water storage facilities prior to discharge.

C. Confirm by startup testing that the treatment system is capable of meeting the discharge effluent limits dictated by the Lockport WWTP. The first treated batch of construction water shall be tested in accordance with the requirements of Section 02105 – Chemical Sampling and Analysis.

D. Treat all subsequent batches of construction water in accordance with the means and methods proven during the startup testing. If there is a deviation in the treatment means and methods as determined by the ENGINEER, the CONTRACTOR shall complete additional verification testing at their own expense to demonstrate compliance.

E. Record quantities of water discharged to the Lockport WWTP sanitary sewer by count of known tank volumes rounded to the nearest half tank.

F. Provide back-up on-site storage and/or alternate disposal options as a contingency plan due to any of the following occurrences:

1. Significant storm events generating higher than normal construction water quantities.
2. Lockport WWTP discharge restrictions which could be initiated during wet weather or other emergency conditions.
3. Backup due to treatment system down time associated with maintenance or operation failure.
4. Other unforeseen circumstances that limit discharge rates and/or volumes.

3.03 OFF-SITE DISPOSAL

A. Refer to Section 02120 – Off-Site Transportation and Disposal. Construction water may be disposed off-site at an approved TSDF. No additional payment will be made to the CONTRACTOR for transportation or off-site disposal fees.

B. The construction water shall be characterized in accordance with the designated TSDF requirements.

END OF SECTION

SECTION 02250

SHORING (SHEETING AND BRACING)

PART 1 - GENERAL

1.01 DESCRIPTION

A. Furnish and install an engineered shoring system where required by the CONTRACTOR as recommended/directed by their structural/geotechnical design ENGINEER for protection of structures, and/or where required to meet safety requirements of the U.S. Department of Labor's Construction Safety Act designated as Title 29-LABOR-Part 1926 Safety and Health Regulations for Construction, Sub-Part P, Sections 926.650 through 653.

B. Support trench excavations with an engineered shoring system (sheeting, shoring, bracing, or other methods) in areas where excavation sidewalls can not be sloped properly to meet safety requirements.

C. The planning, design, and monitoring of engineered shoring systems shall be submitted and stamped by a structural/geotechnical design ENGINEER registered in the State of New York.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 02300 – Earthwork

C. Section 02370 – Erosion and Sediment Control

1.03 QUALITY ASSURANCE

A. The consequences of an excavation failure, the location/configuration/depth of the excavation, and/or the desire to limit the disturbance associated with the excavation may necessitate the use of an engineered shoring system to safely support excavations during excavation and backfilling.

B. Where an engineered shoring system is required to meet safety requirements, is called for on the Construction Contract Drawings, and/or is required by the CONTRACTOR’s design ENGINEER due to changed or unforeseen conditions, the CONTRACTOR shall have a registered professional ENGINEER design an engineered shoring system that will safely support the excavation and all adjacent structures/buildings during excavating and backfilling activities. In addition to the design of lateral support, the following design criteria must be considered:

1. Stability of the excavation against blow-in or bottom heave;
2. Protection of adjacent structure(s) from settlement; and/or

3. Desire to minimize internal bracing to the extent practical in order to facilitate access to perform the work required within the excavation.

1.04 MONITORING

A. Perform continuous vibration monitoring during installation of the shoring system and subsequent excavation and compaction of fill.

B. Install the monitoring device in the close to the southwest corner of the existing 320 Willow Street residence Alternate installation locations may be selected based on the recommendation of the CONTRACTOR's shoring design ENGINEER.

C. Vibration monitoring device shall have the capacity to provide continuous data recording during construction.

1.05 SUBMITTALS

A. Submit an engineered shoring system design plan, sealed by a licensed New York Professional ENGINEER, to the ENGINEER for informational purposes at least 14 business days prior to proposed installation.

B. Vibration monitoring readings for the duration of the Work.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Trench Box, as necessary, best adapted to design requirements.

B. Steel Sheeting: Interlocking type with section best adapted to design requirements.

C. Bracing/Walers, as necessary, best adapted to design requirements.

D. Anchors, as necessary, best adapted to design requirements.

PART 3 - EXECUTION

3.01 INVESTIGATION/DATA COLLECTION

A. Test pitting: Test pit at locations, as deemed necessary by the CONTRACTOR's design ENGINEER, to gather information/data required to perform the shoring system design.

B. Soil Sample and Testing:

1. Perform in situ testing to identify soil properties, as required to perform the shoring system design.
2. Collect soil samples and perform laboratory analysis to evaluate the soil properties, as required, to perform shoring system design.

3.02 INSTALLATION

A. Driving of Sheeting:

1. Install sheeting and bracing in accordance with accepted practices and in compliance with State and Federal safety requirements.
2. Furnish skilled and experienced workmen with adequate equipment to produce a safe structure.
3. Drive sheeting prior to excavation.
4. Fill voids outside the driven sheeting and compact, as necessary, to hold trench sides in place.

B. Withdrawal of Sheeting:

1. Remove as the work progresses in a manner to prevent loosening and caving of the sides of the excavation and to prevent damage to finished work or adjacent structures and property.
2. Fill all voids as soon as sheeting is withdrawn.

C. Sheeting Left in Place:

1. Sheeting shall only be left in place where approved by the ENGINEER.
2. Sheeting shall not be left within 3 feet of finished grade.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section covers excavation, filling/backfilling, compaction, and grading. The Work includes:

1. Excavating contaminated soil required to implement the Site cleanup associated with the remedial construction.
2. Furnishing and placing the following materials:

a. Select Borrow
b. Crushed Stone
c. Sand
d. Topsoil

3. Grading all excavated and disturbed areas.
4. Geotechnical laboratory testing borrow source materials.
5. Other miscellaneous earthwork activities.

B. Control of surface water run-off during construction shall be in accordance with Section 02370 - Erosion and Sediment Control and Section 02245 – Construction Water Management.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 01560 – Dust and Odor Control

C. Section 02105 – Chemical Sampling and Analysis

D. Section 02110 – Waste Removal, Handling, and Storage

E. Section 02120 – Off-Site Transportation and Disposal

F. Section 02221 – Select Site Demolition

G. Section 02245 – Construction Water Management

H. Section 02370 – Erosion and Sediment Control

1.03 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

A. ASTM International (ASTM):

1. ASTM C 33 (1993) Standard Specification for Concrete Aggregates;
2. ASTM C 88 (1999a) Standard Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate;
3. ASTM C 127 (1993a) Test Method for Specific Gravity and Absorption of Coarse Aggregate;
4. ASTM C 131 (2001) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine;
5. ASTM C 136 (1996a) Sieve Analysis of Fine and Coarse Aggregates;
6. ASTM D 422 (1998) Standard Test Method for Particle-Size Analysis of Soils;
7. ASTM D 535 (1989) Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine;
8. ASTM D 854 (1992) Test Method for Specific Gravity of Soils;
9. ASTM D 1140 (1997) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve;
10. ASTM D 1557 (2000) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb f/ft^3);
11. ASTM D 2216 (1998) Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soils and Rock by Mass;
12. ASTM D2487 (2000) Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System);
13. ASTM D 2922 (2001) Standard Test Methods for Density of Soil and Soil-Aggregate In Place by Nuclear Methods (Shallow Depth);
14. ASTM D 2974 (2000) Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils;
15. ASTM D 3017 (2001) Standard Test Method for Water Content of Soil and Rock by Nuclear Methods (Shallow Depth);
16. ASTM D 3740 (2001) Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction;
17. ASTM D 4972 (2001) Standard Test Method for pH of Soils;
18. ASTM D 5101 (2001) Standard Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio;
19. ASTM D 6938 (2008a) Standard Test Methods for In-Place density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

B. New York State Department of Transportation (NYSDOT):

1. NYSDOT SS - (2008) Standard Specifications

1.04 SUBMITTALS

Submit to the ENGINEER for approval the following in accordance with Section 01330 - Submittal Procedures:

A. Borrow Source(s):
The CONTRACTOR shall provide the proposed source(s) for borrow material prior to initiation of Work. The name, location, and relevant available/previous laboratory testing data shall be provided.

B. CONTRACTOR's Quality Control Testing Laboratory:
The name and qualifications of an independent third-party commercial testing laboratory to be used for borrow source and in-place soil/construction materials testing shall be submitted as soon as possible, but no later than 7 days following Notice to Proceed.

C. Test Reports:
The CONTRACTOR shall submit an electronic (pdf format) testing laboratory report to the ENGINEER that has been quality control certified by the laboratory:

1. All test reports for borrow source materials.
2. At least one moisture density curve for each type of borrow source material and native soil to be utilized.
3. Field in-place density (compaction) test reports.

1.05 JOB CONDITIONS:

A. Site Information:

1. Subsurface soil boring information is included in Appendix D. However, variations may exist in the subsurface conditions between boring locations.
2. Data provided on subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that neither the New York State Department of Environmental Conservation (DEPARTMENT) nor the ENGINEER will be responsible for interpretations or conclusions drawn therefrom by CONTRACTOR. Data are made available for the convenience and information of the CONTRACTOR. Additional test borings and other exploratory operations may be made by CONTRACTOR at no cost to DEPARTMENT.

B. Existing Utilities:

1. The CONTRACTOR shall locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should unmapped, or incorrectly mapped, piping or other utilities be encountered during excavation, consult the Utility Owner immediately for direction. Cooperate with the DEPARTMENT and utility companies in

keeping respective services and facilities in operation. The CONTRACTOR shall repair damaged utilities to satisfaction of the Utility Owner.

3. Do not interrupt existing utilities serving facilities occupied and used by the DEPARTMENT or others, except when permitted in writing by ENGINEER and then only after acceptable temporary utility services have been provided.

C. Use of Explosives:

1. Use of explosives shall not be allowed.

D. Protection of Persons and Property:

1. Barricade and mark open excavations occurring as part of this work in accordance with applicable standards.
2. Protect buildings, structures, utilities, sidewalks, pavements, and other facilities designated to remain from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations and truck traffic.

1.06 DEFINITIONS

A. Unsatisfactory Soil/Material:
Unsatisfactory soil/material includes but is not limited to peat and/or highly organic soils (classified as OL, OH, or PT by ASTM D 2487), grubbings, stumps/brush, trash, refuse, debris, frozen soils, soils containing materials greater than the allowable size (see below), saturated soils, fine-grained soils above their liquid limit at the time of compaction, and soils which when left in place are either too wet or too dry to compact, as determined by the ENGINEER.

B. Satisfactory Soil/Material:
Satisfactory soil/material shall meet the requirements specified in Part 2 of this Section and shall be used in areas as shown on the Construction Contract Drawings or as directed by the ENGINEER. In addition, satisfactory soils/materials shall satisfy the following conditions:

1. Satisfactory soil/materials shall be free of all Unsatisfactory Soil/Material conditions listed above;
2. Satisfactory soil from on-site sources shall be free of material greater than 4 inches any direction, unless otherwise specified or approved by the ENGINEER. Furthermore, the maximum particle size shall not exceed one half of the specified maximum lift thickness, unless otherwise specified; and
3. Satisfactory soil from off-site borrow sources shall be free of materials greater than 4 inches in any direction (excludes Rock or Riprap), unless otherwise specified or approved by the ENGINEER. Furthermore, the maximum particle size shall not exceed one half of the specified maximum lift thickness, unless otherwise specified.

C. Cohesionless and Cohesive Soils:
Cohesionless soils include gravels, sand-gravel mixtures, sands, and gravelly-sands, classified as GW, GP, SW, or SP by the Unified Soil Classification System (ASTM D 2487). Cohesive soils include clayey gravels, sand-clay mixtures, clayey sands, clays, and silts, classified as GC, SC, CL, CH, ML, or MH by the Unified Soil Classification System (ASTM D 2487). Soils classified as GM and SM will be identified as cohesionless only when the "fines" are determined to be non-plastic. Testing required for the classification of soil shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

D. Degree of Compaction:
Degree of compaction (percent compaction) required is expressed as a percentage of the maximum dry density, at the optimum moisture content. The maximum dry density and optimum moisture content shall be obtained by the test procedure presented in ASTM D 1557.

E. Horizontal Excavation Limit:
The horizontal limit of excavation required to remove all waste (soil) included within the horizontal non-hazardous waste limit as identified on the Construction Contract Drawings. The horizontal excavation limit may be adjusted by the CONTRACTOR to conform with achievable safe cutback slopes in consideration of excavation depth, soil type, and groundwater conditions.

F. Vertical Excavation Limit:
The vertical limit of excavation coincides with the vertical non-hazardous waste limit identified on the Construction Contract Drawings which is top of bedrock.

1.07 QUALITY ASSURANCE:

A. Codes and Standards:
Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Work associated with the remedial action construction shall conform to the "DER-10 / Technical Guidance for Site investigation and Remediation" by the New York State Department of Environmental Conservation, date issued May 3, 2010.

1.08 RE-USE OF ON-SITE MATERIALS

A. Construction and demolition debris other than clean concrete debris as described in Sub-Part 1.08.C; land clearing debris; drums; waste tires; bulky metal waste; other solid wastes; sanitary wastes; and/or site refuse shall not be used as or incorporated into backfill for any on-site excavation. These materials shall be handled as wastes for proper off-site disposal as specified in Section 02110 – Waste Removal, Handling, and Storage and Section 02120 - Off-Site Transportation and Disposal.

B. On-site soil outside the identified non-hazardous waste limit excavated to establish safe cutback slopes may be re-used as Select Borrow if it meets the requirements for Select Borrow described in Sub-Part 2.01.

C. Clean broken concrete generated from on-site demolition may be re-used as backfill provided it meets the following criteria:

1. Is comprised of broken pieces with no dimension larger than two (2) feet in any direction.
2. Is free of soil and/or visible staining and can be determined clean by visual observation.
3. Is not comingled or attached to other waste materials including metal reinforcing bar (rebar) or woven wire fabric.
4. Is placed at least 3 feet above the Reagent Infiltration Layer and at least 5 feet below final ground surface as shown in the Construction Contract Drawings.

PART 2 - PRODUCTS

2.01 SELECT BORROW

A. Select Borrow shall be imported, as necessary, to achieve the subgrade elevations indicated on the Construction Contract Drawings. Select Borrow shall consist of earth, suitable for embankment construction (cohesionless soil). It shall be free from frozen materials, perishable rubbish, peat, and other Unsatisfactory Soil/Material. It shall be of such a nature and character that it can be compacted to the specified density (Sub-Part 3.12).

B. The moisture content shall be sufficient to provide the required compaction and a stable embankment. In no case shall the moisture content exceed 4 percent above optimum, which shall be determined in accordance with ASTM D 1557.

C. Imported Select Borrow shall meet the Unrestricted Soil Cleanup Objectives as described in 6 NYCRR 375, Table 375-6.8(a) and confirmed in accordance to Section 02105 – Chemical Sampling and Analysis.

D. On-Site soil excavated to provide access to non-hazardous soil within the horizontal non-hazardous waste limit (cutback slopes) may be used as Select Borrow. Based on historic remedial investigation sampling and testing, this soil is considered to meet the requirement of Sub-Part 2.01B unless visual observations such as staining or presence of free product are noted. Soil impacted by staining shall be screened using a photo-ionization detector (PID). Readings equal to or below background shall determine that the material is acceptable for re-use. Soil in contact with and comingled with free product shall be segregated as waste not for re-use.

2.02 CRUSHED STONE

A. 2” Crushed Stone shall be used in the construction of the stabilized construction entrance and decontamination pad. Crushed stone shall consist of material meeting the requirements of NYSDOT SS Type4.

B. 3/4" Crushed stone shall be used in the construction of the Reagent Infiltration Layer. Crushed stone shall consist of material meeting the requirements of NYSDOT SS Type1.

2.03 SAND

A. Sand shall be used in the construction of decontamination pad. Sand shall consist of material meeting the requirements of NYSDOT SS Mortar Sand.

2.04 TOPSOIL

A. Topsoil shall be used for the final restoration layer within the horizontal excavation limit.

B. Topsoil shall be obtained from natural sources with the following properties:

1. Loose, friable topsoil, free of refuse, brush, stumps, roots, rocks, cobbles, stones, noxious weeds, litter and any other materials that are longer than 1 inch in any dimension and which will prevent the formation of a suitable seed bed.
2. Classified as Loamy Sand in accordance with the United States Department of Agriculture (USDA) soil textural classification system.

C. Organic matter shall not constitute less than 4 percent or more than 20 percent as determined by loss-on-ignition testing of oven dried samples.

D. pH shall measure between 5.5 and 7.5.

E. Topsoil shall meet the Unrestricted Soil Cleanup Objectives as described in 6 NYCRR 375, Table 375-6.8(a) and confirmed in accordance to Section 02105 – Chemical Sampling and Analysis.

F. Soil Nutrient Analysis: Samples of the Topsoil shall be submitted to the Cornell University Nutrient Testing Laboratory or other similarly qualified testing facility. Nutrient analysis shall include testing for concentrations of Extractable Nutrients (P, K, Ca, Mg, Fe, Mn, Zn, Cu, B), Extractable Heavy Metals (Pb, Cd, Ni, Cr), and Extractable Aluminum; Cation Exchange Capacity; and Percent Base Saturation. In conjunction with other analytical testing noted in Sub-Part 2.10 (pH, Organic Content, and Soluble Salts), the laboratory shall recommended augmentation to the Topsoil to adjust the nutrients and pH levels for optimization as a growing medium for the given permanent seed mixtures (specified in Section 02921 – Seeding and Soil Supplements). Recommendations shall include lime and fertilizer applications rates.

2.05 BORROW SOURCE TESTING

Borrow source testing, including geotechnical characterization requirements, shall be conducted on all soil and aggregates proposed for construction. Third-party geotechnical laboratory testing requirements and frequency shall be as listed below.

A. Sand

Test	Methodology[1]	Frequency[2]
Sieve Analysis	ASTM C 136	1 test/500 cy

B. 3/4"Crushed Stone:

Test	Methodology[1]	Frequency[2]
Sieve Analysis	ASTM C 136	1 test/500 cy

C. Select Borrow (imported):

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis (to #200 Sieve)	ASTM D 422	1 test/1,000 cy
Modified Proctor	ASTM D 1557	1 test/1,000 cy

D. Topsoil:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis [3] (with hydrometer analysis)	ASTM D 422	1 test/500 cy (Note 3)
Organic Content	ASTM D 2974	1 test/500cy
pH	ASTM D 4972	1 test/500 cy
Soluble Salt Content	ASTM D 4542	1 test/500cy
Soil Nutrient Analysis [4]	(multiple)	1 test/500 cy (Note 4)

Notes:

1. Other testing methods may be considered acceptable, based on prior approval of the ENGINEER.
2. Testing frequency shall be as listed, at any change in borrow source, or at any discernable change in material delivered to the Site (as determined by the ENGINEER).
3. The percentages of sand, silt, and clay in the soil shall be calculated and reported based on the results of the particle size analysis. These components shall be used to perform a Soil Textural Class Analysis in accordance with the USDA Soil Textural Classification System. The USDA textural class for the soil shall be included in the report.
4. See Sub-Part 2.04F.
5. All applicable imported materials shall meet the New York State soil cleanup objectives (SCOs) for unrestricted use as determined by chemical analysis described in Section 02105 – Chemical Sampling and Analysis.
6. Testing frequency shall include at least 2 tests per borrow source, or at any discernable change in material delivered to the Site (as determined by the ENGINEER).

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the ENGINEER, in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 EXCAVATION

A. General:
Excavation consists of removal and disposal of material within the identified horizontal and vertical excavation limits. It also consists of removal of material required to perform associated demolition and utility abandonment. During construction, excavation shall be performed in a manner and sequence that will provide proper drainage at all times.

B. Most soil/material to be excavated for the work contains fuel and chlorinated contaminants in concentrations that classify it as a non-hazardous waste as defined in Section 02110 – Waste Removal, Handling, and Storage.

C. Site Excavation:

1. Conform to elevations and dimensions shown on the Construction Contract Drawings within a vertical tolerance of one tenth of a foot (0.1 foot).
2. Final horizontal and vertical excavation limits shall be determined by the limits delineated on the Construction Contract Drawings.

3.03 DEWATERING

A. Dewatering of excavations will be required to handle shallow groundwater at some locations within the excavation limit. Refer to Section 02240 – Dewatering.

B. Water levels shall be maintained low enough to facilitate stable excavating; allow for documentation testing at the bottom of excavation; and backfilling and compacting in the dry.

3.04 STABILITY OF EXCAVATIONS

A. Slope sides of excavations to comply with applicable codes and ordinances. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.

B. Maintain sides and slopes of excavations in a safe condition until completion of backfilling, or longer if specified or directed by the ENGINEER.

C. Where excavation sidewalls cannot be sloped properly to meet safety requirements, trench excavations must be supported by an engineered shoring and bracing system.

Alternately, the horizontal waste limit may be adjusted as agreed to by the DEPARTMENT.

3.05 SHORING AND BRACING

A. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition.

B. Establish requirements for trench shoring and bracing to comply with codes and ordinances of authorities having jurisdiction. Refer to Section 02250 – Shoring (Sheeting and Bracing).

3.06 SOIL/MATERIAL HANDLING AND STORAGE:

A. During daily excavation activities, if material is not directed loaded into trucks/containers, locate and retain soil in constructed soil stockpile containment areas as specified in Section 02110 – Waste Removal, Handling, and Storage.

B. Maintain all stockpiles a sufficient distance from the excavation to prevent loading of the slope and to provide for stability of the slope.

C. Take care not to comingle clean imported materials with on-site wastes. Maintain segregation of hazardous waste from non-hazardous waste.

3.07 COLD WEATHER PROTECTION

A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F.

3.08 CLOSING ABANDONED UNDERGROUND UTILITIES

A. Close open ends of abandoned underground utilities indicated to remain permanently as described in Section 02221 – Select Site Demolition.

3.09 GRADING

A. General:
The CONTRACTOR shall uniformly grade areas within the limit of work. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Finish surfaces to be free from irregular surface changes or low spots.

3.10 SUBGRADE PREPARATION

A. Remove vegetation, deleterious materials, debris, unsatisfactory soil materials, and obstructions, to establish subgrade prior to placement of fills. Bench, plow, strip,

scarify, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

B. Subgrade Compaction:

1. Subgrade surfaces shall be examined by the ENGINEER. The examination may include visual observations, hand-rod probing, and compaction testing.
2. Any loose, soft, wet, frozen, or otherwise unsuitable soils observed should either be re-compacted or undercut to a suitable subgrade, as determined by the ENGINEER.
3. Any undercut/excavated material should be replaced/backfilled with granular subgrade fill. Fill materials should be placed and compacted as specified herein.

3.11 BACKFILL AND FILL

A. General:
Place acceptable soil/aggregate of the type indicated on the Construction Contract Drawings in successive layers as required to fill from subgrade to final grade. Do not place backfill or fill material below water or on surfaces that are excessively muddy, frozen, or contain frost or ice.

B. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance by ENGINEER of completed documentation testing in areas within the horizontal non-hazardous waste limit.
2. Surveyed record of documentation test locations and final excavation elevation.
3. Removal of trash, debris and any accumulated water.
4. Acceptance of the subgrade preparation by ENGINEER.

C. Fill/Backfill Placement:

1. Place backfill and fill materials to be compacted by heavy compaction equipment in loose depth layers not more than as indicated for each type of material. The loose lift depth shall be reduced to not more than 6 inches for material compacted by hand-operated tampers or hydraulic equipment:

   a. 3/4" Crushed Stone – 18 inches
   b. Select Borrow – 12 inches

2. Place topsoil in layers not more than 6 inches in loose depth.

D. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to required percentage of maximum dry density (Sub-Part 3.12).

E. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift.

3.12 COMPACTION

A. General:
Control soil/aggregate compaction during construction providing minimum percentage of density specified for each material in each area classification.

B. Percentage of Maximum Density Requirements:
Compact soil/aggregates to not less than the following percentages of maximum dry density (determined in accordance with ASTM D 1557).

1. Vegetated Areas:

   a Compact 3/4" Crushed Stone to at least 95 percent of maximum dry density.
   b. Compact Select Borrow to at least 93 percent of maximum dry density.

2. Paved Areas:

   a. Compact Select Borrow to at least 95 percent of maximum dry density.

C. Moisture Control:

1. Where subgrade or a layer of soil must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, in proper quantities to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory level.

D Method:

1. Installation of granular materials including 3/4" Crushed Stone and Select Borrow shall be completed by vibratory methods of compaction using a steel drum roller (heavy compaction equipment) or plate compacter (hand operated tamper).

3.13 FIELD QUALITY CONTROL TESTING

A. Quality Control Testing During Construction:

1. Allow testing service to examine and test subgrade surfaces and fill/backfill layers. Before further construction work is performed, test results meeting the requirements of Sub-Part 3.12B of this Section shall be obtained.
2. Perform field density tests in accordance with ASTM D 6938 (nuclear method), or other ENGINEER approved methods, as applicable.

    a. Paved Areas: For each layer of fill placed, conduct one compaction test for every 500 square feet, but in no case less than 3 tests per active lift.
    b. Vegetated Areas: For each layer of fill placed, conduct one compaction test for every 1,500 square feet, but in no case less than 3 tests per active lift.

3. If in opinion of ENGINEER, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense to the DEPARTMENT.

3.16 MAINTENANCE

A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas:
Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.17 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal from Site:
Remove waste materials, including excess and unacceptable excavated material, trash, and debris, and properly dispose of it off –site in accordance with Section 02120 – Off-Site Transportation and Disposal.

END OF SECTION

SECTION 02370

EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Provide and install all materials, equipment, and labor necessary for the removal of stormwater runoff/surface water and to place erosion and sedimentation control measures in accordance with the applicable erosion and sediment control regulatory requirements and standards, as shown on the Construction Contract Drawings and specified herein. At the completion of the construction, provide all materials, equipment, and labor necessary for the removal, transport and disposal of temporary erosion and sediment control measures not specified to remain. Downgradient from disturbed areas, remove, transport, and dispose of accumulated sediment resulting from control measures in a manner consistent with overall intent of this specification and which does not result in additional erosion.

B. Provide and install all erosion and sediment control measures in accordance with the applicable erosion and sediment control regulatory requirements, standards and specifications and as required by field conditions during the execution of the Work. Conducting the Work in accordance with the control measures shown on the Construction Contract Drawings does not relieve the CONTRACTOR of responsibility for completing the Work in a manner that minimizes erosion when field conditions occur that require additional or different measures.

C. Temporary erosion and sediment control measures shall be installed as the first step in construction, shall be continuously maintained, and shall not be removed until permanent surface stabilization of all disturbed areas is to the ENGINEER's satisfaction.

D. Permanent controls or surface stabilization shall commence within 14 days of completion of filling and grading activities.

E. Not all erosion and sedimentation control measures described in this specification are shown or referenced on the Construction Contract Drawings. Other measures as described and specified herein may be used to augment the proposed measures referenced on the Construction Contract Drawings based on actual field conditions encountered.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01110 – Summary of Work.

B. Section 01330 – Submittal Procedures.

C. Section 02300 – Earthwork.

1.03 REFERENCES AND GUIDELINES

A. New York Guidelines for Urban Erosion and Sediment Control, April 1997 by the Urban Soil Erosion and Sediment Control Committee which includes the following contributors: New York State Soil & Water Conservation Committee; Agronomy Department, Cornell University; Agricultural Engineering Department, Cornell University; New York State Department of Environmental Conservation (DEPARTMENT); New York State Department of Transportation; New York Chapter of Land Improvement Contractors of America; O'Brien and Gere Engineers, Inc.; and USDA-Natural Resources Conservation Service (formerly the Soil Conservation Service).

B. New York Standards and Specifications for Erosion and Sediment Control, August 2005 by the NYS Soil and Water Conservation Committee.

C. Standards Specifications, State of New York Department of Transportation, May 4, 2006 by the New York State Department of Transportation (NYSDOT).

1.04 REVIEW AND/OR INSPECTION OF SEDIMENTATION CONTROL MEASURES

All construction under this project shall be subject to review and/or inspection by the appropriate local, State, and Federal agencies responsible for ensuring the adequacy of sedimentation control measures.

1.05 SUBMITTALS

A. The CONTRACTOR shall submit to the ENGINEER a Stormwater Pollution Prevention Plan (SWPPP). There will not be a state-mandated approval process, so no State fees associated with the SWPPP will be assessed.

B. The CONTRACTOR shall include a description of their proposed means and methods to control erosion and sedimentation in the Construction Work Plan to be submitted per the requirements of Section 01110 – Summary of Work.

C. The CONTRACTOR shall submit manufacturer's data for all materials incorporated into the Work to the ENGINEER.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Silt Fence:

1. Fabric – Silt fence geotextile shall meet the following properties:

Fabric Properties	Minimum Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682

Fabric Properties	Minimum Value	Test Method
Mullen Burst Strength (psi)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	---
Equivalent Opening Size	40-80	US Standard Sieve
Ultraviolet Stability (%)	90	ASTM G26

2. Fence Posts – The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a cross sectional area of 3.0 square inches. Steel posts will be standard "T" or "U" section weighing not less than 1.0 pounds per linear foot.
3. Wire fence for reinforced silt fence (fabricated units) – Wire fencing shall be a minimum 14-1/2 gauge with a maximum 6 inch mesh opening.
4. Prefabricated reinforced silt fence – Envirofence or approved equal may be used for reinforced silt fence in lieu of reinforced fence fabricated with wire fence.

B. Mulch: For protection of newly seeded areas where erosion control blanket is not used.

1. Straw or hay free from primary noxious weed seeds and rough or woody materials and having not more than 15% moisture content. Provide hay or straw meeting the requirements of subsection 713-18 and/or 713-19 in the NYSDOT Standard Specifications.
2. Wood chips used for mulch or erosion control shall not exceed 3 inches in the greatest dimension and shall meet the requirements of subsection 713-05 in the NYSDOT Standard Specifications.
3. Wood fiber for use as mulch in conjunction with establishment of vegetation, shall meet the requirements of subsection 713-11 in the NYSDOT Standard Specifications.

C. Hay Bales: Hay bales shall consist of rectangular-shaped bales of hay or straw weighing approximately 40 pounds per bale and shall be free from primary noxious weed seeds and rough or woody materials.

D. Temporary Protective Sheeting: Temporary sheeting material shall consist of minimum 6-mil polyethylene sheeting or a suitable approved alternative and of sufficient size to minimize seams.

E. Seed for Erosion Control:

1. Temporary Control: Annual or perennial ryegrass or winter rye (cereal rye). Use winter rye if seeding in October or later.

F. Filter Berm:

1. Shall consist of shredded bark, stump grindings, composted bark, or acceptable manufactured products. Wood and bark chips, ground

construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.

2. Erosion control mix shall contain a well-graded mixture of particle sizes and may contain rocks less than 4" in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth.

G. Filter Sock:

1. The filter sock shall consist of a mesh tube (or sock) filled with a filter media consisting of wood waste compost/bark.
2. The filter sock (inclusive of the mesh and filter media) shall be specifically designed for soil erosion and sedimentation control purposes.

PART 3 - EXECUTION

3.01 PERFORMANCE

A. It is the CONTRACTOR's responsibility to implement and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion and sedimentation.

B. Earth moving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.

C. Land disturbance shall be kept to a minimum. Stabilization activities shall be scheduled immediately after any disturbance

D. Diverting Surface Water:

1. Build, maintain, and operate any temporary berms, swales, channels, flumes, sumps, and other temporary diversion and protection works needed to divert surface water through or around the work area and away from Work until surface stabilization has occurred.
2. Storm runoff from disturbed areas must discharge through temporary erosion control measures shown on the Construction Contract Drawings prior to discharge from the Site.

E. Erosion Control Provisions (as necessary):

1. Protect areas where existing banks are to be disturbed by constructing straw/hay bale or earth dikes at the top of slope to divert storm runoff from the disturbed area or at the toe of the slope to retain sediments, as conditions permit.
2. All discharge from any necessary pumping operations during dewatering operations shall be conveyed to an on-site storage tank. No pumped water shall be released as surface water or to the on-site stormdrain system. Refer to additional requirements in Section 02245 – Construction Water Management.

3. Prior to removal of sediment barriers, remove retained silt or other materials at no additional cost to the Contract.

F. Silt Fence: Install silt fence if required as a supplementary measure. The silt fence shall be installed on a level line (parallel to contours) to avoid concentrated flow areas along the fence. The area below the fence must be undisturbed or stabilized.

G. Temporary Protective Sheeting: Soil stockpiles shall be protected with sheeting prior to forecasted significant rain events (0.5 inches or more) or as conditions require based on observed slope conditions. Overlap adjacent sheets by a minimum of 12 inches and securely anchor sheeting with sand bags and/or soil pegs, staples or stakes.

H. Filter Berms: Sediment barriers constructed from berms of erosion control mix, compost/bark, or compost-filled filter socks maybe used at locations suitable for their use and as approved by the ENGINEER.

I. Mulch: Conduct mulching immediately following seeding. For the mulching type used, apply mulch materials at the rate specified in Table 3.7 and anchor as specified in Table 3.8 in the New York Standards and Specifications for Erosion and Sediment Control.

J. Seed for Erosion Control:

1. Temporary Seeding: Minimum application rate of ryegrass (annual or perennial) shall be 30 pounds per acre and minimum application rate for winter rye shall be 100 pounds per acre.

K. Sediment Barriers: Sediment barriers constructed from berms of erosion control mix, compost/bark, or compost-filled filter socks maybe used at locations suitable for their use and as approved by the ENGINEER.

3.02 MAINTENANCE

A. The CONTRACTOR shall be held responsible for the implementation and maintenance of all erosion control measures on the Site.

B. Throughout construction and until the Site has been stabilized upon completion of the Work, all erosion and sediment control measures will require periodic inspection and maintenance to ensure that such measures are providing effective service. At a minimum, the following inspection and maintenance shall be required during execution of this project:

1. All erosion and sediment control will be inspected at least once a week and after all rain events. Conduct required repairs to installed measures immediately to ensure continued effective operation.
2. Remove sediment that has accumulated in the filter bag of the catchbasin inlet filters when it has reached the capacity limit recommended by the manufacturer.

3. Remove sediment that has accumulated behind the sedimentation fencing when it has reached a depth of approximately 0.5 feet deep or removed as needed when bulges develop in the fence. The sedimentation fence shall be repaired as necessary to maintain the barrier as intended.
4. Sediment removed from control measures shall be collected and segregated as waste to be characterized, and properly disposed of off-site. No sediment shall be disposed of on-site.
5. All seeded areas will be protected from traffic and shall receive appropriate watering during germination and growth establishment. Areas that do not establish a vigorous, dense vegetative cover (at least 80% surface coverage) shall be reseeded and mulched.

C. Maintain the integrity of all erosion control measures throughout construction period.

3.03 SPECIAL CONDITIONS

A. Prohibited Construction Practices - Prohibited construction practices include but shall not be limited to the following:

1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters, stormdrain system, or at any other unspecified locations.
2. Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or any surface waters.
3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors, any wetlands, or any stormdrain system.
4. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface water or at unspecified locations.
5. Permanent or unspecified alteration of the flow line of any stream.
6. Open burning of construction debris.

B. Winter Stabilization – Beyond October 15, (when temporary seeding is not likely to germinate) mulch shall be used as a temporary soil stabilization measure.

1. Mulch shall be applied to exposed soil surfaces at double the mulching rates indicated in Sub-Part 3.01I. Note that wood fiber may not be used as mulch during winter conditions.
2. Mulch shall be anchored using one of the methods prescribed in Sub-Part 3.01I.

3.04 ADJUSTMENT OF PRACTICES

A. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the ENGINEER or regulatory agencies having jurisdiction over the project, the CONTRACTOR shall immediately adjust their program and/or institute additional measures so as to eliminate excessive erosion and sediment runoff.

B. If the CONTRACTOR fails or refuses to comply promptly, the DEPARTMENT may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR.

3.05 REMOVAL OF TEMPORARY WORKS

A. Remove or level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

END OF SECTION

SECTION 02921

SEEDING AND SOIL SUPPLEMENTS

PART 1 – GENERAL

1.01 DESCRIPTION

A. For restored areas to be vegetated as indicated on the Construction Contract Drawings, provide seed as specified herein.

B. Furnish and place topsoil, lime, fertilizer, seed, and mulch or erosion control matting in the areas indicated within the limit of work.

C. Maintain new seeding through the contract maintenance period.

D. Disturbed areas outside the limit of work may be seeded and mulched without the addition of Topsoil as approved by the ENGINEER.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01330 – Submittal Procedures

B. Section 02300 – Earthwork

C. Section 02370 – Erosion and Sediment Control

1.03 REFERENCES AND GUIDELINES

A. New York Standards and Specifications for Erosion and Sediment Control (NYS SESC), August 2005 by the NYS Soil and Water Conservation Committee.

B. Standards Specifications, State of New York Department of Transportation (NYSDOT SS), May 4, 2006 by the New York State Department of Transportation (NYSDOT).

1.04 SUBMITTALS

Submit the following in accordance with Section 01330 – Submittal Procedures.

A. Grass Seed Vendor's Certificate:
Subcontractor shall submit the seed vendor's certified statement for the grass seed mixture required, showing common name, percentage of seed mix by weight, percentages of purity and germination, year of production, date of packaging, and location of packaging.

B. Fertilizer:
Subcontractor shall submit the fertilizer manufacturer's product data showing chemical analysis and percent composition.

C. Hydraulic Seeding Method:
If the Hydraulic Seeding Method is used, submit a certified statement as to the number of pounds of materials to be used per 100 gallons of water, and specify the number of square feet of seeding that can be covered with the quantity of solution in the hydroseeder.

1.05 DEFINITIONS

A. Limit of Work:
Restoration with seed and mulch shall be performed on all disturbed areas within the limit of work as delineated on the Construction Contract Drawings.

The exception to these requirements is a for those areas that require alternate stabilization with erosion control matting, or riprap as shown on the Construction Contract Drawings or described in Section 02370 - Erosion and Sediment Control.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General:
Obtain and retain as part of the project records, certifications, and/or labels of materials supplied.

B. Topsoil:
Refer to Section 02300 - Earthwork.

C. Fertilizer:
Supply fertilizer meeting the recommendation of the testing laboratory nutrient analysis for the Topsoil. At a minimum provide a standard commercial 5-10-10 grade containing at least 10 percent available nitrogen, 10 percent readily available phosphoric acid and 10 percent total available potash in conformity with the Standards of the Association of Official Agricultural Chemists. Supply in unopened bags with the weight, contents and guaranteed analysis shown thereon or on a securely attached tag.

D. Lime:

1. Apply ground limestone (equivalent to 50% calcium plus magnesium oxide) at a rate recommended by the testing laboratory based on the results of their nutrient analysis of the Topsoil. At a minimum apply 3 tons per acre (135 pounds. per 1,000 square feet).
2. Provide ground agricultural limestone (fine ground dolomite) conforming to the requirements of NYSDOT SS M.18.05.1. The gradation shall consist of 40 but not more than 60 percent finer than the No. 60 sieve and 50 percent finer than the No. 100 sieve.

E. Seed for Permanent Vegetation:
Shall meet the following minimum requirements:

1. The grass seed mixture shall include no "primary noxious weed seeds."
2. Furnish in fully-labeled, standard sealed containers.
3. Percentage and germination of each seed type in the mixture, purity, and weed seed content of the mixture shall be clearly stated on the label.
4. The weight of pure live seed (PLS) is computed by the labeled purity percent times the labeled germination percent times the weight. To illustrate the method of computing to PLS from the tag basis, the following example is given: Required: 20 pounds PLS of a particular variety—stock available is 99.41% pure and 92% germination—20 divided by the product of 0.9941 and 0.92 equals 21.8 pounds on the tag basis to furnish 20 pounds of PLS.
5. Subject to the testing provisions of the Association of Official Seed Analysis, with the month and year of test clearly stated on the label.
6. Seed which has become wet, moldy, or otherwise damaged will not be acceptable.
7. All seed shall be certified as to mixture, germination, purity, and live seed as follows:

   Percent germination > 80%
   Pure Live Seed (PLS) > 85%
   Percent Purity > 85%
   Weed Seed < 1%

   All seed shall be from the current year's crop unless recent tests by an approved testing agency demonstrate that older seed meets the above requirements.
8. Use the seed mix specified in Attachment 02921-1 for general upland areas; Attachment 02921-2 for riparian areas; and Attachment 02921-3 for select portions of the riparian area. The limits for each type or seeding area are delineated on the Construction Contract Drawings.
9. Seed mixes by New England Wetland Plants, Inc. or other suitable equals may be used if approved by the ENGINEER.
10. For temporary seeding requirements see Section 02370 - Erosion and Sediment Control.

F. Mulch:
Refer to Section 02370 - Erosion and Sediment Control for mulching requirements.

G. Erosion Control Matting:
Refer to Section 02370 - Erosion and Sediment Control for erosion control matting requirements.

PART 3 – EXECUTION

3.01 PREPARATION

A. All Areas to be Seeded:

1. Shall be worked as necessary to provide a reasonably firm but friable seedbed.
2. Shall meet the specified grades and are free of growth and debris.
3. Take care to prevent the formation of low places and pockets where water will stand.

B. Depth of Tillage:

1. Two (2) inches or as directed by the ENGINEER.
2. On slopes steeper than 3:l, reduce depth of tillage as directed.
3. Where ryegrass has been planted for temporary erosion control and has not been eliminated prior to the completion of the Work, disk at least 4 inches deep and seed to permanent grasses.

3.02 APPLICATION

A. Topsoil:
Topsoil shall be placed using earth moving equipment. The soil shall be spread and tracked to a uniform depth as indicated on the Construction Contract Drawings. The soil surface shall be left free of ruts or channels. Remove all large stiff clods, lumps, brush, roots, stumps, litter, and other foreign material and stones over 3-inch in size. See Section 02300 - Earthwork for additional requirements.

B. Fertilizer and Lime:

1. Apply by means of a mechanical spreader or other acceptable method which is capable of maintaining a uniform rate of application.
2. Conduct when the soil is in a moist condition and at least 24 hours before sowing the seed.
3. Fertilizer shall be applied at the rate based on the results of the nutrient analysis specified in Section 02300 – Earthwork. If the default 5-10-10 fertilizer is utilized, apply at a rate of 600 pounds per 1 acre.

C. Seeding:

1. Perform erosion control items of work such as seeding and mulching as soon as practical for areas of suspended work or areas of completed work.
2. When seeding is required on areas of the project where work is not complete but will be suspended for an extended period, use the appropriate temporary seed mix specified in Section 02370 – Erosion and Sediment Control.
3. When seeding is required on areas of the project where grading is complete, use the specified permanent seed mixture.

4. Apply permanent seed mix between April 1 to May 31 (Spring Seeding) or August 15 to October 15 (Fall Seeding) at the rates noted in Table 02921-1:

Table 02921-1

Seed Mix Type	Variety	Rate in lbs per 1,000 sf
Birdsfoot trefoil	Empire/Pardee	0.02
Tall fescue	KY-31/Rebel	0.45
Ryegrass (perennial)	Pennfine/Linn	0.10

5. Planting between October 15 and April 1 shall be considered Winter Seeding and shall be subject to the additional requirements described in Sub-Part 3.04.
6. Special care must be taken if seeding must occur during the generally hot, dry period from June to August.
7. Seeding Restrictions:
   Do not seed during windy weather or when the ground is excessively wet, or otherwise untillable.

D. Mulch:

1. Undertake immediately after each area has been properly prepared and seeded.
2. Apply the selected mulch type at the rates noted in Table 3.7 of the NYS SESC on all seeded areas not otherwise protected with erosion control matting.
3. Blowing chopped mulch shall be permitted provided mulch anchoring is performed.
4. Hay or straw mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see ground through the mulch.
5. Remove matted mulch or bunches.
6. Collect and dispose of all baling wire or rope off-site.

3.03 SEEDING METHODS

A. General:
Fertilizer, limestone, mulch material if required, and seed of the type specified may be placed at the locations shown or ordered by one of the following methods, provided an even distribution is obtained. The maximum seeding depth shall be 1/4-inch when using methods other than hydroseeding.

B. Dry Method:

1. Power Equipment: Use mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment or attachments when seed, limestone, and fertilizer are to be applied in dry form.

2. Manual Equipment: On areas which are inaccessible to power equipment, permission may be given to use hand-operated mechanical equipment when the materials are to be applied in dry form. The use of hand shovels to spread the materials will not be allowed.
3. Do not mix limestone and fertilizer together prior to their application, but work into the soil together to the specified depth.
4. After seeding, compact the entire area by a suitable roller weighing 60 to 90 lbs. per linear foot.
5. Allow at least 24 hours between fertilizing and seeding.
6. Unless otherwise ordered, mulch areas covered with seed.

C. Hydraulic Method:

1. The application of grass, seed, fertilizer, limestone, and suitable mulch, if approved, may be accomplished in one operation by the use of an approved spraying machine.
2. Mix materials with water in the machine and keep in an agitated state in order that the materials may be uniformly suspended in the water.
3. The spraying equipment shall be so designed that when the solution is sprayed over an area, the resulting deposits of limestone, fertilizer, and grass seed are equal in quantity to the required rates.
4. Flush and clean hydraulic seeding and fertilizing machine each day before seeding is to be started, and thoroughly flush of all residue after the completion of application on every 10 acres.
5. If the results of the spray operations are unsatisfactory, abandon this method and apply the materials by the dry method.
6. When inoculum is required, mix with the seed and spray.
7. Compaction or rolling not required.
8. If mulch material is not applied during the seeding operation apply mulch within 1/2 hour following the seeding operation.

3.04 WINTER (DORMANT) SEEDING

Applies to seeding that occurs between October 15 and April 1 when ground temperatures are generally unfavorable for seed germination.

A. Seed Application Rate:
The permanent seed mix shall be applied at rate of 70 pounds per acre which is an approximate 25 percent increase in the rate specified in Sub-Part 3.02C4.

B. Mix Modification:
A companion crop of winter or annual rye shall be added to the mix at a rate of 52 pounds per acre (1.2 pounds per 1,000 square feet).

C. Method Modification:
On areas with slopes less than 10 percent, hydraulic methods of seeding shall not include a seed/mulch mix. Instead, provide two separate applications, first seed, and then mulch.

D. Mulch Type Modification:
Wood fiber (cellulose) mulch is not permitted for winter applications. Wood chips or hay/straw mulch shall be utilized on areas where erosion control matting is not required.

3.05 CARE AFTER SEEDING

A. Acceptance:
To be acceptable, grass shall show a reasonably thick, uniform stand, free from sizable areas of thin or bare spots, with a minimum coverage of approximately 80 percent as agreed by the Subcontractor and ENGINEER.

B. Repair:
Reseed any seeded areas which fail to show a uniform stand until all areas are covered with acceptable grass growth.

C. Maintenance Period:
One year from substantial completion.

END OF SECTION

APPENDIX C

COMMUNITY AIR MONITORING PLAN

MACTEC
engineering and constructing a better tomorrow

March 27, 2014

Division of Environmental Remediation
Region 9
New York State Department of
Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Attention: Mr. Michael J. Hinton, Project Manager

Subject: **Community Air Monitoring Plan – Interim Remedial Measure**
Peters Dry Cleaning; Site Number 932128
MACTEC Engineering and Consulting, P.C. Project No. 3612122244

Dear Mr. Hinton:

This Community Air Monitoring Plan (CAMP) has been prepared by MACTEC Engineering and Consulting, P.C. (MACTEC) in response for Work Assignment No. D007619-18 from the New York State Department of Environmental Conservation (NYSDEC) for the Peters Dry Cleaning site (Site) in Lockport, Niagara County, New York. MACTEC will be overseeing an interim remedial measure (IRM) consisting of the excavation, transport and disposal of contaminated soil at the Site on behalf of the NYSDEC. As part of the IRM a CAMP has been devised in accordance with the New York State Department of Health (NYSDOH) Generic CAMP (Appendix 1A).

This NYSDOH CAMP is a stand-alone companion document to the Site-specific health and safety plan (HASP), and is further defined below. The Site-specific HASP provides details related to health and safety for on-site activities for MACTEC personnel and the CAMP details air monitoring activities to protect the surrounding community. The NYSDEC call out contractor will conduct work under their own work plan and HASP.

Purpose. This CAMP will be implemented during the excavation and removal of soils from the proximity of the Site. The purpose of the CAMP is to provide a measure of protection for the downwind community, more specifically off-site receptors including residents and workers, from potential airborne contaminant releases as a result of remedial work activities performed at the Site.

Particulate Air Monitoring. Particulate monitoring will be conducted during ground intrusive activities at the Site in accordance with the Fugitive Dust and Particulate Monitoring from DER-10 Technical Guidance for Site Investigation and Remediation (Appendix 1B). Dust and particulate monitoring will be conducted near the approximate upwind and downwind perimeters of the exclusion zone, when possible, or where dust generating operations are apparent. Dust monitoring may be suspended during periods of precipitation and snow cover.

Particulate air monitoring will be conducted with a DataRAM-4 (or a similar device). This instrument is equipped with an audible alarm (indication of exceedance) and is capable of measuring particulate matter less than 10 micrometers in size (PM-10). It will continually record emissions (calculating 15-minute running average concentrations) generated during field activities. The dust monitoring devices will be checked and recorded periodically throughout the day of intrusive activities to assess emissions and the need for corrective action.

Particulate monitoring response and action levels include:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) 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 $\mu g/m^3$ 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 $\mu g/m^3$ 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 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

Volatile Organic Compound Air Monitoring. Volatile organic compound (VOC) air monitoring will be conducted in conjunction with the dust monitoring program. VOC air monitoring will be

conducted using a RAE Systems MiniRAE 2000 VOC instrument (or a similar photoionization detector device) to provide real-time recordable air monitoring data. VOC monitoring will be conducted for ground intrusive (continuous monitoring) and non-intrusive activities (periodic monitoring).

VOCs will be monitored and recorded at the downwind perimeter of the immediate work area. Upwind concentrations will be measured before field activities commence and periodically throughout the day to establish background conditions. The downwind VOC monitoring device will also be checked periodically throughout the day to assess emissions and the need for corrective action.

VOC monitoring response and action levels include:

- 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 the organic vapor level remains sustained above 5 ppm at the perimeter of the work area, activities must be shutdown and work will be re-evaluated.

Weather conditions, including the prevailing wind direction, will be observed and recorded for each day of site activities. As work and weather conditions change throughout the day, the locations where the VOC monitoring devices are set up may be adjusted accordingly.

Documentation and Calibration. The volatile organic compound air monitoring device shall be calibrated prior to daily field activities according to manufacturer's instructions and standard industrial hygiene practices. In addition, monitoring instruments will be checked for “drift” upon completion of daily field activities. Calibration measurements will be recorded on a field data record. Field measurements will be recorded and available for State (NYSDEC and NYSDOH) personnel to review. The particulate monitoring device is factory calibrated on an annual basis. Upon completion of field activities, available monitored data recorded will be downloaded, evaluated and summarized in the Remedial Investigation Report.

Meteorological Data. Wind direction is the only meteorological data considered relevant for the remedial activities and CAMP. To evaluate wind direction, a windsock, wind vane, or other equivalent equipment will be used. Wind direction will be established at the start of each work day, and may be reestablished during the day should a significant shift in wind direction be noted. These results will be utilized to position the particulate monitoring and VOC monitoring equipment in appropriate upwind and downwind locations. Wind direction and location of the monitoring stations will be noted on daily field logs.

If you have questions or concerns, please contact Chuck Staples, or Jayme Connolly, at 207-775-5401.

Sincerely,

MACTEC Engineering and Consulting, P.C.

Jayme Connolly
Project Manager

Charles Staples, C.G.
RI Task Lead

Enclosures:

Appendix 1A:	NYSDOH Generic CAMP
Appendix 1B:	Fugitive Dust and Particulate Monitoring from DER-10 Technical Guidance for Site Investigations and Remediation

APPENDIX 1A

NYSDOH GENERIC CAMP

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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 DEC/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 baling/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, particularly if wind direction changes. 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.

1. 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.

2. 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.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) 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.

1. 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 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/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 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

APPENDIX 1B

FUGITIVE DUST AND PARTICULATE MONITORING FROM DER-10 TECHNICAL GUIDANCE FOR SITE INVESTIGATIONS AND REMEDIATION

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50° C (14 to 122° F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX D

BORING LOGS AND ANALYTICAL DATA

Table 1

Soil Analytical Testing Results Summary from Phase II ESA
Brownfields Cleanup Program
Site Investigation Summary Report
Peters Dry Cleaning
Lockport, New York

Parameter	NYSDEC TAGM 4046 RSCO	GP-3 9.5 ft bgs	GP-5 6 to 8 ft bgs	GP-8 4 to 6 ft bgs	GP-9 5 to 7 ft bgs	GP-15 6 to 6.5 ft bgs
Volatile Organic Compounds - EPA Method 8260 TCL (mg/kg)						
1,1-Dichloroethene	0.4		0.03 J			
trans-1,2-Dichloroethene	0.3		0.3			
cis-1,2-Dichloroethene	NV	0.56	22	0.052J	0.27	
Trichloroethene	0.7		0.071 J		0.06 J	
Tetrachloroethene	1.4		0.2		0.2	0.053J
Ethylbenzene	5.5		1.4	0.034J		0.41
m&p-Xylene	1.2 [8]		4.4	0.066J		1.6
o-Xylene	1.2 [8]		2.2	0.10		0.67
Isopropylbenzene	5		4.9	0.25		1.5
n-Propylbenzene	14		18	0.54		5.4
1,3,5-Trimethylbenzene	3.3		50	0.15		10
1,2,4-Trimethylbenzene	13		150	4.9		41
sec-Butylbenzene	25		7.1	0.65		3
p-Isopropyltoluene	11		16	0.86		6.6
Naphthalene	13		5.9	0.54		0.94
Semi-Volatile Organic Compounds - EPA Method 8270 STARS List (mg/kg)						
Naphthalene	13		4.8			1.3
2-Methylnaphthalene	36.4		2.9			0.33
Acenaphthylene	41		1.4			
Fluorene	50		1			
Phenanthrene	50		4.9			
Anthracene	50		1.9			
Fluoranthene	50		2.2			
Pyrene	50		2.7			
Benzo [a] Anthracene	0.224 or MDL		1.2			
Chrysene	0.4		1.3			
Benzo [b] Fluoranthene	1.1		0.58			
Benzo [k] Fluoranthene	1.1		0.68			
Benzo [a] Pyrene	0.061 or MDL		0.97			

1. Compounds detected in one or more samples are presented on this table.
   Refer to Attachment D for list of all compounds included in analysis.
2. Analytical testing completed by GZA GeoEnvironmental Laboratory.
3. Recommended Soil cleanup objectives (RSCOs) based on the NYSDEC TAGM 4046
   'Determination of Soil Cleanup Levels dated January 1994.
4. ug/kg = part per billion (ppb) and mg/kg = parts per million.
5. NV = no value.
6. ft bgs = feet below ground surface.
7. Shading indicates values exceeding RSCO.
8. TAGM 4046 RSCO shown is for total xylene concentration.
9. J = estimated concentration.

Table 4
Soil Analytical Testing Results Summary
Brownfields Cleanup Program
Site Investigation& Alternative Analysis Report
Peters Dry Cleaning
Lockport, New York

Parameter	Unrestricted Use Soil Cleanup Objectives	Residential SCOs	Restricted Residential SCOs	Protection of Groundwater SCOs	Commercial SCOs	SP-1 8-10 ft bgs 03/05/2009 Off-Site	SP-2 8-10 ft bgs 3/5/2009 Off-Site	SP-3 10-12 ft bgs 3/5/2009 Off-Site	SP-4 10-11.5 ft bgs 3/5/2009 Off-site	SP-5 10-12 ft bgs 3/5/2009 Off-Site	SP-6 10-12 ft bgs 3/5/2009 Off-Site	SP-7 10-11.2 ft bgs 11/17/2009 On-Site	SP-8 12-15.2 ft bgs 11/17/2009 On-Site	SP-9 0-2 ft bgs 11/17/2009 Off-Site	SP-10 5-6 ft bgs 11/17/2009 On-Site	SP-11 4-6 ft bgs 11/17/2009 On-Site	SP-11 8-10 ft bgs 11/17/2009 On-Site	SP-12 8-9 ft bgs 11/17/2009 On-site	SP-17 0-4 ft bgs 12/29/2009 Off-Site	SP-22 8-11.4 12/30/2009 Off-Site
Volatile Organic Compounds - EPA Method 8260 TCL (ug/kg)																				
Acetone	50	**100,000**	**100,000**	50	*500,000*	17 J									7.2 J					
Carbon disulfide	NV	**NV**	**NV**	NV	*NV*	1.3 J														
cis-1,2-Dichloroethene	250	**59,000**	**100,000**	250	*500,000*			50		4.1 J	150		20 J			20		2.7 J		
Tetrachloroethene	1,300	**5,500**	**19,000**	1,300	*150,000*			8.8	680	2.4 J	18		8.5	52	5.0 J	230	1,900,000	8.3		
Trichloroethene	470	**10,000**	**21,000**	470	*200,000*			2.4 J			4.3 J		8.6	6.5	2.7 J	26	45,000	7.2		
trans-1,2-Dichloroethene	190	**100,000**	**100,000**	190	*500,000*						1.6 J									
Toluene	700	**100,000**	**100,000**	700	*500,000*				38 J											
Ethylbenzene	1,000	**30,000**	**41,000**	1,000	*390,000*				1,100											
m&p-Xylene	260	**100,000**	**100,000**	1,600	*500,000*				4,500								9,600 NJ			
o-Xylene	260	**100,000**	**100,000**	1,600	*500,000*				180											
Methylcyclohexane	NV	**NV**	**NV**	NV	*NV*				9,800											
Methylene Chloride	50	**51,000**	**100,000**	50	*500,000*				350				5.7		4.5 J	7.8		1.8 J		
Isopropylbenzene	NV	**NV**	**NV**	NV	*NV*				1200 J			510 NJ					8,800 NJ			
n-Propylbenzene	3,900	**100,000**	**100,000**	3,900.0	*500,000*							1,100 J			7.0 NJ		21,000			
1,3,5-Trimethylbenzene	8,400	**47,000**	**52,000**	8,400	*190,000*							260 NJ				3.7 J	84,000			
tert-Butylbenzene	5,900	**100,000**	**100,000**	5,900	*500,000*							1,800 J					33,000			
1,2,4-Trimethylbenzene	3,600	**47,000**	**52,000**	3,600	*190,000*							2,400 NJ		4.5 J		12	200,000			
sec-Butylbenzene	11,000	**100,000**	**100,000**	11,000	*500,000*							1,800 J			100 NJ		16,000 NJ			
p-Isopropyltoluene	NV	**NV**	**NV**	NV	*NV*							1,800 J			200 J	2.7 NJ				
n-Butylbenzene	12,000	**100,000**	**100,000**	12,000	*500,000*							2,100 NJ			99 NJ		29,000 NJ			
Vinyl chloride	20	**210**	**900**	20	*13,000*						2.9 J									
Naphthalene	12,000	**100,000**	**100,000**	12,000	*500,000*														3.8 J	
Xylenes, total	260	**100,000**	**100,000**	1,600	*500,000*				4,700								9,600 NJ			

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Test America in Buffalo, New York.
3. Soil cleanup objectives (SCOs)are from NYSDEC 6NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
4. ug/kg = part per billion
5. NV = no value.
6. Shading indicates value exceeds Protection of Groundwater SCO.
7. Bold indicates value exceeds Restricted Residential Soil Cleanup Objectives.
8. Italics indicates value exceeds the Commercial Soil Cleanup Objectives.
9. Results presented for SP-3, 10 -12 ft and SP-8, 12-15.2 ft are the higher of these samples or their respective duplicate samples.
10. J = estimated concentration detected less than the Reporting Limit and greater than the Method Detection Limit.

Table 4.1: Soils VOC Analytical Results

			Location	DP-01		DP-01 (duplicate)		DP-01	DP-01		DP-02		DP-02	
			Sample Date	10/20/2013		10/20/2013		10/24/2013	10/24/2013		10/20/2013		10/23/2013	
			Sample ID	932138-DP001002		932138-DP001002XD		932138-DP001004	932138-DP001012		932138-DP002002		932138-DP002006	
			Top Depth	0		0		4	12		0		6	
			Bottom Depth	2		2		5	12.8		2		7	
			QC Code	FS		FD		FS	FS		FS		FS	
Parameter	**Soil Cleanup Objectives**			Result	Qualifier	Result	Qualifier	Result	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**											
Tetrachloroethene	1.3	1.3	5.5	**30**	J	**40**	J	**10**	**0.12**		**0.31**	J	0.18	U
Trichloroethene	0.47	0.47	10	**2.1**		**3**		**0.3**	**0.021**	J	**0.15**	J	0.18	U
Cis-1,2-Dichloroethene	0.25	0.25	59	**0.15**		**0.27**		**0.029**	**0.44**		**0.39**	J	**1.7**	
trans-1,2-Dichloroethene	0.19	0.19	100	**0.023**	J	**0.034**	J	0.044	0.046	U	0.41	U	0.18	U
Vinyl chloride	0.02	0.02	0.21	0.062	U	0.065	U	0.044	**0.15**		0.41	U	**0.25**	
Total Chlorinated VOCs				32		43		10	0.73		0.85		2.0	
2-Hexanone	NA	NA	NA	0.31	UJ	0.33	UJ	0.22	0.23	U	2.1	U	0.92	U
Acetic acid, methyl ester	NA	NA	NA	0.062	U	**0.039**	J	0.044	0.046	U	0.41	U	0.18	U
Benzene	0.06	0.06	2.9	0.062	U	0.065	U	**0.029**	0.046	U	0.41	U	0.18	U
Cyclohexane	NA	NA	NA	**0.03**	J	0.065	U	0.044	0.046	U	0.41	U	0.18	U
Ethyl benzene	1	1	30	0.062	U	0.065	U	0.044	0.046	U	0.41	U	**0.085**	J
Isopropylbenzene	NA	NA	NA	0.062	U	0.065	U	0.044	**0.013**	J	0.41	U	**0.26**	
Methyl cyclohexane	NA	NA	NA	**0.087**		**0.048**	J	**0.023**	0.046	U	0.41	U	**0.16**	J
Methylene chloride	0.05	0.05	51	0.062	U	0.065	U	0.044	0.046	U	0.41	U	0.18	U
Toluene	0.7	0.7	100	0.062	U	0.065	U	**0.012**	0.046	U	0.41	U	0.18	U
Xylenes, Total	0.26	1.6	100	0.12	U	0.13	U	0.089	**0.011**	J	0.83	U	**0.28**	J
Total Non-chlorinated VOCs				0.12		0.087		0.064	0.024		ND		0.79	
Percent Solids	NA	NA	NA	**81**		**79**		**87**	**92**		**90**		**87**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-03		DP-03		DP-03		DP-04		DP-04		DP-05	
				Sample Date	10/20/2013		10/24/2013		10/24/2013		10/23/2013		10/23/2013		10/23/2013	
				Sample ID	932138-DP003002		932138-DP003005		932138-DP003009		932138-DP004005		932138-DP004008		932138-DP005005	
				Top Depth	0		5		9		5		8		5	
				Bottom Depth	2		6		10		8		10.4		6.5	
				QC Code	FS		FS		FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		**0.48**		**0.17**	J	0.16	UJ	0.44	U	0.2	U	**0.68**	
Trichloroethene	0.47	0.47	10		**0.013**	J	**0.15**	J	0.16	UJ	0.44	U	0.2	U	**3.3**	
Cis-1,2-Dichloroethene	0.25	0.25	59		0.046	U	0.41	UJ	0.16	UJ	**0.42**	J	**0.23**	0	**0.67**	
trans-1,2-Dichloroethene	0.19	0.19	100		0.046	U	0.41	UJ	0.16	UJ	0.44	U	0.2	U	0.25	U
Vinyl chloride	0.02	0.02	0.21		0.046	U	0.41	UJ	0.16	UJ	0.44	U	0.2	U	0.25	U
Total Chlorinated VOCs					0.49		0.32		ND		0.42		0.23		4.7	
2-Hexanone	NA	NA	NA		0.23	UJ	2	UJ	0.78	UJ	2.2	UJ	1	U	1.3	U
Acetic acid, methyl ester	NA	NA	NA		**0.11**		0.41	UJ	0.16	UJ	0.44	U	0.2	U	0.25	U
Benzene	0.06	0.06	2.9		0.046	U	0.41	UJ	0.16	UJ	0.44	U	0.2	U	0.25	U
Cyclohexane	NA	NA	NA		0.046	U	**10**	J	**5**	J	**2.7**		**2.6**		0.25	U
Ethyl benzene	1	1	30		0.046	U	**7.1**	J	**1.2**	J	**4.9**		**2.9**		0.25	U
Isopropylbenzene	NA	NA	NA		0.046	U	**19**	J	**7.4**	J	**12**		**7.6**		**0.27**	
Methyl cyclohexane	NA	NA	NA		**0.037**	J	**57**	J	**44**	J	**12**		**9.1**		**12**	
Methylene chloride	0.05	0.05	51		0.046	U	0.41	UJ	0.16	UJ	0.44	U	0.2	U	**0.086**	J
Toluene	0.7	0.7	100		0.046	U	0.41	UJ	0.16	UJ	0.44	U	0.2	U	0.25	U
Xylenes, Total	0.26	1.6	100		0.093	U	**69**	J	**10**	J	**49**		**30**		0.51	U
Total Non-chlorinated VOCs					0.15		162		68		80.6		52		12	
Percent Solids	NA	NA	NA		**86**		**91**		**90**		**90**		**90**		**88**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-05		DP-06		DP-06		DP-06 (duplicate)		DP-07		DP-07	
				Sample Date	10/23/2013		10/23/2013		10/23/2013		10/23/2013		10/22/2013		10/22/2013	
				Sample ID	932138-DP005008		932138-DP006005		932138-DP006008		932138-DP006008XD		932138-DP007004		932138-DP007014	
				Top Depth	8		5		8		8		4		14	
				Bottom Depth	10.5		6		9		9		6		14.8	
				QC Code	FS		FS		FS		FD		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	**0.3**	
Trichloroethene	0.47	0.47	10		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	**0.033**	J
Cis-1,2-Dichloroethene	0.25	0.25	59		**0.41**		0.044	U	0.045	U	**0.011**	J	0.04	U	**1.1**	
trans-1,2-Dichloroethene	0.19	0.19	100		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	**0.02**	J
Vinyl chloride	0.02	0.02	0.21		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	**0.087**	
Total Chlorinated VOCs					0.41		ND		ND		0.011		ND		1.5	
2-Hexanone	NA	NA	NA		0.24	U	0.22	U	0.23	U	0.19	U	0.2	UJ	0.21	UJ
Acetic acid, methyl ester	NA	NA	NA		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Benzene	0.06	0.06	2.9		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Cyclohexane	NA	NA	NA		**0.17**		0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Ethyl benzene	1	1	30		**0.19**		0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Isopropylbenzene	NA	NA	NA		**0.17**		0.044	U	**0.021**	J	**0.018**	J	0.04	U	**0.03**	J
Methyl cyclohexane	NA	NA	NA		**0.53**		0.044	U	**0.023**	J	0.037	U	0.04	U	0.042	U
Methylene chloride	0.05	0.05	51		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Toluene	0.7	0.7	100		0.047	U	0.044	U	0.045	U	0.037	U	0.04	U	0.042	U
Xylenes, Total	0.26	1.6	100		**0.19**		0.088	U	0.09	U	0.075	U	0.079	U	0.085	U
Total Non-chlorinated VOCs					1.3		ND		0.044		0.018		ND		0.03	
Percent Solids	NA	NA	NA		**87**		**84**		**89**		**89**		**88**		**95**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-08		DP-08		DP-09		DP-09		DP-10		DP-10	
				Sample Date	10/23/2013		10/23/2013		10/23/2013		10/23/2013		10/23/2013		10/23/2013	
				Sample ID	932138-DP008006		932138-DP008008		932138-DP009007		932138-DP009008		932138-DP010005		932138-DP010008	
				Top Depth	6		8		7		8		5		8	
				Bottom Depth	8		9		8		9		6		9	
				QC Code	FS		FS		FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		**1.4**		**1.5**		**3**		**1.1**		0.041	U	0.049	U
Trichloroethene	0.47	0.47	10		**0.089**		**0.12**		**4**		0.46	U	0.041	U	0.049	U
Cis-1,2-Dichloroethene	0.25	0.25	59		**0.038**	J	**0.14**		**12**		**5.8**		0.041	U	0.049	U
trans-1,2-Dichloroethene	0.19	0.19	100		0.04	U	0.039	U	**0.29**	J	0.46	U	0.041	U	0.049	U
Vinyl chloride	0.02	0.02	0.21		0.04	U	0.039	U	0.91	U	0.46	U	0.041	U	0.049	U
Total Chlorinated VOCs					1.5		1.8		19.29		6.9		ND		ND	
2-Hexanone	NA	NA	NA		0.2	U	0.2	U	4.5	U	2.3	UJ	0.2	U	0.24	U
Acetic acid, methyl ester	NA	NA	NA		0.04	U	0.039	U	0.91	U	0.46	U	0.041	U	0.049	U
Benzene	0.06	0.06	2.9		0.04	U	0.039	U	0.91	U	0.46	U	0.041	U	0.049	U
Cyclohexane	NA	NA	NA		0.04	U	0.039	U	**2.6**		**3.2**		0.041	U	0.049	U
Ethyl benzene	1	1	30		0.04	U	0.039	U	**5.3**		**6.5**		0.041	U	0.049	U
Isopropylbenzene	NA	NA	NA		0.04	U	0.039	U	**13**		**14**		0.041	U	0.049	U
Methyl cyclohexane	NA	NA	NA		0.04	U	0.039	U	**13**		**16**		0.041	U	0.049	U
Methylene chloride	0.05	0.05	51		0.04	U	0.039	U	0.91	U	0.46	U	**0.012**	J	0.049	U
Toluene	0.7	0.7	100		0.04	U	0.039	U	0.91	U	0.46	U	0.041	U	0.049	U
Xylenes, Total	0.26	1.6	100		0.08	U	0.078	U	**34**		**52**		0.082	U	0.097	U
Total Non-chlorinated VOCs					ND		ND		68		92		0.012		ND	
Percent Solids	NA	NA	NA		**91**		**92**		**91**		**86**		**87**		**82**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-11		DP-11		DP-12		DP-12		DP-13		DP-13	
				Sample Date	10/23/2013		10/23/2013		10/23/2013		10/23/2013		10/24/2013		10/24/2013	
				Sample ID	932138-DP011005		932138-DP011011		932138-DP012007		932138-DP012009		932138-DP013005		932138-DP013008	
				Top Depth	5		11		7		9		5		8	
				Bottom Depth	7		12		8		10		6		9	
				QC Code	FS		FS		FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		0.043	U	**1.9**		1.7	U	0.45	U	0.4	U	**1.1**	
Trichloroethene	0.47	0.47	10		0.043	U	**0.36**		1.7	U	0.45	U	0.4	U	**0.078**	
Cis-1,2-Dichloroethene	0.25	0.25	59		0.043	U	**0.43**		**11**		**2.6**		**12**		**0.062**	
trans-1,2-Dichloroethene	0.19	0.19	100		0.043	U	0.04	U	1.7	U	0.45	U	**0.29**	J	0.048	U
Vinyl chloride	0.02	0.02	0.21		0.043	U	0.04	U	1.7	U	0.45	U	0.4	U	0.048	U
Total Chlorinated VOCs					ND		2.7		11		2.6		12		1.2	
2-Hexanone	NA	NA	NA		0.22	UJ	0.2	UJ	8.3	UJ	2.2	U	2	U	0.24	U
Acetic acid, methyl ester	NA	NA	NA		0.043	U	0.04	U	1.7	U	0.45	U	0.4	U	0.048	U
Benzene	0.06	0.06	2.9		0.043	U	0.04	U	1.7	U	0.45	U	0.4	U	0.048	U
Cyclohexane	NA	NA	NA		0.043	U	0.04	U	**1.7**		0.45	U	**3.7**		**0.041**	J
Ethyl benzene	1	1	30		0.043	U	0.04	U	**6.8**		**0.32**	J	**8.9**		**0.064**	
Isopropylbenzene	NA	NA	NA		0.043	U	0.04	U	**19**		**0.84**		**22**		**0.23**	
Methyl cyclohexane	NA	NA	NA		0.043	U	0.04	U	**21**		**1**		**29**		**0.35**	
Methylene chloride	0.05	0.05	51		0.043	U	0.04	U	1.7	U	0.45	U	0.4	U	0.048	U
Toluene	0.7	0.7	100		0.043	U	0.04	U	1.7	U	0.45	U	0.4	U	0.048	U
Xylenes, Total	0.26	1.6	100		0.086	U	0.081	U	**37**		**1.7**		**67**		**0.51**	
Total Non-chlorinated VOCs					ND		ND		86		3.9		131		1.2	
Percent Solids	NA	NA	NA		**90**		**94**		**86**		**86**		**93**		**82**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-14		DP-14		DP-15		DP-15		DP-16		DP-16	
				Sample Date	10/24/2013		10/24/2013		10/24/2013		10/24/2013		10/24/2013		10/24/2013	
				Sample ID	932138-DP014004		932138-DP014008		932138-DP015007		932138-DP015009		932138-DP016007		932138-DP016009	
				Top Depth	4		8		7		9		7		9	
				Bottom Depth	5		9		8		9.5		8		11	
				QC Code	FS		FS		FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		**1.3**		**0.06**		**1.4**	0	**1.3**		**0.09**		**0.66**	
Trichloroethene	0.47	0.47	10		**0.022**	J	0.032	U	**0.39**	0	**0.54**		0.043	U	**3.2**	
Cis-1,2-Dichloroethene	0.25	0.25	59		0.053	U	**0.093**		**0.47**	0	**0.67**		0.043	U	**9.4**	
trans-1,2-Dichloroethene	0.19	0.19	100		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	**0.12**	J
Vinyl chloride	0.02	0.02	0.21		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Total Chlorinated VOCs					1.3		0.15		2.3		2.5		0.09		13	
2-Hexanone	NA	NA	NA		0.26	U	0.16	U	0.23	U	0.22	U	0.21	U	2.2	U
Acetic acid, methyl ester	NA	NA	NA		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Benzene	0.06	0.06	2.9		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Cyclohexane	NA	NA	NA		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Ethyl benzene	1	1	30		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	**0.54**	
Isopropylbenzene	NA	NA	NA		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	**2.6**	
Methyl cyclohexane	NA	NA	NA		0.053	U	**1.6**		0.047	U	**0.055**		0.043	U	**9.2**	
Methylene chloride	0.05	0.05	51		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Toluene	0.7	0.7	100		0.053	U	0.032	U	0.047	U	0.044	U	0.043	U	0.44	U
Xylenes, Total	0.26	1.6	100		**0.032**	J	0.064	U	0.093	U	0.089	U	0.086	U	**1.2**	
Total Non-chlorinated VOCs					0.032		1.6		ND		0.055		ND		14	
Percent Solids	NA	NA	NA		**79**		**87**		**84**		**86**		**87**		**85**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

			Location	DP-17		DP-17		DP-17		DP-18		DP-18		DP-19	
			Sample Date	10/24/2013		10/24/2013		10/24/2013		10/24/2013		10/24/2013		10/25/2013	
			Sample ID	932138-DP017005		932138-DP017008		932138-DP017008DUP		932138-DP018006		932138-DP018009		932138-DP019007	
			Top Depth	5		8		8		6		9		7	
			Bottom Depth	6		10		10		7		10		8	
			QC Code	FS		FS		FD		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**												
Tetrachloroethene	1.3	1.3	5.5	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	**0.14**	J
Trichloroethene	0.47	0.47	10	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Cis-1,2-Dichloroethene	0.25	0.25	59	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
trans-1,2-Dichloroethene	0.19	0.19	100	0.057	U	0.043	UJ	0.051	UJ	0.039	U	0.051	U	0.17	U
Vinyl chloride	0.02	0.02	0.21	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Total Chlorinated VOCs				ND		ND		ND		ND		ND		0.14	
2-Hexanone	NA	NA	NA	0.28	U	0.22	U	0.26	U	0.19	U	0.25	U	0.85	U
Acetic acid, methyl ester	NA	NA	NA	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Benzene	0.06	0.06	2.9	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Cyclohexane	NA	NA	NA	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Ethyl benzene	1	1	30	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Isopropylbenzene	NA	NA	NA	0.057	U	**0.0077**	J	0.051	U	0.039	U	0.051	U	0.17	U
Methyl cyclohexane	NA	NA	NA	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Methylene chloride	0.05	0.05	51	**0.091**		**0.012**	J	**0.022**	J	0.039	U	**0.021**	J	0.17	U
Toluene	0.7	0.7	100	0.057	U	0.043	U	0.051	U	0.039	U	0.051	U	0.17	U
Xylenes, Total	0.26	1.6	100	0.11	U	0.087	U	0.1	U	0.077	U	0.1	U	0.34	U
Total Non-chlorinated VOCs				0.091		0.02		0.022		ND		0.021		ND	
Percent Solids	NA	NA	NA	**84**		**87**		**87**		**91**		**82**		**81**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.1: Soils VOC Analytical Results

				Location	DP-20		DP-20		DP-21		DP-21		DP-26		DP-26	
				Sample Date	10/25/2013		10/25/2013		10/25/2013		10/25/2013		10/25/2013		10/25/2013	
				Sample ID	932138-DP020007		932138-DP020009		932138-DP021007		932138-DP021009		932138-DP026007		932138-DP026009	
				Top Depth	7		9		7		9		7		9	
				Bottom Depth	8		9.5		8		10		8		10	
				QC Code	FS		FS		FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Parameter	**Unrestricted Use**	**Protection of Groundwater**	**Residential Use**													
Tetrachloroethene	1.3	1.3	5.5		0.17	UJ	0.17	UJ	0.043	U	0.043	U	**0.015**	J	0.043	UJ
Trichloroethene	0.47	0.47	10		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Cis-1,2-Dichloroethene	0.25	0.25	59		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
trans-1,2-Dichloroethene	0.19	0.19	100		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Vinyl chloride	0.02	0.02	0.21		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Total Chlorinated VOCs					ND		ND		ND		ND		0.015		ND	
2-Hexanone	NA	NA	NA		0.84	UJ	0.85	UJ	0.22	U	**0.1**	J	0.23	U	0.21	UJ
Acetic acid, methyl ester	NA	NA	NA		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Benzene	0.06	0.06	2.9		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Cyclohexane	NA	NA	NA		**1.1**	J	**5.8**	J	0.043	U	**0.12**		0.046	U	**0.37**	J
Ethyl benzene	1	1	30		**0.08**	J	**0.49**	J	0.043	U	0.043	U	0.046	U	0.043	UJ
Isopropylbenzene	NA	NA	NA		**2**	J	**5.7**	J	0.043	U	0.043	U	0.046	U	**0.14**	J
Methyl cyclohexane	NA	NA	NA		**7.6**	J	**29**		0.043	U	**0.49**		0.046	U	**0.76**	J
Methylene chloride	0.05	0.05	51		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Toluene	0.7	0.7	100		0.17	UJ	0.17	UJ	0.043	U	0.043	U	0.046	U	0.043	UJ
Xylenes, Total	0.26	1.6	100		0.34	UJ	**2.6**	J	0.086	U	0.086	U	0.091	U	0.085	UJ
Total Non-chlorinated VOCs					11		44		ND		0.71		ND		1.3	
Percent Solids	NA	NA	NA		**89**		**90**		**86**		**88**		**84**		**87**	

Notes:
Volatile Organic Compounds analysis by USEPA Method 8260C;
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Percent solid in percent.
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS=field sample; FD = field duplicate
ND = not detected

Table 4.2: Soil SVOC, Pesticide/PCBs, Metals, TOC, and Hydrocarbon Analytical Results

				Location	DP-01		DP-01 (duplicate)		DP-01		DP-02	
				Sample Date	10/20/2013		10/20/2013		10/24/2013		10/20/2013	
				Sample ID	932138-DP001002		932138-DP001002XD		932138-DP001004		932138-DP002002	
				Top Depth	0		0		4		0	
				Bottom Depth	2		2		5		2	
				QC Code	FS		FD		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Semi Volatile Organic Compounds	**Unrestricted Use**	**Protection Of GW**	**Residential Use**									
2-Methylnaphthalene	NA	NA	NA		**0.033**	J	**0.028**	J	0.19	U	0.94	U
Acenaphthene	20	98	100		0.21	U	1.1	U	0.19	U	**0.16**	J
Acenaphthylene	100	107	100		**0.041**	J	1.1	U	0.19	U	**1.6**	
Acetophenone	NA	NA	NA		0.21	U	1.1	U	0.19	U	**1.1**	
Anthracene	100	1000	100		**0.015**	J	1.1	U	0.19	U	**1.2**	
Benzo(a)anthracene	1	1	1		**0.087**	J	**0.24**	J	**0.02**	J	**1.8**	
Benzo(a)pyrene	1	22	1		**0.14**	J	**0.33**	J	0.19	U	**2.6**	
Benzo(b)fluoranthene	1	1.7	1		**0.19**	J	**0.55**	J	0.19	U	**2.6**	
Benzo(ghi)perylene	100	1000	100		**0.085**	J	**0.27**	J	0.19	U	**0.96**	
Benzo(k)fluoranthene	0.8	1.7	1		**0.079**	J	**0.22**	J	0.19	U	**1.1**	
Bis(2-Ethylhexyl)phthalate	NA	NA	NA		0.21	U	1.1	U	0.19	U	0.94	U
Carbazole	NA	NA	NA		0.21	U	1.1	U	0.19	U	0.94	U
Chrysene	1	1	1		**0.12**	J	**0.33**	J	**0.02**	J	**2.1**	
Di-n-octylphthalate	NA	NA	NA		0.21	U	1.1	U	0.19	U	0.94	U
Dibenz(a,h)anthracene	0.33	1000	0.33		**0.036**	J	**0.13**	J	0.19	U	**0.37**	J
Dibenzofuran	7	210	14		0.21	U	1.1	U	0.19	U	**0.15**	J
Fluoranthene	100	1000	100		**0.16**	J	**0.53**	J	0.19	U	**2.2**	
Fluorene	30	386	100		0.21	U	1.1	U	0.19	U	**0.95**	
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5		0.21	U	1.1	U	0.19	U	**0.87**	J
Naphthalene	12	12	100		0.21	U	1.1	U	0.19	U	0.94	U
Phenanthrene	100	1000	100		**0.1**	J	**0.43**	J	**0.018**	J	**2.8**	
Pyrene	100	1000	100		**0.12**	J	**0.38**	J	**0.034**	J	**2.5**	
Pesticides/PCBs												
4,4'-DDE	0.0033	17	1.8		**0.0086**	J					0.09	U
4,4'-DDT	0.0033	136	1.7		0.0084	U					0.09	U
Dieldrin	0.005	0.1	0.039		**0.019**	J					0.09	U
Metals												
Aluminum	NA	NA	NA		**6430**	J					**2540**	J
Antimony	NA	NA	NA		**0.81**	J					16.1	UJ
Arsenic	13	16	16		**27.4**						**2.5**	
Barium	350	820	350		**169**						**27.7**	
Beryllium	7.2	47	14		**0.83**						**0.16**	J
Cadmium	2.5	7.5	2.5		**1.6**						**0.16**	J
Calcium	NA	NA	NA		**19400**						**149000**	
Chromium	1	19	22		**19.9**						**5.5**	
Cobalt	NA	NA	NA		**6.2**						**2.2**	
Copper	50	1720	270		**70.8**						**11.5**	
Iron	NA	NA	NA		**22200**	J					**5270**	J
Lead	63	450	400		**256**						**12.3**	
Magnesium	NA	NA	NA		**5720**	J					**14400**	J
Manganese	1600	2000	2000		**276**						**387**	
Nickel	30	130	140		**17.7**						**8**	
Potassium	NA	NA	NA		**754**						**654**	
Selenium	3.9	4	36		**3.5**	J					4.3	U
Silver	2	8.3	36		**1.4**						0.54	U
Sodium	NA	NA	NA		**399**						263	U
Vanadium	NA	NA	NA		**18**						**6.1**	
Zinc	109	2480	2200		**413**						**29**	
Mercury	0.18	0.73	0.81		**0.23**						0.023	U
Total Organic Carbon	NA	NA	NA		**126000**				**21800**			
Unknown Hydrocarbons	NA	NA	NA		**93**				19	U		

Notes:
Samples analyzed for:
SVOCs by USEPA Method 8270D;
Pesticides & PCBs by Method 8081B/8082A;
Metals and Mercury by USEPA Method SW6010 and SW7471B, respectively;
Total organic carbon by Lloyd Kahn and Hydrocarbons by NY310.13.
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Blank cells indicate compound not analyzed
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS = Field Sample; FD = Field Duplicate

Table 4.2: Soil SVOC, Pesticide/PCBs, Metals, TOC, and Hydrocarbon Analytical Results

				Location	DP-03		DP-04		DP-05		DP-05	
				Sample Date	10/20/2013		10/23/2013		10/23/2013		10/23/2013	
				Sample ID	932138-DP003002		932138-DP004005		932138-DP005005		932138-DP005008	
				Top Depth	0		5		5		8	
				Bottom Depth	2		8		6.5		10.5	
				QC Code	FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Semi Volatile Organic Compounds	**Unrestricted Use**	**Protection Of GW**	**Residential Use**									
2-Methylnaphthalene	NA	NA	NA						**0.3**		0.19	U
Acenaphthene	20	98	100						0.19	U	0.19	U
Acenaphthylene	100	107	100						0.19	U	0.19	U
Acetophenone	NA	NA	NA						**0.78**		0.19	U
Anthracene	100	1000	100						0.19	U	0.19	U
Benzo(a)anthracene	1	1	1						0.19	U	0.19	U
Benzo(a)pyrene	1	22	1						0.19	U	0.19	U
Benzo(b)fluoranthene	1	1.7	1						0.19	U	0.19	U
Benzo(ghi)perylene	100	1000	100						**0.015**	J	**0.011**	J
Benzo(k)fluoranthene	0.8	1.7	1						0.19	U	0.19	U
Bis(2-Ethylhexyl)phthalate	NA	NA	NA						0.19	U	0.19	U
Carbazole	NA	NA	NA						0.19	U	0.19	U
Chrysene	1	1	1						0.19	U	0.19	U
Di-n-octylphthalate	NA	NA	NA						0.19	U	0.19	U
Dibenz(a,h)anthracene	0.33	1000	0.33						0.19	U	0.19	U
Dibenzofuran	7	210	14						0.19	U	0.19	U
Fluoranthene	100	1000	100						0.19	U	0.19	U
Fluorene	30	386	100						0.19	U	0.19	U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5						**0.015**	J	**0.011**	J
Naphthalene	12	12	100						0.19	U	0.19	U
Phenanthrene	100	1000	100						**0.013**	J	0.19	U
Pyrene	100	1000	100						0.19	U	0.19	U
Pesticides/PCBs												
4,4'-DDE	0.0033	17	1.8		**0.03**	J						
4,4'-DDT	0.0033	136	1.7		**0.024**	J						
Dieldrin	0.005	0.1	0.039		**0.0068**	J						
Metals												
Aluminum	NA	NA	NA		**7000**	J						
Antimony	NA	NA	NA		19	UJ						
Arsenic	13	16	16		**5.4**							
Barium	350	820	350		**97.2**							
Beryllium	7.2	47	14		**0.41**							
Cadmium	2.5	7.5	2.5		**0.67**							
Calcium	NA	NA	NA		**15600**							
Chromium	1	19	22		**15.1**							
Cobalt	NA	NA	NA		**4.6**							
Copper	50	1720	270		**33.5**							
Iron	NA	NA	NA		**10400**	J						
Lead	63	450	400		**91.1**							
Magnesium	NA	NA	NA		**5550**	J						
Manganese	1600	2000	2000		**251**							
Nickel	30	130	140		**16.1**							
Potassium	NA	NA	NA		**722**							
Selenium	3.9	4	36		**0.89**	J						
Silver	2	8.3	36		0.63	U						
Sodium	NA	NA	NA		168	UJ						
Vanadium	NA	NA	NA		**14.9**							
Zinc	109	2480	2200		**190**							
Mercury	0.18	0.73	0.81		**0.19**							
Total Organic Carbon	NA	NA	NA				**11100**					
Unknown Hydrocarbons	NA	NA	NA				**900**		**960**		30	U

Notes:
Samples analyzed for:
SVOCs by USEPA Method 8270D;
Pesticides & PCBs by Method 8081B/8082A;
Metals and Mercury by USEPA Method SW6010 and SW7471B, respectively;
Total organic carbon by Lloyd Kahn and Hydrocarbons by NY310.13.
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Blank cells indicate compound not analyzed
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS = Field Sample; FD = Field Duplicate

Table 4.2: Soil SVOC, Pesticide/PCBs, Metals, TOC, and Hydrocarbon Analytical Results

				Location	DP-07		DP-07		DP-09		DP-09	
				Sample Date	10/22/2013		10/22/2013		10/23/2013		10/23/2013	
				Sample ID	932138-DP007004		932138-DP007014		932138-DP009007		932138-DP009008	
				Top Depth	4		14		7		8	
				Bottom Depth	6		14.8		8		9	
				QC Code	FS		FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Semi Volatile Organic Compounds	**Unrestricted Use**	**Protection Of GW**	**Residential Use**									
2-Methylnaphthalene	NA	NA	NA		0.19	U	0.17	U	**0.52**	**J**	**0.13**	**J**
Acenaphthene	20	98	100		0.19	U	0.17	U	1.8	U	0.19	U
Acenaphthylene	100	107	100		0.19	U	0.17	U	1.8	U	0.19	U
Acetophenone	NA	NA	NA		0.19	U	0.17	U	**20**		**3.3**	
Anthracene	100	1000	100		0.19	U	0.17	U	1.8	U	0.19	U
Benzo(a)anthracene	1	1	1		0.19	U	0.17	U	1.8	U	0.19	U
Benzo(a)pyrene	1	22	1		0.19	U	0.17	U	1.8	U	0.19	U
Benzo(b)fluoranthene	1	1.7	1		0.19	U	0.17	U	**0.13**	**J**	0.19	U
Benzo(ghi)perylene	100	1000	100		0.19	U	0.17	U	1.8	U	**0.014**	**J**
Benzo(k)fluoranthene	0.8	1.7	1		0.19	U	**0.013**	**J**	1.8	U	0.19	U
Bis(2-Ethylhexyl)phthalate	NA	NA	NA		0.19	U	0.17	U	**0.81**	**J**	**0.11**	**J**
Carbazole	NA	NA	NA		0.19	U	0.17	U	1.8	U	0.19	U
Chrysene	1	1	1		0.19	U	0.17	U	1.8	U	0.19	U
Di-n-octylphthalate	NA	NA	NA		0.19	U	0.17	U	1.8	U	0.19	U
Dibenz(a,h)anthracene	0.33	1000	0.33		0.19	U	0.17	U	1.8	U	**0.013**	**J**
Dibenzofuran	7	210	14		0.19	U	0.17	U	1.8	U	0.19	U
Fluoranthene	100	1000	100		0.19	U	0.17	U	1.8	U	0.19	U
Fluorene	30	386	100		0.19	U	0.17	U	1.8	U	0.19	U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5		0.19	U	0.17	U	**0.14**	**J**	0.19	U
Naphthalene	12	12	100		0.19	U	0.17	U	**3.1**		**0.92**	
Phenanthrene	100	1000	100		0.19	U	0.17	U	1.8	U	0.19	U
Pyrene	100	1000	100		0.19	U	0.17	U	1.8	U	0.19	U
Pesticides/PCBs												
4,4'-DDE	0.0033	17	1.8									
4,4'-DDT	0.0033	136	1.7									
Dieldrin	0.005	0.1	0.039									
Metals												
Aluminum	NA	NA	NA									
Antimony	NA	NA	NA									
Arsenic	13	16	16									
Barium	350	820	350									
Beryllium	7.2	47	14									
Cadmium	2.5	7.5	2.5									
Calcium	NA	NA	NA									
Chromium	1	19	22									
Cobalt	NA	NA	NA									
Copper	50	1720	270									
Iron	NA	NA	NA									
Lead	63	450	400									
Magnesium	NA	NA	NA									
Manganese	1600	2000	2000									
Nickel	30	130	140									
Potassium	NA	NA	NA									
Selenium	3.9	4	36									
Silver	2	8.3	36									
Sodium	NA	NA	NA									
Vanadium	NA	NA	NA									
Zinc	109	2480	2200									
Mercury	0.18	0.73	0.81									
Total Organic Carbon	NA	NA	NA									
Unknown Hydrocarbons	NA	NA	NA									

Notes:
Samples analyzed for:
SVOCs by USEPA Method 8270D;
Pesticides & PCBs by Method 8081B/8082A;
Metals and Mercury by USEPA Method SW6010 and SW7471B, respectively;
Total organic carbon by Lloyd Kahn and Hydrocarbons by NY310.13.
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Blank cells indicate compound not analyzed
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS = Field Sample; FD = Field Duplicate

Table 4.2: Soil SVOC, Pesticide/PCBs, Metals, TOC, and Hydrocarbon Analytical Results

				Location	SS-01		SS-02		SS-03	
				Sample Date	10/20/2013		10/20/2013		10/20/2013	
				Sample ID	932138-SS001001		932138-SS002001		932138-SS003001	
				Top Depth	0		0		0	
				Bottom Depth	1		1		1	
				QC Code	FS		FS		FS	
Parameter	**Soil Cleanup Objectives**				Result	Qualifier	Result	Qualifier	Result	Qualifier
Semi Volatile Organic Compounds	**Unrestricted Use**	**Protection Of GW**	**Residential Use**							
2-Methylnaphthalene	NA	NA	NA		2.2	U	2.1	U	1.1	U
Acenaphthene	20	98	100		**0.13**	J	2.1	U	1.1	U
Acenaphthylene	100	107	100		2.2	U	2.1	U	1.1	U
Acetophenone	NA	NA	NA		2.2	U	2.1	U	1.1	U
Anthracene	100	1000	100		**0.57**	J	**0.15**	J	1.1	U
Benzo(a)anthracene	1	1	1		**3.3**		**1.1**	J	**0.54**	J
Benzo(a)pyrene	1	22	1		**3.6**		**1**	J	**0.56**	J
Benzo(b)fluoranthene	1	1.7	1		**6.5**		**1.6**	J	**0.83**	J
Benzo(ghi)perylene	100	1000	100		**2**	J	**1.1**	J	**0.54**	J
Benzo(k)fluoranthene	0.8	1.7	1		**2.8**		**0.71**	J	**0.31**	J
Bis(2-Ethylhexyl)phthalate	NA	NA	NA		2.2	U	**7.5**		1.1	U
Carbazole	NA	NA	NA		**0.32**	J	2.1	U	1.1	U
Chrysene	1	1	1		**4.3**		**1.3**	J	**0.62**	J
Di-n-octylphthalate	NA	NA	NA		2.2	U	**8.1**		1.1	U
Dibenz(a,h)anthracene	0.33	1000	0.33		**0.64**	J	**0.33**	J	**0.18**	J
Dibenzofuran	7	210	14		2.2	U	2.1	U	1.1	U
Fluoranthene	100	1000	100		**9.1**		**2.4**		**1.3**	
Fluorene	30	386	100		2.2	U	2.1	U	1.1	U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5		**1.7**	J	**0.87**	J	**0.46**	J
Naphthalene	12	12	100		2.2	U	2.1	U	1.1	U
Phenanthrene	100	1000	100		**3.5**		**1**	J	**0.47**	J
Pyrene	100	1000	100		**5.6**		**1.8**	J	**0.96**	J
Pesticides/PCBs										
4,4'-DDE	0.0033	17	1.8		0.11	U	**0.018**	J	**0.1**	J
4,4'-DDT	0.0033	136	1.7		0.02	U	0.02	U	**0.035**	J
Dieldrin	0.005	0.1	0.039		**0.045**	J	0.1	U	0.042	U
Metals										
Aluminum	NA	NA	NA		**11300**	J	**8860**	J	**12500**	J
Antimony	NA	NA	NA		17.4	UJ	17.8	UJ	21.8	UJ
Arsenic	13	16	16		**5.4**		**5.2**		**3.8**	
Barium	350	820	350		**101**		**90.6**		**81.9**	
Beryllium	7.2	47	14		**0.62**		**0.55**		**0.62**	
Cadmium	2.5	7.5	2.5		**0.52**		**0.49**		**0.41**	
Calcium	NA	NA	NA		**18400**		**27500**		**11200**	
Chromium	1	19	22		**19.8**		**17.1**		**20.2**	
Cobalt	NA	NA	NA		**7.4**		**7.3**		**7.6**	
Copper	50	1720	270		**28.9**		**31.9**		**24.7**	
Iron	NA	NA	NA		**17800**	J	**14600**	J	**17600**	J
Lead	63	450	400		**86.5**		**176**		**84.8**	
Magnesium	NA	NA	NA		**11100**	J	**14100**	J	**7580**	J
Manganese	1600	2000	2000		**473**		**544**		**419**	
Nickel	30	130	140		**21.4**		**28.2**		**27.3**	
Potassium	NA	NA	NA		**1270**		**1270**		**1080**	
Selenium	3.9	4	36		4.6	U	4.7	U	5.8	U
Silver	2	8.3	36		0.58	U	0.59	U	0.73	U
Sodium	NA	NA	NA		252	U	231	U	163	UJ
Vanadium	NA	NA	NA		**23.4**		**20.7**		**24.4**	
Zinc	109	2480	2200		**149**		**123**		**99.3**	
Mercury	0.18	0.73	0.81		**0.11**		**0.14**		**0.066**	
Total Organic Carbon	NA	NA	NA							
Unknown Hydrocarbons	NA	NA	NA							

Notes:
Samples analyzed for:
SVOCs by USEPA Method 8270D;
Pesticides & PCBs by Method 8081B/8082A;
Metals and Mercury by USEPA Method SW6010 and SW7471B, respectively;
Total organic carbon by Lloyd Kahn and Hydrocarbons by NY310.13.
Results in milligrams per kilogram (only detected compounds shown)
(detections in bold)
Blank cells indicate compound not analyzed
ft bgs = feet below ground surface
Qualifier:
J = estimated value
U = compound not detected at concentration above reporting limit.
Soil Cleanup Objectives = 6 NYCRR Part 375
(Shaded cells > standards)
NA = criteria not available
QC Code: FS = Field Sample; FD = Field Duplicate

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-008-1
Date Collected: 03/19/14 09:30
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-1
Matrix: Solid
Percent Solids: 90.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		82	23	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,1,2,2-Tetrachloroethane	ND		82	13	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,1,2-Trichloroethane	ND		82	17	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		82	41	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,1-Dichloroethane	ND		82	25	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,1-Dichloroethene	ND		82	28	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2,4-Trichlorobenzene	ND		82	31	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2-Dibromo-3-Chloropropane	ND		82	41	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2-Dibromoethane	ND		82	3.1	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2-Dichlorobenzene	ND		82	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2-Dichloroethane	ND		82	33	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,2-Dichloropropane	ND		82	13	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,3-Dichlorobenzene	ND		82	22	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
1,4-Dichlorobenzene	ND		82	11	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
2-Hexanone	ND		410	170	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
2-Butanone (MEK)	ND		410	240	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
4-Methyl-2-pentanone (MIBK)	ND		410	26	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Acetone	ND		410	340	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Benzene	ND		82	3.9	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Bromodichloromethane	ND		82	16	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Bromoform	ND		82	41	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Bromomethane	ND	*	82	18	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Carbon disulfide	ND		82	37	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Carbon tetrachloride	ND		82	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Chlorobenzene	ND		82	11	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Dibromochloromethane	ND		82	39	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Chloroethane	ND		82	17	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Chloroform	ND		82	56	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Chloromethane	ND	*	82	19	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
cis-1,2-Dichloroethene	ND		82	23	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
cis-1,3-Dichloropropene	ND		82	19	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Cyclohexane	ND		82	18	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Dichlorodifluoromethane	ND		82	36	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Ethylbenzene	ND		82	24	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Isopropylbenzene	ND		82	12	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Methyl acetate	ND		82	39	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Methyl tert-butyl ether	ND		82	31	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Methylcyclohexane	ND		82	38	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Methylene Chloride	ND		82	16	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Styrene	ND		82	20	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Tetrachloroethene	**970**		82	11	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Toluene	ND		82	22	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
trans-1,2-Dichloroethene	ND		82	19	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
trans-1,3-Dichloropropene	ND		82	3.9	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Trichloroethene	**120**		82	23	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Trichlorofluoromethane	ND		82	38	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Vinyl chloride	ND		82	27	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1
Xylenes, Total	ND		160	14	ug/Kg	☼	03/19/14 18:48	03/20/14 01:30	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-008-1
Date Collected: 03/19/14 09:30
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-1
Matrix: Solid
Percent Solids: 90.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		53 - 146	03/19/14 18:48	03/20/14 01:30	1
Toluene-d8 (Surr)	95		50 - 149	03/19/14 18:48	03/20/14 01:30	1
4-Bromofluorobenzene (Surr)	94		49 - 148	03/19/14 18:48	03/20/14 01:30	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-003-1
Date Collected: 03/19/14 10:15
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-2
Matrix: Solid
Percent Solids: 86.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		88	24	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,1,2,2-Tetrachloroethane	ND		88	14	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,1,2-Trichloroethane	ND		88	18	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		88	44	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,1-Dichloroethane	ND		88	27	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,1-Dichloroethene	ND		88	30	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2,4-Trichlorobenzene	ND		88	33	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2-Dibromo-3-Chloropropane	ND		88	44	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2-Dibromoethane	ND		88	3.3	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2-Dichlorobenzene	ND		88	22	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2-Dichloroethane	ND		88	36	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,2-Dichloropropane	ND		88	14	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,3-Dichlorobenzene	ND		88	23	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
1,4-Dichlorobenzene	ND		88	12	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
2-Hexanone	ND		440	180	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
2-Butanone (MEK)	ND		440	260	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
4-Methyl-2-pentanone (MIBK)	ND		440	28	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Acetone	ND		440	360	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Benzene	**47**	**J**	88	4.2	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Bromodichloromethane	ND		88	18	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Bromoform	ND		88	44	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Bromomethane	ND	*	88	19	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Carbon disulfide	ND		88	40	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Carbon tetrachloride	ND		88	22	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Chlorobenzene	ND		88	12	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Dibromochloromethane	ND		88	43	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Chloroethane	ND		88	18	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Chloroform	ND		88	60	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Chloromethane	ND	*	88	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
cis-1,2-Dichloroethene	**190**		88	24	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
cis-1,3-Dichloropropene	ND		88	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Cyclohexane	ND		88	20	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Dichlorodifluoromethane	ND		88	38	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Ethylbenzene	ND		88	26	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Isopropylbenzene	ND		88	13	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Methyl acetate	ND		88	42	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Methyl tert-butyl ether	ND		88	33	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Methylcyclohexane	ND		88	41	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Methylene Chloride	ND		88	17	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Styrene	ND		88	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Tetrachloroethene	**7300**		88	12	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Toluene	ND		88	24	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
trans-1,2-Dichloroethene	ND		88	21	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
trans-1,3-Dichloropropene	ND		88	4.2	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Trichloroethene	**520**		88	24	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Trichlorofluoromethane	ND		88	41	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Vinyl chloride	ND		88	29	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1
Xylenes, Total	ND		180	15	ug/Kg	☼	03/19/14 18:48	03/20/14 01:52	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-003-1
Date Collected: 03/19/14 10:15
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-2
Matrix: Solid
Percent Solids: 86.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		53 - 146	03/19/14 18:48	03/20/14 01:52	1
Toluene-d8 (Surr)	99		50 - 149	03/19/14 18:48	03/20/14 01:52	1
4-Bromofluorobenzene (Surr)	101		49 - 148	03/19/14 18:48	03/20/14 01:52	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-004-1
Date Collected: 03/19/14 10:35
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-3
Matrix: Solid
Percent Solids: 84.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		91	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,1,2,2-Tetrachloroethane	ND		91	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,1,2-Trichloroethane	ND		91	19	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		91	45	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,1-Dichloroethane	ND		91	28	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,1-Dichloroethene	ND		91	31	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2,4-Trichlorobenzene	ND		91	34	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2-Dibromo-3-Chloropropane	ND		91	45	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2-Dibromoethane	ND		91	3.4	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2-Dichlorobenzene	ND		91	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2-Dichloroethane	ND		91	37	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,2-Dichloropropane	ND		91	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,3-Dichlorobenzene	ND		91	24	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
1,4-Dichlorobenzene	ND		91	13	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
2-Hexanone	ND		450	190	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
2-Butanone (MEK)	ND		450	270	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
4-Methyl-2-pentanone (MIBK)	ND		450	29	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Acetone	ND		450	370	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Benzene	ND		91	4.3	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Bromodichloromethane	ND		91	18	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Bromoform	ND		91	45	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Bromomethane	ND	*	91	20	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Carbon disulfide	ND		91	41	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Carbon tetrachloride	ND		91	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Chlorobenzene	ND		91	12	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Dibromochloromethane	ND		91	44	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Chloroethane	ND		91	19	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Chloroform	ND		91	62	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Chloromethane	ND	*	91	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
cis-1,2-Dichloroethene	**420**		91	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
cis-1,3-Dichloropropene	ND		91	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Cyclohexane	ND		91	20	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Dichlorodifluoromethane	ND		91	39	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Ethylbenzene	ND		91	26	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Isopropylbenzene	ND		91	14	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Methyl acetate	ND		91	43	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Methyl tert-butyl ether	ND		91	34	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Methylcyclohexane	ND		91	42	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Methylene Chloride	ND		91	18	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Styrene	ND		91	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Tetrachloroethene	**8700**		91	12	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Toluene	ND		91	24	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
trans-1,2-Dichloroethene	ND		91	21	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
trans-1,3-Dichloropropene	ND		91	4.3	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Trichloroethene	**1100**		91	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Trichlorofluoromethane	ND		91	42	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Vinyl chloride	ND		91	30	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1
Xylenes, Total	ND		180	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:14	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-004-1
Date Collected: 03/19/14 10:35
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-3
Matrix: Solid
Percent Solids: 84.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		53 - 146	03/19/14 18:48	03/20/14 02:14	1
Toluene-d8 (Surr)	97		50 - 149	03/19/14 18:48	03/20/14 02:14	1
4-Bromofluorobenzene (Surr)	98		49 - 148	03/19/14 18:48	03/20/14 02:14	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-005-1
Date Collected: 03/19/14 11:15
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-4
Matrix: Solid
Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		94	26	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,1,2,2-Tetrachloroethane	ND		94	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,1,2-Trichloroethane	ND		94	20	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		94	47	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,1-Dichloroethane	ND		94	29	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,1-Dichloroethene	ND		94	33	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2,4-Trichlorobenzene	ND		94	36	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2-Dibromo-3-Chloropropane	ND		94	47	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2-Dibromoethane	ND		94	3.6	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2-Dichlorobenzene	ND		94	24	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2-Dichloroethane	ND		94	39	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,2-Dichloropropane	ND		94	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,3-Dichlorobenzene	ND		94	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
1,4-Dichlorobenzene	ND		94	13	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
2-Hexanone	ND		470	190	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
2-Butanone (MEK)	ND		470	280	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
4-Methyl-2-pentanone (MIBK)	ND		470	30	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Acetone	ND		470	390	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Benzene	ND		94	4.5	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Bromodichloromethane	ND		94	19	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Bromoform	ND		94	47	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Bromomethane	ND	*	94	21	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Carbon disulfide	ND		94	43	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Carbon tetrachloride	ND		94	24	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Chlorobenzene	ND		94	12	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Dibromochloromethane	ND		94	46	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Chloroethane	ND		94	20	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Chloroform	ND		94	65	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Chloromethane	ND	*	94	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
cis-1,2-Dichloroethene	ND		94	26	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
cis-1,3-Dichloropropene	ND		94	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Cyclohexane	ND		94	21	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Dichlorodifluoromethane	ND		94	41	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Ethylbenzene	ND		94	27	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Isopropylbenzene	ND		94	14	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Methyl acetate	ND		94	45	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Methyl tert-butyl ether	ND		94	36	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Methylcyclohexane	ND		94	44	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Methylene Chloride	ND		94	19	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Styrene	ND		94	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Tetrachloroethene	**19000**	**E**	94	13	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Toluene	ND		94	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
trans-1,2-Dichloroethene	ND		94	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
trans-1,3-Dichloropropene	ND		94	4.5	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Trichloroethene	**1300**		94	26	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Trichlorofluoromethane	ND		94	44	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Vinyl chloride	ND		94	32	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1
Xylenes, Total	ND		190	16	ug/Kg	☼	03/19/14 18:48	03/20/14 02:36	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-005-1
Date Collected: 03/19/14 11:15
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-4
Matrix: Solid
Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		53 - 146	03/19/14 18:48	03/20/14 02:36	1
Toluene-d8 (Surr)	102		50 - 149	03/19/14 18:48	03/20/14 02:36	1
4-Bromofluorobenzene (Surr)	103		49 - 148	03/19/14 18:48	03/20/14 02:36	1

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		470	130	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,1,2,2-Tetrachloroethane	ND		470	77	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,1,2-Trichloroethane	ND		470	99	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		470	240	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,1-Dichloroethane	ND		470	150	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,1-Dichloroethene	ND		470	160	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2,4-Trichlorobenzene	ND		470	180	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2-Dibromo-3-Chloropropane	ND		470	240	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2-Dibromoethane	ND		470	18	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2-Dichlorobenzene	ND		470	120	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2-Dichloroethane	ND		470	190	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,2-Dichloropropane	ND		470	76	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,3-Dichlorobenzene	ND		470	130	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
1,4-Dichlorobenzene	ND		470	66	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
2-Hexanone	ND		2400	970	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
2-Butanone (MEK)	ND		2400	1400	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
4-Methyl-2-pentanone (MIBK)	ND		2400	150	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Acetone	ND		2400	1900	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Benzene	ND		470	23	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Bromodichloromethane	ND		470	94	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Bromoform	ND		470	240	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Bromomethane	ND		470	100	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Carbon disulfide	ND		470	210	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Carbon tetrachloride	ND		470	120	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Chlorobenzene	ND		470	62	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Dibromochloromethane	ND		470	230	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Chloroethane	ND		470	98	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Chloroform	ND		470	320	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Chloromethane	ND		470	110	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
cis-1,2-Dichloroethene	ND		470	130	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
cis-1,3-Dichloropropene	ND		470	110	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Cyclohexane	ND		470	100	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Dichlorodifluoromethane	ND		470	210	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Ethylbenzene	ND		470	140	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Isopropylbenzene	ND		470	71	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Methyl acetate	ND		470	220	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Methyl tert-butyl ether	ND		470	180	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Methylcyclohexane	ND		470	220	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Methylene Chloride	ND		470	93	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Styrene	ND		470	110	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Tetrachloroethene	**24000**		470	63	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Toluene	ND		470	130	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
trans-1,2-Dichloroethene	ND		470	110	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
trans-1,3-Dichloropropene	ND		470	23	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-005-1
Date Collected: 03/19/14 11:15
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-4
Matrix: Solid
Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1600		470	130	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Trichlorofluoromethane	ND		470	220	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Vinyl chloride	ND		470	160	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5
Xylenes, Total	ND		940	79	ug/Kg	☼	03/19/14 18:48	03/20/14 12:47	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*53 - 146*	*03/19/14 18:48*	*03/20/14 12:47*	*5*
Toluene-d8 (Surr)	*100*		*50 - 149*	*03/19/14 18:48*	*03/20/14 12:47*	*5*
4-Bromofluorobenzene (Surr)	*98*		*49 - 148*	*03/19/14 18:48*	*03/20/14 12:47*	*5*

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-005-8
Date Collected: 03/19/14 11:20
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-5
Matrix: Solid
Percent Solids: 85.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		110	29	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,1,2,2-Tetrachloroethane	ND		110	17	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,1,2-Trichloroethane	ND		110	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		110	53	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,1-Dichloroethane	ND		110	32	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,1-Dichloroethene	ND		110	36	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2,4-Trichlorobenzene	ND		110	40	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2-Dibromo-3-Chloropropane	ND		110	53	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2-Dibromoethane	ND		110	4.0	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2-Dichlorobenzene	ND		110	27	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2-Dichloroethane	ND		110	43	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,2-Dichloropropane	ND		110	17	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,3-Dichlorobenzene	ND		110	28	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
1,4-Dichlorobenzene	ND		110	15	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
2-Hexanone	ND		530	220	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
2-Butanone (MEK)	ND		530	310	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
4-Methyl-2-pentanone (MIBK)	ND		530	34	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Acetone	ND		530	430	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Benzene	ND		110	5.0	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Bromodichloromethane	ND		110	21	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Bromoform	ND		110	53	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Bromomethane	ND	*	110	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Carbon disulfide	ND		110	48	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Carbon tetrachloride	ND		110	27	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Chlorobenzene	ND		110	14	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Dibromochloromethane	ND		110	51	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Chloroethane	ND		110	22	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Chloroform	ND		110	72	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Chloromethane	ND	*	110	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
cis-1,2-Dichloroethene	**540**		110	29	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
cis-1,3-Dichloropropene	ND		110	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Cyclohexane	ND		110	23	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Dichlorodifluoromethane	ND		110	46	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Ethylbenzene	ND		110	31	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Isopropylbenzene	ND		110	16	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Methyl acetate	ND		110	50	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Methyl tert-butyl ether	ND		110	40	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Methylcyclohexane	ND		110	49	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Methylene Chloride	ND		110	21	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Styrene	ND		110	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Tetrachloroethene	**1300**		110	14	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Toluene	ND		110	28	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
trans-1,2-Dichloroethene	ND		110	25	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
trans-1,3-Dichloropropene	ND		110	5.0	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Trichloroethene	**35**	**J**	110	29	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Trichlorofluoromethane	ND		110	49	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Vinyl chloride	ND		110	35	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1
Xylenes, Total	ND		210	18	ug/Kg	☼	03/19/14 18:48	03/20/14 02:58	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-005-8
Date Collected: 03/19/14 11:20
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-5
Matrix: Solid
Percent Solids: 85.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		53 - 146	03/19/14 18:48	03/20/14 02:58	1
Toluene-d8 (Surr)	101		50 - 149	03/19/14 18:48	03/20/14 02:58	1
4-Bromofluorobenzene (Surr)	100		49 - 148	03/19/14 18:48	03/20/14 02:58	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-006-1
Date Collected: 03/19/14 12:30
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-6
Matrix: Solid
Percent Solids: 71.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		130	37	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,1,2,2-Tetrachloroethane	ND		130	21	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,1,2-Trichloroethane	ND		130	28	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		130	66	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,1-Dichloroethane	ND		130	41	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,1-Dichloroethene	ND		130	46	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2,4-Trichlorobenzene	ND		130	50	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2-Dibromo-3-Chloropropane	ND		130	66	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2-Dibromoethane	ND		130	5.0	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2-Dichlorobenzene	ND		130	34	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2-Dichloroethane	ND		130	54	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,2-Dichloropropane	ND		130	21	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,3-Dichlorobenzene	ND		130	35	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
1,4-Dichlorobenzene	ND		130	18	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
2-Hexanone	ND		660	270	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
2-Butanone (MEK)	ND		660	390	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
4-Methyl-2-pentanone (MIBK)	ND		660	42	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Acetone	ND		660	540	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Benzene	ND		130	6.3	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Bromodichloromethane	ND		130	26	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Bromoform	ND		130	66	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Bromomethane	ND	*	130	29	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Carbon disulfide	ND		130	60	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Carbon tetrachloride	ND		130	34	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Chlorobenzene	ND		130	17	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Dibromochloromethane	ND		130	64	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Chloroethane	ND		130	27	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Chloroform	ND		130	91	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Chloromethane	ND	*	130	31	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
cis-1,2-Dichloroethene	ND		130	36	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
cis-1,3-Dichloropropene	ND		130	32	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Cyclohexane	ND		130	29	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Dichlorodifluoromethane	ND		130	58	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Ethylbenzene	ND		130	38	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Isopropylbenzene	ND		130	20	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Methyl acetate	ND		130	63	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Methyl tert-butyl ether	ND		130	50	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Methylcyclohexane	**100**	**J**	130	62	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Methylene Chloride	ND		130	26	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Styrene	ND		130	32	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Tetrachloroethene	**13000**	**E**	130	18	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Toluene	ND		130	35	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
trans-1,2-Dichloroethene	ND		130	31	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
trans-1,3-Dichloropropene	ND		130	6.3	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Trichloroethene	**170**		130	37	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Trichlorofluoromethane	ND		130	62	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Vinyl chloride	ND		130	44	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1
Xylenes, Total	ND		260	22	ug/Kg	☼	03/19/14 18:48	03/20/14 03:20	1

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-006-1
Date Collected: 03/19/14 12:30
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-6
Matrix: Solid
Percent Solids: 71.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*103*		*53 - 146*	*03/19/14 18:48*	*03/20/14 03:20*	*1*
Toluene-d8 (Surr)	*101*		*50 - 149*	*03/19/14 18:48*	*03/20/14 03:20*	*1*
4-Bromofluorobenzene (Surr)	*102*		*49 - 148*	*03/19/14 18:48*	*03/20/14 03:20*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		530	150	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,1,2,2-Tetrachloroethane	ND		530	86	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,1,2-Trichloroethane	ND		530	110	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		530	260	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,1-Dichloroethane	ND		530	160	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,1-Dichloroethene	ND		530	180	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2,4-Trichlorobenzene	ND		530	200	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2-Dibromo-3-Chloropropane	ND		530	260	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2-Dibromoethane	ND		530	20	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2-Dichlorobenzene	ND		530	130	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2-Dichloroethane	ND		530	220	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,2-Dichloropropane	ND		530	86	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,3-Dichlorobenzene	ND		530	140	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
1,4-Dichlorobenzene	ND		530	74	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
2-Hexanone	ND		2600	1100	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
2-Butanone (MEK)	ND		2600	1600	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
4-Methyl-2-pentanone (MIBK)	ND		2600	170	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Acetone	ND		2600	2200	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Benzene	ND		530	25	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Bromodichloromethane	ND		530	110	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Bromoform	ND		530	260	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Bromomethane	ND		530	120	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Carbon disulfide	ND		530	240	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Carbon tetrachloride	ND		530	130	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Chlorobenzene	ND		530	70	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Dibromochloromethane	ND		530	260	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Chloroethane	ND		530	110	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Chloroform	ND		530	360	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Chloromethane	ND		530	130	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
cis-1,2-Dichloroethene	ND		530	150	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
cis-1,3-Dichloropropene	ND		530	130	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Cyclohexane	ND		530	120	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Dichlorodifluoromethane	ND		530	230	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Ethylbenzene	ND		530	150	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Isopropylbenzene	ND		530	79	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Methyl acetate	ND		530	250	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Methyl tert-butyl ether	ND		530	200	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Methylcyclohexane	ND		530	250	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Methylene Chloride	ND		530	100	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Styrene	ND		530	130	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Tetrachloroethene	**14000**		530	71	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Toluene	ND		530	140	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
trans-1,2-Dichloroethene	ND		530	120	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
trans-1,3-Dichloropropene	ND		530	25	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: Pete's Dry Cleaning site

TestAmerica Job ID: 480-56281-1

Client Sample ID: 932128-TP-006-1
Date Collected: 03/19/14 12:30
Date Received: 03/19/14 16:30

Lab Sample ID: 480-56281-6
Matrix: Solid
Percent Solids: 71.9

Method: 8260C - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		530	150	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Trichlorofluoromethane	ND		530	250	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Vinyl chloride	ND		530	180	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4
Xylenes, Total	ND		1100	89	ug/Kg	☼	03/19/14 18:48	03/20/14 13:08	4

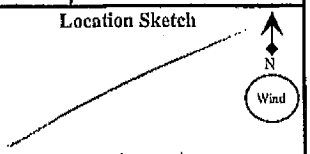
Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*53 - 146*	*03/19/14 18:48*	*03/20/14 13:08*	*4*
Toluene-d8 (Surr)	*102*		*50 - 149*	*03/19/14 18:48*	*03/20/14 13:08*	*4*
4-Bromofluorobenzene (Surr)	*101*		*49 - 148*	*03/19/14 18:48*	*03/20/14 13:08*	*4*

TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Test Pit ID: TP-2
Project Location: Lockport, NY		Page No. 1
Project No.: 3617122244	Client: NYSDEC	of: 1
Test Pit Location: TP-2	Monitoring Equipment: PID	
Weather: Overcast, low 40's	Photographs (Y/N): Y	Protection Level: D
Surface Conditions: Snow Pack	Length of Exc: 5'	Width of Exc: 3
Subcontractor: Empire	Date Started: 3/19/14	Date Completed: 3/19/14
Operator: Art Roske	Logged By: R Torrey	Checked By: C. Stopler 3/25/14
Equipment: Track Mounted Excavator	Refusal Depth: N/A	Total Depth: 3
Reference Elevation:	Water Level: N/A	Time: —

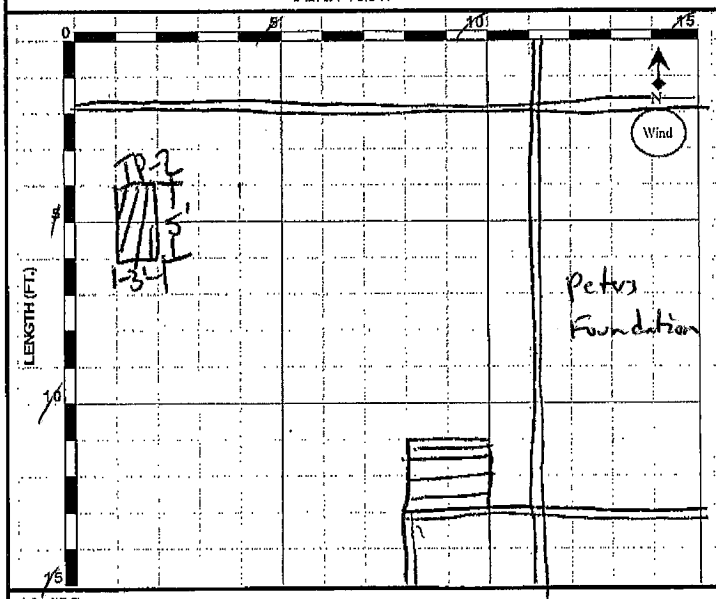
Location Sketch



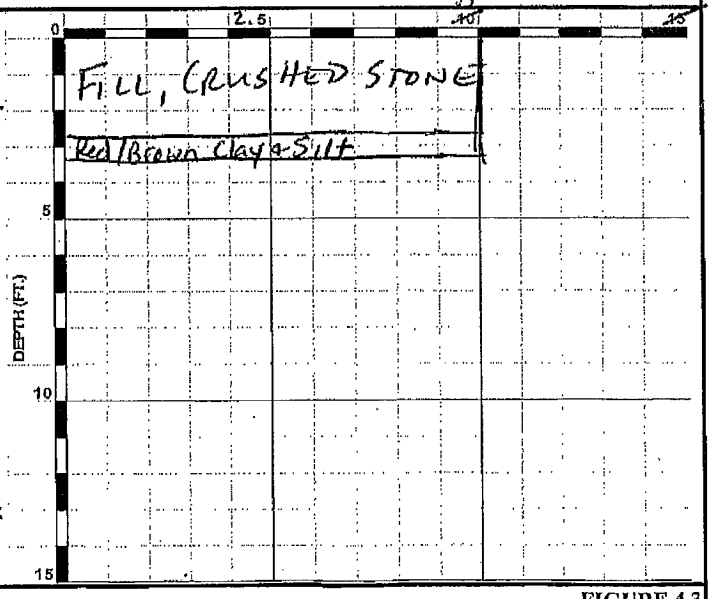
See Work Plan Figure

Sample Information: Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	Monitoring: PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0			0.0				0-2.8' Crushed Stone Fill	GP	Empire collected waste characterization sample @ 2-3' bgs.
1							2.8-3.0' Red/Brown Clay and Silt, Dry	ML	
2									
3			0.6				Bottom of Test Pit = 3' BGS		

PLAN VIEW



CROSS-SECTIONAL VIEW



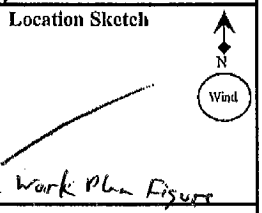
NOTES:

FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

TEST PIT RECORD

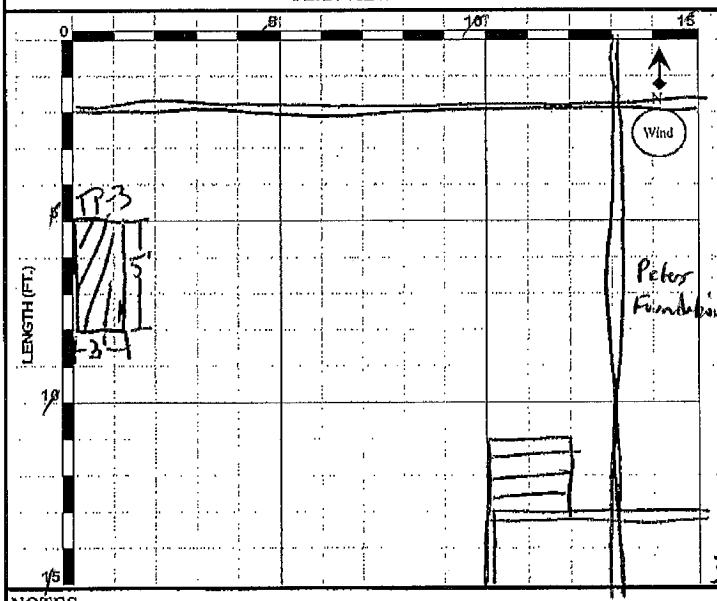
MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Test Pit ID: TP-3	
Project Location: Lockport, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Test Pit Location: TP-3	Monitoring Equipment: PID	Location Sketch	
Weather: Overcast, Low 40's	Photographs (Y/N): Y	Protection Level: D	
Surface Conditions: Snow Pack	Length of Exc: 5'	Width of Exc: 3'	
Subcontractor: Empire	Date Started: 3/19/14	Date Completed: 3/19/14	
Operator: Art Koske	Logged By: R Torrey	Checked By: C. Snyder 3/25/14	
Equipment: Track Mount Excavator	Refusal Depth: N/A	Total Depth: 2'	
Reference Elevation:	Water Level: N/A	Time:	

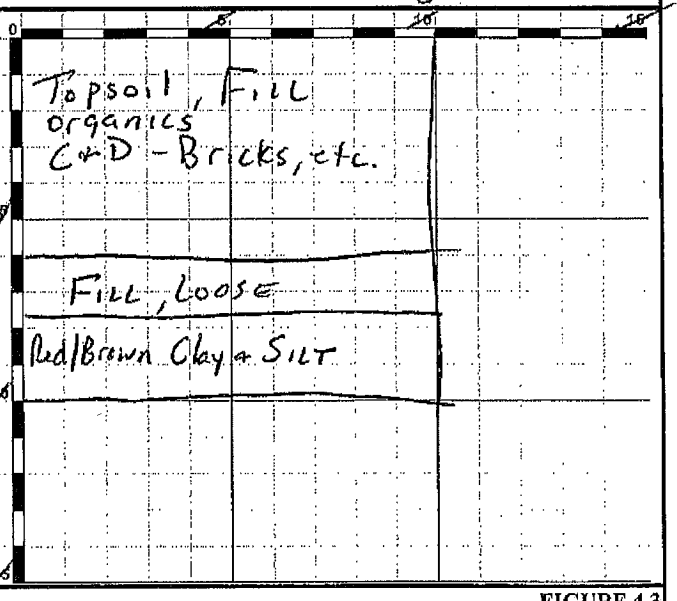


Sample Information: Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	Monitoring: PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0			0.0				0-1.2' Topsoil with Fill - Bricks, C+D organics	GP	1015- Sample
1	⊗		0.8				1.2-1.5' Black Fill, Loose, Dry	GP	932128-TP-003-1
2			3.1				1.5-2' Red/Brown Clay and Silt, Dry	ML	No odor
							Bottom of Test Pit = 2' Bgs		

PLAN VIEW



CROSS-SECTIONAL VIEW



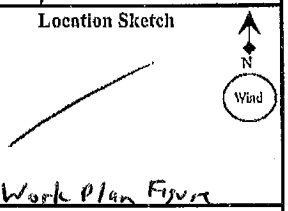
NOTES:

FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

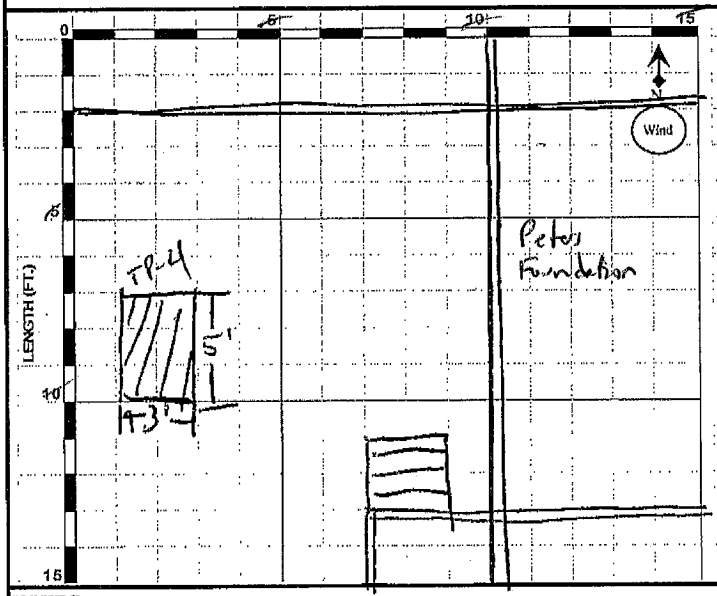
Project Name: Peter's Dry Cleaning		Test Pit ID: TP-4	
Project Location: Cockport, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Test Pit Location: TP-4	Monitoring Equipment: PID	Location Sketch	
Weather: Overcast, low 40's	Photographs (Y/N): Y	Protection Level: D	
Surface Conditions: Snow Pack	Length of Exc: 5'	Width of Exc: 3'	
Subcontractor: Empire	Date Started: 3/19/14	Date Completed: 3/19/14	
Operator: Art Koslic	Logged By: L Jorkey	Checked By: C Snyder 3/25/14	
Equipment: Track Mount. Excavator	Refusal Depth: N/A	Total Depth: 2'	
Reference Elevation:	Water Level: N/A	Time: —	



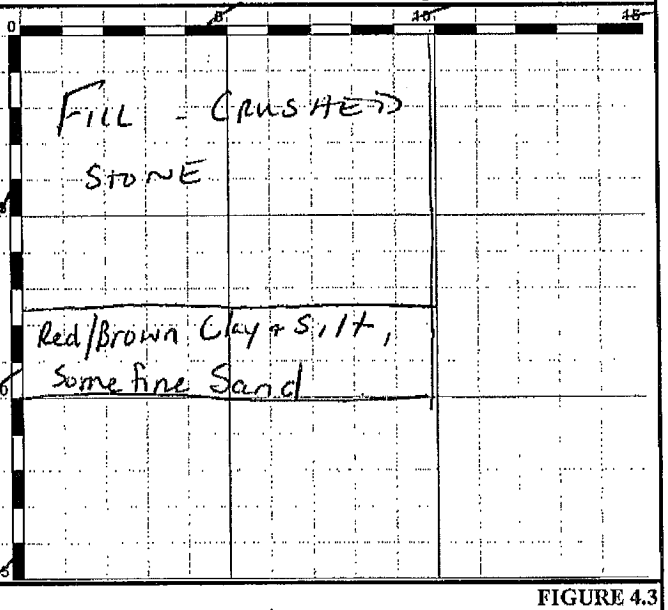
See Work Plan Figure

Sample Information: Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	Monitoring: PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0			0.0				0-1.5' Crushed Stone, Fill	GP	1035-Sample
1									932128-TP-004-1
2	⊗		0.1				1.5-2.0' Red/Brown Clay and Silt, Some Fine Sand, DRY	ML	No Odor
							Bottom of Test Pit = 2' Bgs		

PLAN VIEW



CROSS-SECTIONAL VIEW



NOTES:

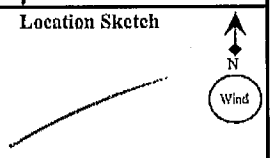
FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Test Pit ID: TP-5	
Project Location: Lockport, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Test Pit Location: TP-5	Monitoring Equipment: PID		
Weather: Overcast, Mid 40's	Photographs (Y/N): Y	Protection Level: D	
Surface Conditions: Snow Pack	Length of Exc: 8'	Width of Exc: 3'	
Subcontractor: Empire	Date Started: 3/19/14	Date Completed: 3/19/14	
Operator: Art Koske	Logged By: R Tarrey	Checked By: C. Stapler 3/25/14	
Equipment: Track Mount. Excavator	Refusal Depth: N/A	Total Depth: 8'	
Reference Elevation: —	Water Level: N/A	Time: —	

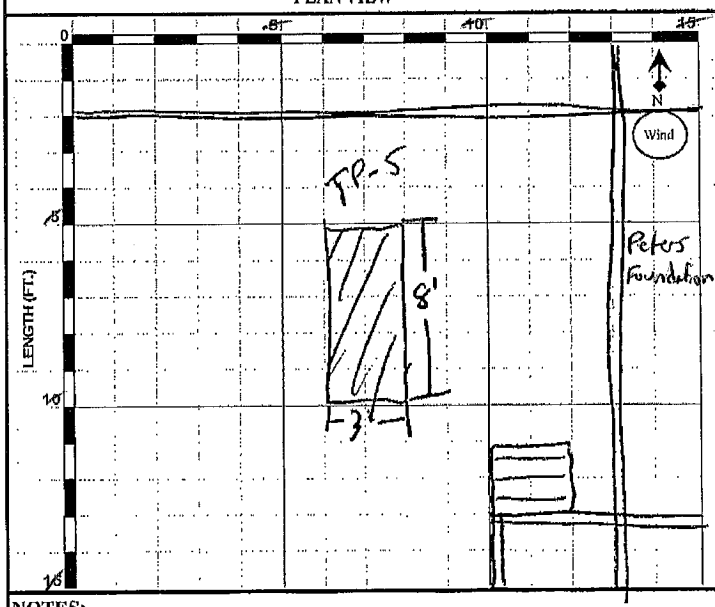
Location Sketch



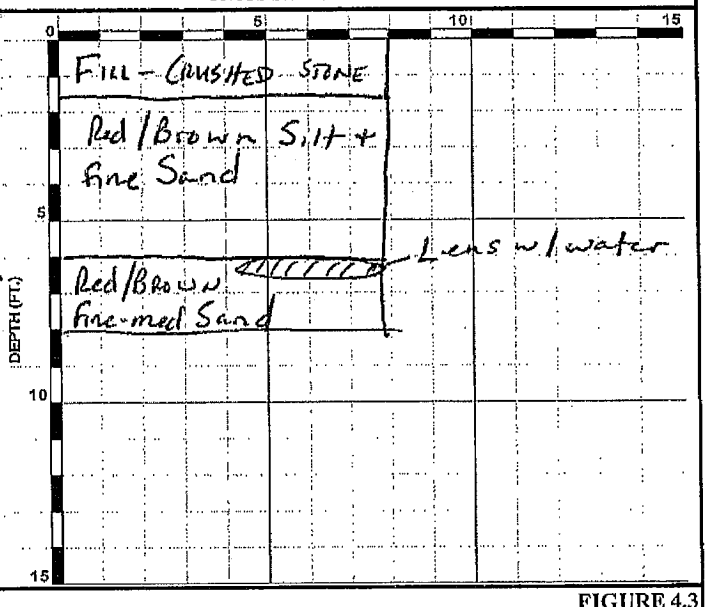
See Work Plan Figure

Sample Information			Monitoring				Sample Description and Classification	USCS Group Symbol	Remarks
Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID			
0							0-1.5' Fill - Crushed stone	GP	2 samples collected:
1	⊗						1.5-6' Red/Brown Silt and Fine Sand, Dry	SM	1115- 932128-TP-005-1
2									
3							6-8' Red/Brown Fine-med. Sand, very little Silt. Lens of water @ 6.0'.	SW	1120- 932128-TP-005-8
4									
5			2.5						
6							Bottom of Test Pit = 8.0' bgs		
7									
8	⊗		3.3						

PLAN VIEW



CROSS-SECTIONAL VIEW



NOTES:

FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

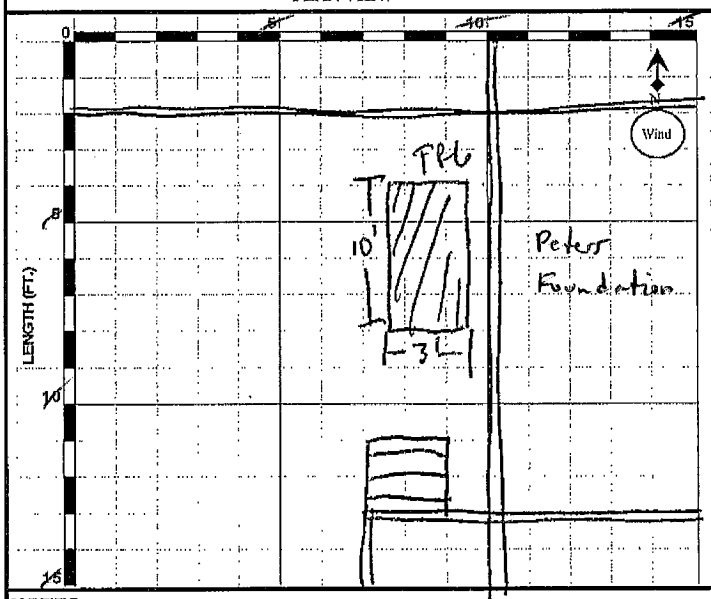
TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

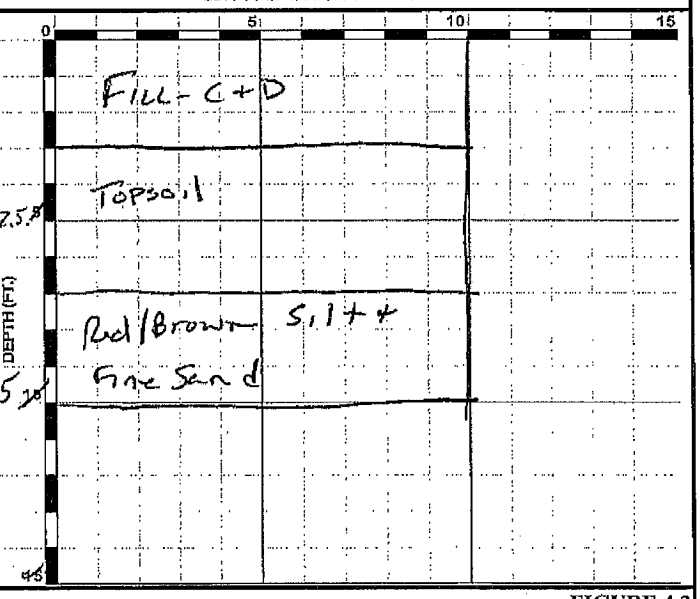
Project Name: PETER'S DRY CLEANING		Test Pit ID: TP-6	
Project Location: LOCKPORT, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Test Pit Location: TP-6	Monitoring Equipment: PID	Location Sketch: See Work Plan Figure	
Weather: Overcast, mid 40's	Photographs (Y/N): Y	Protection Level: D	
Surface Conditions: Snow Pack	Length of Exc: 10	Width of Exc: 3	
Subcontractor: EMPIRE	Date Started: 3/19/14	Date Completed: 3/19/14	
Operator: ART KOSLE	Logged By: R. TORREY	Checked By: C. Stapler 3/25/14	
Equipment: TRUCK MOUNT. EXCAVATOR	Refusal Depth: N/A	Total Depth: 5'	
Reference Elevation:	Water Level: N/A	Time:	

Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0									
1			0.0				0-1.5' Fill Material - C+D, Tile, Brick, etc.	GP	1230 - Sample 932128-TP-D06-1
2	⊗								
3			0.0				1.5-3.5' Dark Brown/Black Sand, Silt, Organics - Appears to be Topsoil. No odor, DRY	PT	
4									
5			0.0				3.5-5.0' Red/Brown Silt and Fine Sand, DRY.	SM	
							Bottom of Test Pit = 5.0' bgs		

PLAN VIEW



CROSS-SECTIONAL VIEW



NOTES:

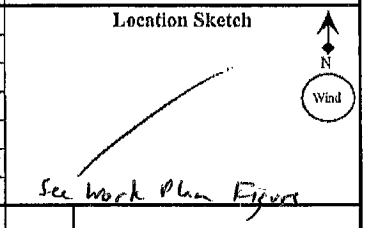
FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

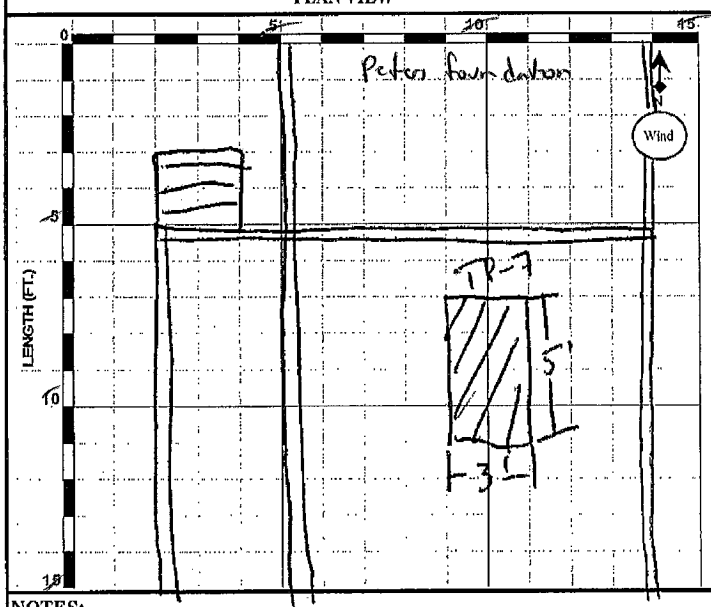
Project Name: PETER'S DRY CLEANING		Test Pit ID: TP-7
Project Location: LOCKPORT, NY		Page No. 1
Project No.: 3612122244	Client: NYSDEC	of: 1
Test Pit Location: TP-7	Monitoring Equipment: PID	
Weather: Overcast, high 30's	Photographs (Y/N): Y	Protection Level: D
Surface Conditions: Snow Pack	Length of Exc: 5'	Width of Exc: 3'
Subcontractor: EMPIRE	Date Started: 3/19/14	Date Completed: 3/19/14
Operator: ARTH. ROSKE	Logged By: R TORREY	Checked By: C. Stapler 3/25/14
Equipment: TRACK MOUNT EXCAVATOR	Refusal Depth: N/A	Total Depth: 5'
Reference Elevation:	Water Level: N/A	Time: —

Location Sketch

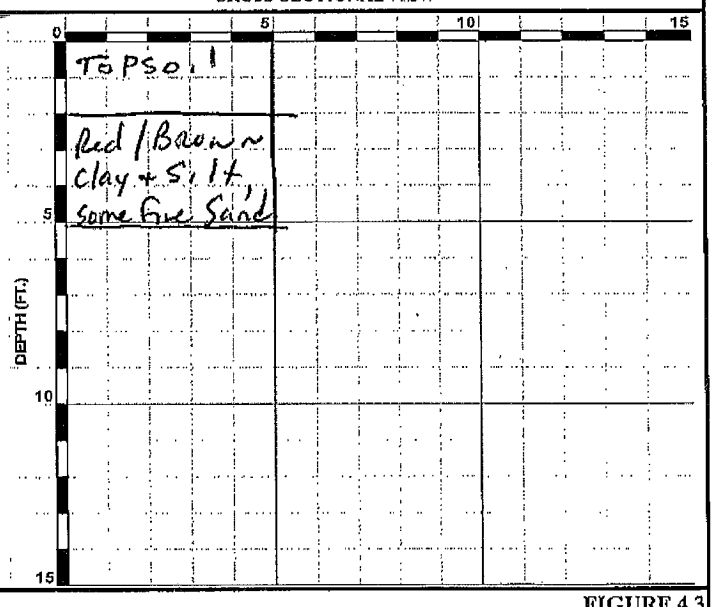


Sample Information: Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	Monitoring: PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0			100-200				0-2' TOPSOIL - DARK BROWN, ORGANICS, water runoff from snow melt.	PT	Sample collected @4-5' bgs by Empire for waste characterization
1									
2							2-5' Red/Brown Clay and Silt, some fine sand, Dry	ML	
3			100-400						
4			MAX ~430ppm						
5			28.1				BOTTOM OF TEST PIT = 5' bgs		

PLAN VIEW



CROSS-SECTIONAL VIEW



NOTES:

FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

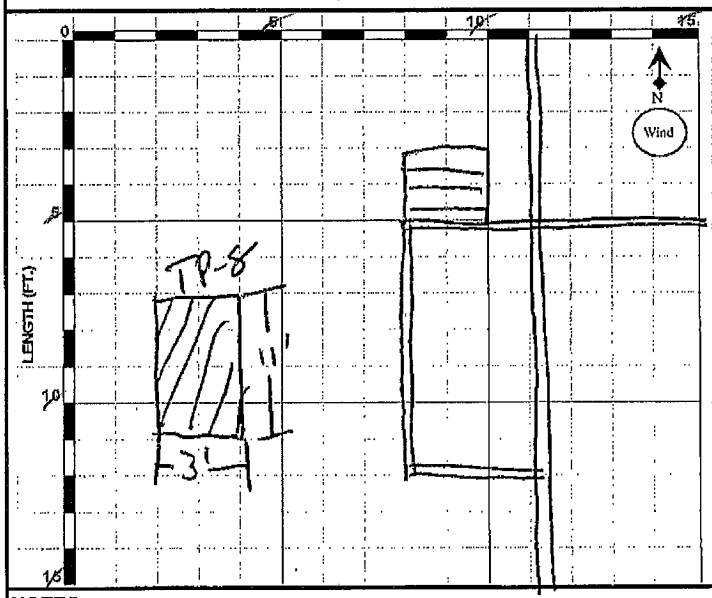
TEST PIT RECORD

MACTEC
511 Congress Street, Portland Maine 04101

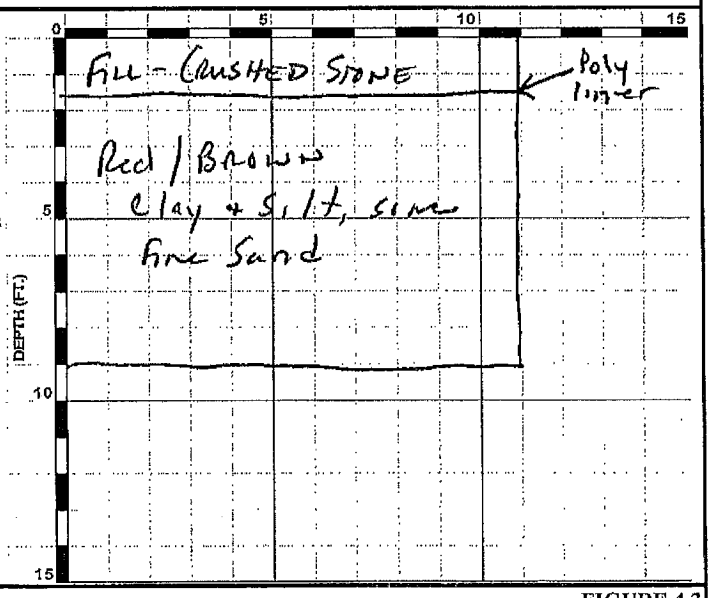
Project Name: PETER'S DRY CLEANING		Test Pit ID: TP-8
Project Location: LOCKPORT, NY		Page No. 1
Project No.: 3612122244	Client: NYSDEC	of: 1
Test Pit Location: TP-8	Monitoring Equipment: PID	Location Sketch (N, Wind)
Weather: Overcast, high 30's	Photographs (Y/N): Y	Protection Level: D
Surface Conditions: Snow Pack	Length of Exc: 11'	Width of Exc: 3'
Subcontractor: EMPIRE	Date Started: 3/19/14	Date Completed: 3/19/14
Operator: ART KOSKE	Logged By: R TORREY	Checked By:
Equipment: TRACK MOUNT. EXCAVATOR	Refusal Depth: N/A	Total Depth: 9'
Reference Elevation:	Water Level: N/A	Time: —

Depth (ft. bgs)	Sample No. & Type	Pocket Pen/ Torvane (Kg/cm²)	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0							0-1.5' FILL- CRUSHED STONE	GP	930 - Sample 932128-TP-008-1
1	⊠						1.5-9.0' Red/Brown Clay & SILT, Some fine Sand, DRY	ML	WATER RUNOFF from upper layer of Fill - surface melt. Dry at depth
2			73						
3									
4			241				NOTE: Poly liner between Fill and clay/silt layers.		
5									
6									
7									
8			83				Bottom of Test Pit = 9.0' bgs		
9									

PLAN VIEW



CROSS-SECTIONAL VIEW



NOTES:

FIGURE 4.3
TEST PIT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-~~007~~ 001
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-001	Refusal Depth: 12.8'	Total Depth: 12.8'	Bore Hole ID/OD: 2 1/4
Weather: Fdly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Natures Way ENVT	P.I.D (eV): 4-130 PPM	Protection Level: D	Sampler: 4' Polytube
Driller: NMe	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C.Lyons	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unkn	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
1		75%			6.9 ppm				FILL: Gravel, Sand, Silt, Brick		
2									Silt: Non Plastic, 10% gravel, Moist, Reddish Brown	ML	
3											
4	DP001-0204				300 ppm						
					10.6 ppm				Silt: Non Plastic, Moist, Dark Brown	ML	
5					4.3 ppm				Silt: Non Plastic, Wet, Reddish Brown	MH	
6		100%							SAND: Poorly Graded, 30-40% gravel 1/8-1/4" Reddish brown wet.	SP	
7					7.2 ppm						
8					0.8 ppm				SAND Poorly Graded, 30-40% gravel 1/8-1/4 Reddish Brown, Med-coarse SAND.	SP	
9									SAND: Poorly Graded; TRACE Silt, Moist	SP-ML	ML
10	9.5'									SP	
11		100%			11.3 ppm						
12	DP001-1012	100%							SAND Poorly Graded, Coarse Sand, Trace Silt Greyish Brown	SP-ML	
13									* Refusal 12.8'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-002
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122224/4	Client: NYSDEC		of: 1
Boring Location: DP-002	Refusal Depth: 7.4'	Total Depth: 7.4'	Bore Hole ID/OD: 2 1/4
Weather: Rfg Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Natures Way Enviro	P.I.D (eV): 3000 ppm	Protection Level: D	Sampler: 4' Polytube
Driller: Nate	Date Started: 10/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: CLyon	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNKN.	Water Level: —	Time: —	Hammer Type: NA

Sample Information						Monitoring						
Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
1		75%							FILL: gravel, asphalt, SAND		
2	1.0'								SAND: Poorly graded, Trace silt, 4% Gravel 1/4" Moist, grayish Brown	SP-SM	
3											
4					1632 ppm						
5		100%				1955 ppm			SAND: Poorly graded; trace gravel 30% 1/4"	SP-SM	
6											
7					3000 ppm						
8	7.4'								* Refusal @ 7.4'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-003
Project Location: Lyon Park, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-003	Refusal Depth: 10.1'	Total Depth: 10.1'	Bore Hole ID/OD: 2¼
Weather: Ptly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Natures Way Envt	P.I.D (eV): 0 - 3200 PPM	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1¼
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unkn	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									BLK Loam		
1											
2		100%							Silt: Non plastic, moist, Brown, fine	ML	
3					0.2 PPM						
4									Silt: Non Plastic, Moist, Reddish Brown	ML	
5					46 PPM						
5.4											
6		100%							Silt: Non plastic; Moist, Dark Brown	ML	Heavy odor
7					3200 PPM						
8									SAND: Poorly graded, 20% gravel; wet gray brown	SP	
9		100%									
9.2									SAND: Poorly graded; trace silt, Wet	SP-ML	
9.6									SAND: Poorly graded, trace silt, Wet, loose	SP-ML	
10.1											
11									Refusal @ 10.1'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-004
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-004	Refusal Depth: 10.4'	Total Depth: 10.4'	Bore Hole ID/OD: 2"/4
Weather: Pt ly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way ENVT	P.I.D (eV): 1868 - 2763 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1"/4
Rig Type/Model: —	Logged By: C. Lynn	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0					-1868 ppm				Silt - Dark Brown, moist,	ML	ODOR - petrol.
1		4'/2.5'				-2763 ppm			Silt: Non-plastic, Trace 5% gravel, moist, Reddish brown	ML	
2											
3					-643 ppm						
4									Silty - Non plastic, moist, firm, Reddish Brown	ML	
4.6' 5	DP-004-4.5-5	100%			-2686 ppm	-3876 ppm			SAND Poorly graded, 25-40% gravel, loose, wet.	SP	
6											
7											
8					← 1875 ppm				SAND Poorly graded, 40-50% gravel, Wet, Grayish Brown,	SP	ODOR - Petrol.
9		100%									
9.8 10					← 3494 ppm				Silt - Non-Plastic, 5-10% gravel, 10% sand (med. coarse), wet	ML	
11									* Refusal @ 10.4'		

NOTES:
Installed 1" Microwell w/ 5' screen, bottom of well ≈ 9' (cave to cave in)
Well set in clean sand w/ 6"-12" Bentonite seal @ top.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

624.3'

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peters Dry Cleaning		Boring ID: DP-005
Project Location: Lockport, NY		Page No. 1
Project No.: 3612122244	Client: NYSDEC	of: 1
Boring Location: DP-005	Refusal Depth: 11.4'	Total Depth: 11.4'	Bore Hole ID/OD: 2/4
Weather: Ptly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 58-1430 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1/4
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: unk	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0 – 2		100%			58.6				Fill: asphalt, gravel, brick, silt dark brown		
2 – 3.8					262 ppm				SAND: poorly graded, trace silt, moist.	SP-SM	
3.8									Silt: dark brown, firm, moist.	ML	~~Odor~~
3.8 – 6.5	DP-005004	100%			~~979~~	5753			~~Silty~~ Sandy gravel: gravel 1/4 - 3/8", ~~gravelly silt~~ Non plastic, wet, (sandy gravel) grayish brown	GM-ML	odor
6.5 – 8					186				Silt: (trace gravel 5%) reddish brown, wet	ML	odor
8 – 10.5	DP005008	100%			757				Sandy gravel: gravel 1/4 - 3/8", trace silt 5%, loose	GM-ML	odor
10.5 – 11.4					1430				Silt: trace sand, plastic, wet, grayish brown	MH	odor
12									* Refusal @ 11.4'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-006	
Project Location: Lockport, NY			Page No. 1	
Project No.: 3612122244	Client: NYSDEC		of: 1	
Boring Location: DP-006	Refusal Depth: 10.1'	Total Depth: 10.1'	Bore Hole ID/OD: 2 1/4	
Weather: Ptly Cloudy	Soil Drilled:	Method: Direct Push	Casing Size: NA	
Subcontractor: Nature's Way envt	P.I.D (eV): 5-20 ppm	Protection Level: D	Sampler: 4' Poly tube	
Driller: Nate	Date Started: 6/23/13	Date Completed: 6/23/13	Sampler ID/OD: 1 1/4	
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA	
Reference Elevation: Unk	Water Level: —	Time: —	Hammer Type: NA	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0		↑ 100%							Gravel: Black, sand, gravel, asphalt		
1.8		↓			5.8				Silt: non-plastic, firm, moist, reddish-brown	ML	
4	DP-006-005	↑ 100% ↓			40 (less than 40)				Silt: mod-plastic, firm, reddish-brown; 5% gravel 1/4"-3/8"	ML	No odor
8	DP-006-008				45.1				Sandy gravel: gravel 1/4-3/8", wet, gray	GM-ML	
9									Silt: Non-plastic, moist, reddish brown	ML	
9.6					20.4				SAND: poorly graded, trace silt, moist.	SM-ML	
10											
11									@ Refusal 10.1'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-007
Project Location: Locust Park NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-007	Refusal Depth: 14.8'	Total Depth: 14.8'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: 14.8'	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 0.0 - 47.8 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model: -	Logged By: C. Lyons	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unk	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
									Asphalt / Gravel		
1					0.0				Silty gravel - moist, non-plastic, DRK Brown	GM-ML	
2		100%							Silt non plastic, moist, 10% gravel, Redish Brown.	ML	
3											
4	DP-007014								Silt non plastic, 10-20% sand, dry, firm, Redish brown.	ML	
5		100%			0.0						
6									Silt Plastic, moist.	MH	
7											
8									Sand - Poorly graded, 10-20% gravel Fine sand, wet, Redish Brown	SP	
9											
9.2		100%							Sand Poorly graded, 10% gravel, coarse sand, firm, wet.	SP	
10					2.0						
11											
12					1.2				Sand - Poorly graded, 10% gravel, wet, Grayish Brown.	SP	
13		100%			8.0	21.9					
14		100%			22				Sand Poorly graded,	SP	
14.8'		SAMPLE DP-007014			13.8				* Refusal @ 14.8' Silt firm, moist, Brown, 0.8" thick	ML	

NOTES:
Installed 1" microwell @ this location.; btm of Well 11.9' (due to cave in). 10' SCREEN. Well set in Clean sand w/ 6"-12" Bentonite Seal @ top.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-008
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-008	Refusal Depth: 10.8'	Total Depth: 10.8'	Bore Hole ID/OD: 2"/4
Weather: Rain, Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: N/A
Subcontractor: Natures Way Env.	P.I.D (eV): 38 - 176 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 6/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1"/4
Rig Type/Model: —	Logged By: C. Lyons	Checked By: BSL 2/27/14	Hammer Wt/Fall: N/A
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: N/A

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									All: Gravel, Asphalt, Black		
1									Silt: Non-plastic, Trace gravel. 30% 1/4 - 3/8", Moist. Dark Brown	ML	
2		100%									
3											
3.5									SAND: Poorly sorted, firm, Moist, (fine SAND)	SP	
4									Silt: Non-plastic, Moist, Redish brown, firm	ML	
5											
5'									~~Silt:~~ 30% gravel, Moist, Brown, SAND:	~~ML~~ SP	
6											
7	DP008006	100%			50ppm	38.5					
8									SAND: 30% gravel, loose, wet, 1/4-3/8"	SP	
9					176						
9'	DP008008	100%							Silt: firm, Redish brown, Moist: Non-plastic	ML	
10					46ppm						
11									* Refusal 10.8'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

624.8

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-009
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-009	Refusal Depth: 10.6'	Total Depth: 10.6'	Bore Hole ID/OD: 2"/4
Weather: Partly Cloudy	Soil Drilled: 10.6	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Earth	P.I.D (eV): 28 - 4720 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Mike	Date Started: 10/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1"/4
Rig Type/Model: Direct Push	Logged By: C. Lynn	Checked By: 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
1		4							fill: gravely, asphalt.		
2	1.8	4.0/6			28.2ppm				SAND: Poorly graded, TRACE silt 10-20%, wet, Radish Brown.	SM-ML	
3											
4									Silt: Non-plastic; 10% fine sand, wet, Radish Brown	ML	
5						4263					
6		10%									
7	6.6'	DP-009@7			4720				SAND: Poorly graded, 20% gravel 1/4-3/8"; DLK-DRK BROWN-gray, wet	SP-SM	odor-
8					3557						
9		4 100%			3431				SAND: Poorly graded; 20% gravel 1/4-3/8 DARK Brown, wet	SP-SM	
10	9.6	DP-009@8			339				SAND: Wet, Brown. No gravel, poorly graded fine sand.	SP	
11									* Refusal 10.6'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-010
Project Location: Lockport, NY.			Page No. 1
Project No.: 3612122224/4	Client: NYSDEC		of: 1
Boring Location: DP-010	Refusal Depth: 10.7'	Total Depth: 10.7'	Bore Hole ID/OD: 2¼
Weather: Pt Cloudy	Soil Drilled: 10.7'	Method: Direct Push	Casing Size: NA
Subcontractor: Natures Image Env't	P.I.D (eV): 2-9 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/23/13	Date Completed: 10/23/13	Sampler ID/OD: 1 1/4
Rig Type/Model: –	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNKN	Water Level: –	Time: –	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									fill: gravel, asphalt, brick, concrete.		
1									Silt: Dark Brown	ML	
1.5'											
2		100%							Silt: firm, non-plastic, moist, Reddish-Brown.	ML	
3					2.3 ppm						
4											
5	DP010004								Silt: Mod. Plastic, Moist, Reddish Brown	MH	
6		75%			4 ppm	6.7 ppm					
7											
8									Silt: Plastic, Wet, Brown	MH	
9	DP010008	100%			9.1 ppm						
10	10'								SAND: Brown; wet, firm.	SM MH	
11	10.7								* Refusal 10.7'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peters Dry Cleaners		Boring ID: DP-011	
Project Location: LockPort, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Boring Location: DP-011	Refusal Depth: 13'	Total Depth: 13'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: 13'	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 4-77 PPm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 6/23/13	Date Completed: 6/23/13	Sampler ID/OD: 1 1/4
Rig Type/Model:	Logged By: Clayman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK.	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0–1					4.0				Fill: gravel trace sand		
1–4		75%			18				Silt: Nonplastic, trace sand, Reddish Brown Few dark blk stains	ML	
4–7	DP011005	100%			9.0ppm				Silt: Nonplastic, moist, firm, Dark Brown	ML	
7–7.2'					3.5ppm				SAND: Poorly graded; v fine, trace silt/gravels Reddish brown, Dry	SP	
7.2–10		100%			15.4				SAND: Poorly sorted; 30% gravel 1/8-1/4" Wet, loose; Brown	SP	No noticeable Odor
10–12	DP011011				66.1				SAND: Poorly sorted; 10% gravel 1/8-1/4 Firm Dry	SP	
12–13'					17.5				SAND: Poorly sorted, 40% gravel 1/8-1/4	SP	
13'					77.5ppm				* Refusal @ 13'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

624.4'

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peters Dry Cleaners			Boring ID: DP-012
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122274	Client: NYSDEC		of: 1
Boring Location: DP-012	Refusal Depth: 11.5'	Total Depth: 11.5'	Bore Hole ID/OD: 2"/4
Weather: Partly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Env.	P.I.D (eV): 10-4000 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: None	Date Started: 10/23/17	Date Completed: 10/23/17	Sampler ID/OD: 1"/4
Rig Type/Model: —	Logged By: CL	Checked By: DSL 2/27/18	Hammer Wt/Fall: NA
Reference Elevation: GRADE	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring				Sample Description and Classification	USCS Group Symbol	Remarks
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID			
0.0									fill: gravel, trace sand, grey brown (BLK staining coal? / tarpaper?)		
2	1.7	75%			10ppm				Silt: Non plastic, Moist, DRK Brown	ML	
4									Silt: Non plastic, Wet, Gray Brown	ML	
5	4.5	75%							Silt: Non plastic; Moist, Reddish Brown.	ML	
7	7.0	DP-012-07			362ppm				SAND: Poorly graded, fine sand, GRAYISH BLK, 20% silt	SM-ML	Heavy odor
9		DP-012-09			400ppm				SAND: Poorly graded, 30-40% gravel, grayish BLACK	SP	
11	9.8	100%			244				Silt: Non plastic, TRACE fine SAND, Moist.	ML	
12	11.5								* Refusal @ 11.5'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-013
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122444	Client: NYSDEC		of: 1
Boring Location: DP-013	Refusal Depth: 10.2'	Total Depth: 10.2'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: +	Method: Direct Push	Casing Size: NA
Subcontractor: Nothnagle Well Drilling	P.I.D (eV): 2500 - 79999 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: Chy	Checked By: DSL 2/27/14	Hammer Wt/Fall: —
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: —

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											PID Background 0.3 ppm
1		100%			2457 ppm				Silt: Non-plastic, moist, Dark Brown trace sand.	ML	Noticable odor
2									Silt: plastic, moist, Redish Brown	MH	
3					79999 ppm						
4									Silt: Non plastic; 20% fine sand, wet, Redish Brown.	MH	
5	SB01				3479						
5.4' 6		100%			8571				Sand: Poorly graded, 30-40% gravel 1/8"-1/4" Loose, moist- Redish Brown	SP-SM	
6.7' 7					802				Sand: Poorly graded, Firm, moist, Redish Brown	SP-ML	
8					4537				Sand: Poorly graded, loose, wet Redish-Brown (sheen)	SP-ML	Sheen
9.0' 9		100%			4000 ppm				Gravelly Sand: wet. 40-50% fines	GM-MH	
9.3' 10					435 ppm				Silt: Non plastic; Trace fine Sand, Redish Brown	ML	
10.2' 11									Refusal @ 10.2'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC 511 Congress Street, Portland Maine 04101			
	Project Name: Peters Dry Cleaning		Boring ID: DP-014
	Project Location: Lockport, NY		Page No. 1
	Project No.: 3612122244	Client: NYSDEC	of: 1
Boring Location: DP-014	Refusal Depth: 11.5'	Total Depth: 11.5'	Bore Hole ID/OD: 2¼
Weather: Ptly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Natures Way Env	P.I.D (eV): 23-1360 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1¼
Rig Type/Model: —	Logged By: CLynn	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
1					23ppm				Fill: gravel; asphalt, brick, dark stains.		No noticeable odor
1.41' – 2		75%							Silt: NonPlastic, firm, Dry, DRK Redish Brown.	ML	↓
3					75ppm						
4	DP014-04								Silt: NonPlastic, firm, Dry. DRK Redish Brown	ML	
5					16ppm				Silt: Mod plastic, Trace gravel, Moist, Redish brown	ML	
6		100%									
7											
7.5					16.7ppm				SAND Poorly graded, 30%-40% gravel, Loose, DRK Brown	SP	-GM-ML
8	DP014-09				135ppm				SAND Poorly graded; 30-40% gravel, Loose DRK Brown	SP	-GM-ML
9.0									~~Silt~~: SAND: (Trace silt) Non graded, vf sand wet, Plastic/Loose	SM-ML	
10		100%			17?						
10.8 – 11					13ppm				Silt: Non-Plastic, firm, Moist	ML	
11.5' – 12									*Refusal @ 11.5'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-015
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-015	Refusal Depth: 10.2'	Total Depth: 10.2'	Bore Hole ID/OD: 2 1/4
Weather: Rainy Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nothnagle Drilling	P.I.D (eV):	Protection Level: D	Sampler: 4' Poly tube
Driller: Mike	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C. Lyons	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNKN	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									fill: Gravel, Sand, Dry		
1	1	75%			37.7 ppm				SAND: Poorly graded, 40% gravel; Blk, Asphalt/Coal?	SP	
1.4									SAND: Trace gravel, Dry; Fine, Reddish-Brown	SP	
2											
3					3.2 ppm						
4									Same	SP	
4.5					5.0 ppm				Silt Non plastic, Moist, Reddish Brown	ML	
5		100%			1.3 ppm						
6											
6.0	DP015-7								Silt: Mod Plastic, Moist, Reddish Brown	MH	
7											
8					16.4				SAND poorly graded; 30% Gravel 1/8-1/4, Wet Loose, Reddish Brown	SP-SM	
9	DP015-9				23 ppm				SAND: Poorly graded w/ Sand, Reddish Brown	SM-ML	
9.0					5PPM						
10										GW-ML	
11									# Refusal @ 10.2'		
									Bottom/Shoe: gravelly wet sand Loose no odor.		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Boring ID: DP-016	
Project Location: Lockport, NY		Page No. 1	
Project No.: 3612122274	Client: NYSDEC	of: 1	
Boring Location: DP-016	Refusal Depth: 11.1'	Total Depth: 11.1'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Env.	P.I.D (eV): 3500 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											
0–4									No Recovery, gravel rock plugged end/shoe of sampler!		
4		100%							SAND: poorly graded, 20% gravel, Brown	SP	
4.6					0.0 ppm				Silt: Med-plastic, Moist, Reddish brown	MH	
7.0					0.0 ppm				SAND: Poorly graded, fine sand, trace silt, wet.	SM-ML	
8		100%			3437 ppm				SAND: Poorly graded, 40% gravel 1/8 - 1/4, Dark Brown	SP	Sheen on core 8-10'
9					234 ppm				Silt: Med plastic, wet Reddish Brown	MH	
10					268 ppm				Silt: Nonplastic, moist, Reddish Brown	ML	
11.1									* Refusal @ 11.1'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-017
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122224	Client: NYSDEC		of: 1
Boring Location: DP-017	Refusal Depth: 10.2'	Total Depth: 10.2'	Bore Hole ID/OD: 2 1/4
Weather: Ptly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 0.0 – 10 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unkn	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
	Sample Information				Monitoring						
0.0									Loam: grass thatch		
0.5		100%			0.0 ppm				Silt! Moist, Redish Brown	ML	
4					0.0				Silt: Moist, Redish Brown; 10% gravel 20% 1/8–1/4	ML	
4.7	[illegible]	[illegible]			0.5				Silt: Med Plastic, wet, Redish brown	MH	
6.5'					0.0				SAND! Poorly graded vf SAND, trace gravel Redish brown, moist.	SM-ML	
8					1.0 ppm				SAND: Poorly graded, coarse sand, wet, Brown	SP	
8.7	DP-017[illegible]	100%							Silt: Moist firm, non plastic	ML	
9.4					9.3 ppm				SAND: Poorly graded, fine sand, trace silt, firm Redish brown	SP	
10.2									*Refusal @ 10.2'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

DP-05

≈ 624.8

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-018
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-018	Refusal Depth: 10.2'	Total Depth: 10.2'	Bore Hole ID/OD: 2 1/4
Weather: Ptly Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envit.	P.I.D (eV): 0-34.5 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/24/13	Date Completed: 10/24/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unkn	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									gravel / fill		
1											
2		1.90'			14 ppm				Silt: Moist Reddish brown, Nonplastic.	ML	
3					8 ppm						
4											
5					30 ppm				Silt: Mod-Plastic, Moist, Reddish brown	MH	
6	DP-018	1.00									
7	6.5				75 ppm				Silt Mod-Plastic, Wet, trace Gravel 5% Reddish brown	MH	
8										MH	
9	8.3				65 ppm				SAND: 20-30% Gravel 1/8-1/4, Loose Wet Greyish Brown	SP	
10	9.0	1.00'			34.5 ppm				SAND: 20-30% Gravel 1/8-1/4", Loose, Wet Dark Brown	SP	
11	10.2'								* Refusal @ 10.2'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

76214A

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Boring ID: DP-019
Project Location: Lockport, NY		Page No. 1
Project No.: 3612122244	Client: NYSDEC	of: 1
Boring Location: DP-019	Refusal Depth: 11.2'	Total Depth: 11.2'	Bore Hole ID/OD: 2 1/4
Weather: Ptly Cloudy	Soil Drilled: —	Method: DIRECT PUSH	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 2-5 PPM	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/25/13	Date Completed: 10/25/13	Sampler ID/OD: 1 1/4
Rig Type/Model: –	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNKN	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											
0–1									Gravel - fill.		
1–4		50%			8.0ppm				SAND: Poorly graded, fine SAND, Moist, Redish Brown	SP	
4–4.5					2.0ppm				SAND: Poorly graded, Moist, Red Brown	SP	
4.5–8	DP019007	75%			2.3ppm				SAND: Poorly graded, Wet, Trace gravel, Redish brown	SP	
8–10		100%			1.0ppm				SAND: Poorly graded, wet, loose, 20-30% gravel Redish brown	SP	
10–10.5									SAND: firm, 20-30% gravel, Dry, Redish Brown	SP	
10.5–11.2					5.0ppm				SAND: moist, fine, Redish brown	SP	
11.2									* Refusal @ 11.2'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-020
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-020	Refusal Depth: 9.5'	Total Depth: 9.5'	Bore Hole ID/OD: 2 1/4
Weather: Rainy Cloudy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt	P.I.D (eV): 20 - 4560 PPM	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/25/13	Date Completed: 10/25/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: CKY	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0									fill:		
1											
2		75%			20 ppm				Silt: Non Plastic, Moist Reddish Brown	ML	
3											
4					0.5 ppm						
4					361 ppm				Silt: Non-Plastic, Moist, Reddish brown	ML	
5											
6		100%			1430 ppm						
7											
8	DP020007				2600 ppm						
8		Lost			3540 ppm				Silt: Non Plastic, Wet, Brown	ML	
9	9.0				4562 ppm				SAND: Trace gravel & silt, Moist.	SM-ML	
10	9.5								*Refusal @ 9.5'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-021
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-021	Refusal Depth: 10.1'	Total Depth: 10.1'	Bore Hole ID/OD: 2 1/4
Weather: Pt Cldy	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Envt.	P.I.D (eV): 4.8 - 2500 ppm	Protection Level: D	Sampler: 4' Poly Tube
Driller: Nate	Date Started: 10/25/13	Date Completed: 10/25/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C.Lyons	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0					4.8 ppm				Loam		
1									Silt: Non-Plastic, moist, Brown	ML	
2		100%									
3					21.9 ppm						
4									Silt Same as above	ML	
5					24 ppm						
5.7									Silt Plast. Plastic, moist, Brown	MH	
6											
6.2					18 ppm				Silt, Non-Plastic, 5% gravel, 10% sand, grayish Brown	ML	Odor
7		100%									
8					140 ppm						
					14.6 ppm				SAND: Poorly graded, 20% gravel, wet Reddish brown	SP	
9		100%									
10					2500 ppm		2500 ppm		SAND: Poorly graded, vf sand trace silt/gravel wet DMK Reddish Brown	SP-SM	SM-ML
10.1											
11									Refusal @ 10.1'		

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

DP-022

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peters Dry Cleaning		Boring ID: DP-GW-22	CRJ 3/20/14
Project Location: Lockport, NY		Page No. 1	
Project No.: 3612122244	Client: NYSDEC	of: 1	
Boring Location: GW-22	Refusal Depth: 11.2'	Total Depth: 11.2'	Bore Hole ID/OD: 2'4
Weather: Partly Cloudy Cold	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Northern Engineering	P.I.D (eV): 0.3 - 0.8 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: CLynn	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											
1			—	—		NA	NA	NA	LOAM: Thatch, Grass. DRK BROWN, DAMP.		
1.4											
2		100%			0.8				Silt NONPLASTIC, dense, DRY-DAMP. REDISH BROWN.	ML	
3			—	—							
4											
5			—	—					Silt NONPLASTIC, dense, DRY-DAMP Redish Brown.	ML	
6		100%	—	—	0.3				FINE SAND - poorly graded, 10% gravel, firm, DRY-DAMP. Redish Brown	SP-SM	
7			/						FINE SAND Poorly graded, 10% gravel, firm, MOIST, Redish brown	SP-SM	
8									SILTY SAND slightly plastic, moist, Redish BROWN	SM-MH	
9		100%							Silt Plastic, dense, wet, Redish brown	MH	
10	7.5		—	—	0.3				FINE SAND - Poorly graded, NO GRAVEL FIRM, MOIST Redish brown	SP-SM	
11	10.5										SM-MH
12									Refusal @ 11.2' SILTY SAND PLASTIC, dense, moist, Redish-Brown		

NOTES: Boring I D changed from GW-22 to DP-22. Log book changed accordingly.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

DP-023

CES 3/28/14

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP ~~GW~~-23
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122414	Client: NYSDEC		of: 1
Boring Location: GW-23	Refusal Depth: 13.8'	Total Depth: 13.8'	Bore Hole ID/OD: 2 1/4
Weather: Pt ly Cloudy	Soil Drilled: 13.8'	Method: Direct Push	Casing Size: NA
Subcontractor: Neptune's Way ENVT	P.I.D (eV): 0.0 PPM	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: CLyons	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: NA

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											
1		4'/3.1	NA	NA	0.0		NA	NA	0.7 1.2' LOAM BLACK, DAMP, GRASS/Thatch 1.2 1.9 gravel -	GP	
2									1.9 4' Silt: MOD-Plastic, DAMP, Redish BROWN Few GRAY Mottles	MH	
3											
4									gravel trace silt, wet, gray	GC-ML	
5		100%			0.0				fine SAND poorly graded, DRY, firm, Redish-BROWN	SM-ML	
6											
7									Silt MOD Plastic, firm, fine SAND 25%, wet, (TRACE SAND) Redish BROWN	MH	
8		100%			0.3				~~Silty SAND~~ SANDY silt DRY, firm, Redish BROWN	ML	
9											
10		100%			0.0				Silt MOD-Plastic, firm, fine SAND 20%, Moist, Redish BROWN	MH	
11											
12		100%			0.0				Silt - Nonplastic, firm, DRY, Redish Brown	ML	
13											
13.8'	13.8'								Refusal @ 13.8'		

NOTES: Boring ID changed from GW-22 to DP-22. Log book changed accordingly.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaners			Boring ID: DP-24
Project Location: LOCKPORT, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 2
Boring Location: DP-24	Refusal Depth: ~~18'~~ NA	Total Depth: 18'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: 18'	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Const	P.I.D (eV): 0.0 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model: /01	Logged By: CLY	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: UNK	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0			NA	NA					LOAM		
1									GRAVEL		
1.3'									Silt - Mod-Plastic, FIRM, DRY, Reddish Brown	MH	
2		100%			0.0						
3											
4					0.0				Silt: NON-Plastic, firm, DRY, Reddish Brown	ML	
5		100%									
6					0.0				Silt Mod-Plastic, Moist, Redish brown	MH	
6.1											
7											
8									Silt Mod-Plastic, Wet, Redish brown	MH	
9		100%									
10											
10.4									Silt - NON-Plastic, firm, Moist, Redish Brown	ML	
11											
11.9'									Silty SAND - Poorly graded, Moist, Redish-brown	SM-ML	"FIRM"
12		100%			0.0				Silty SAND - Poorly graded, Wet, Loose, Redish-Brown, 10% gravel.	SW-SM	
13											
13.9'									Silty SAND Poorly graded, Moist, firm, Redish Brown	SM-ML	
14		100%			0.0				Silty SAND Poorly graded, Wet, Loose, 10-25% gravel, Redish brown	SM-ML	
15											

NOTES:
Set 1" Microwell @ this location; Btm of well 18'; 10' SCREEN; Set well in clean sand w/ 6" - 12" bentonite seal @ top.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning		Boring ID: DP-24
Project Location: Lockport, NY.		Page No. 2
Project No.: 3612122244	Client: NYSDEC	of: 2
Boring Location: DP-24	Refusal Depth: NA	Total Depth: 18'	Bore Hole ID/OD: 2 1/4
Weather: Partly cloudy	Soil Drilled: 18'	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way ENVT	P.I.D (eV): 0.0 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model: DP	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: unk	Water Level: DRY	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0		4							SEE previous Page!		
15.5									Silt: trace fine sand, firm, non-plastic, moist, Reddish-Brown.	ML	
16									SAND - Wet, loose, Reddish-Brown	SP	
16.8									GRAVEL - Wet, loose, Reddish Brown,	GM-ML	
17									Silty SAND - Wet, loose non-plastic, Reddish Brown	SM-ML	
17.2											
18											

Note! Dried Boring @ 18' DID not Get Refusal!

DL

NOTES:

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: DP-25
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-25	Refusal Depth: 16'	Total Depth: 16'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy	Soil Drilled: 16'	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way ENVT.	P.I.D (eV): 0.0ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/22/13	Date Completed: 10/22/13	Sampler ID/OD: 1 1/4
Rig Type/Model:	Logged By: CLymer	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation:	Water Level: —	Time: —	Hammer Type: —

Sample Information					Monitoring						
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
0.0											
1		100%	NA	NA	0.0	NA	NA	NA	Loam	1	
1.6'									Silt - Non-Plastic, firm, moist, Redish-Brown.	ML	
2											
3											
4									Silt Nonplastic, firm, moist, Redish-Brown	ML	
5		100%			0.0						
6											
6.3									Silty Gravel - Nonplastic, firm, DRY Redish Brown	GM-ML	
7											
7.8'									Gravel, silty	GM-ML	
8									Gravelly, silty Nonplastic, firm, moist	GM-ML	
8.2		100%			0.0				Gravel trace sand, wet, loose, Redish-Brown.	GW-GM	
9											
9.5									Silt - Plastic, moist, firm, Redish Brown	MH	
10		100%			0.0				Sand - Poorly graded, Redish Brown	SP	
11									Gravel - Poorly graded, trace sand, loose, wet (Redish brown	GP-GM	
12										GP-GM	
12.5		100%							Sand Poorly graded, moist, firm, grayish Brown. (Trace gravel) ± 10%	SP	
13											
14									Sand Poorly graded, ~~silt~~, firm, Redish Brown, (Trace gravel) ± 20-15%	SP	
15		100%			0.0				Sand Poorly graded, moist, firm, Redish Brown (Trace gravel ± 10%)	SP	
15.6'											
16									Silt Nonplastic, firm, moist, Redish Brown	ML	

NOTES:
Set 1" Microwell @ this Boring location; Btm of Well 15' (due to caving). 10' SCREEN. Set Well w/ clean sand #1 w/ 6"-12" Bentonite seal @ top.

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

DP-026 CR 3/28/14

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Peter's Dry Cleaning			Boring ID: ~~DP-022~~ ≈625'
Project Location: Lockport, NY			Page No. 1
Project No.: 3612122244	Client: NYSDEC		of: 1
Boring Location: DP-022	Refusal Depth: 10.5'	Total Depth: 10.5'	Bore Hole ID/OD: 2 1/4
Weather: Partly Cloudy Cold	Soil Drilled: —	Method: Direct Push	Casing Size: NA
Subcontractor: Nature's Way Enviro	P.I.D (eV): 0.8 - 138 ppm	Protection Level: D	Sampler: 4' Poly tube
Driller: Nate	Date Started: 10/25/13	Date Completed: 10/25/13	Sampler ID/OD: 1 1/4
Rig Type/Model: —	Logged By: C. Lyman	Checked By: DSL 2/27/14	Hammer Wt/Fall: NA
Reference Elevation: Unknown	Water Level: —	Time: —	Hammer Type: NA

Sample Information					Monitoring						
Depth (feet bgs) 0.0	Sample Number	Penetration/ Recovery (feet)	SPT Blows/6"	N Value	PID Field Scan	PID Headspace	Lab Tests Performed	Lab Sample ID	Sample Description and Classification	USCS Group Symbol	Remarks
1									Loam: ground dark brown		
									Silt: moist, lt brown	ML	
2	1.8'	76%							Silt): Moist, trace vf. sand, red brown		
3										ML	
4											
5		100%			1.1 ppm				Silt: Mod-plastic, wet, Redish Brown, Trace gravel	MH	
6											
7					0.8 ppm						
	7.2'								SAND: Poorly graded, wet, loose, 10-20% gravel 1/8-1/4. Redish brn	SP	
8									SAND — As Above	SP	
9	8.6				138 ppm				Silt: Non Plastic, trace, wet, Redish brown	ML	
	9.5	10%			240 ppm				SAND: Poorly graded, wet loose, 10-20% gravel grayish brown	SP	
10									* Refusal @ 10.05'		

NOTES: Boring ID changed to DP-026 from DP-022. Log book & sample IDs changed accordingly

FIGURE 4.4
SOIL BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

APPENDIX E

CONTAINED-IN DETERMINATION LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, 12th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9625 • **Fax:** (518) 402-9627
Website: www.dec.ny.gov

MAR 27 2014

Joe Martens
Commissioner

Mr. Charles Staples, C.G. (charles.staples@amec.com)
Senior Scientist
AMEC Environment and Infrastructure
511 Congress Street, Suite 200
Portland, ME 04101

Re: "Contained-In" Determination Request
Peter's Dry Cleaning Site 932128

Dear Mr. Staples:

We have completed our review of the soil sampling data from the borings locations (soil samples labeled DP-02, DP-03, DP-04, DP-06, DP-08, DP-09, DP-12, DP-15, DP-16, DP-18, DP-19, DP-20, GP-02, GP-05, GP-06, GP-08, GP-09, GP-13, GP-14, GP-15, SP-04 and TP-008) submitted with your March 26, 2014 request for a "contained in" determination for the referenced project.

Concentrations detected for individual VOCs were all significantly less than their current "contained in" soil action levels and Land Disposal Restriction concentrations. Most of the individual VOCs were not detected above the detection limit. No hazardous constituents exhibited a hazardous waste characteristic by exceeding their TCLP regulatory level.

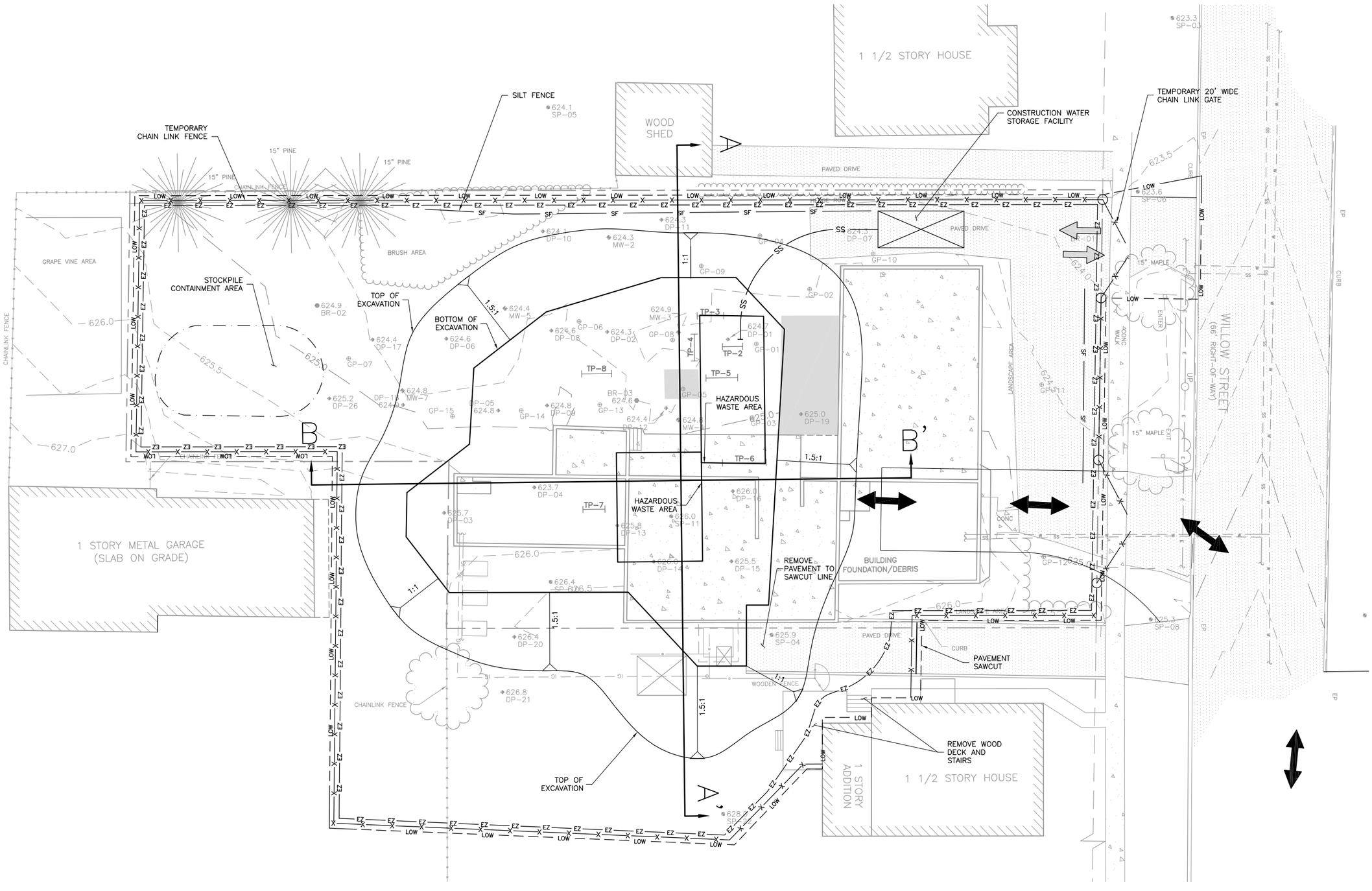
Concentrations for tetrachloroethene and trichloroethene were below the soil "contained in" action level and the Land Disposal Restriction concentration. Therefore, soil to be excavated within the above boring locations excluding the two hazardous waste areas (see attach Drawing C-103), approximately 2240 tons, do not have to be managed as hazardous waste and can be transported to Modern Disposal Services permitted landfill, Model City, NY.

Should you have any questions regarding the content of this letter, please do not hesitate to contact me at (518) 402-9622 or email me at hjwilkie@gw.dec.state.ny.us.

Sincerely,

Henry Wilkie
Environmental Engineer 1
Remedial Section B

ecc: M. Hinton, DER Region 9



NOTES:

1. FOUNDATION OF ONE STORY ADDITION AT 320 WILLOW STREET IS UNKNOWN. TOP OF EXCAVATION LIMIT SHOWN IS ALLOWBLE FOR FOUNDATION/FROST WALL DEPTH OF 5 FEET OR GREATER BELOW GROUND SURFACE.
2. RELOCATE EXISTING 4'X3' FIBERGLASS SHED AND 8'X10' METAL SHED.

N

0 5 10 20
SCALE IN FEET

NO.	DATE	DSGN	DR	CHK	APVD
C	03/25/14	JPM	JPC	MJS	JPC
B	03/06/14	JPM	JPC		
A	02/28/14	JPM	JPC		

REVISION

DRAFT FOR CONTAINED-IN LETTER
DRAFT FOR NYSDEC REVIEW
DRAFT FOR NYSDEC REVIEW

BY

New York State Department of Environmental Conservation

INTERIM REMDIAL MEASURE
PETERS DRY CLEANING
316 WILLOW ST, LOCKPORT, NEW YORK
NYSDEC SITE NO. - 932128

MACTEC Engineering and Consulting, P.C.
P.O. Box 7050, 11 Commons Street
Portland, Maine 04112-7050
(207) 775-5401

MACTEC

CIVIL
EXCAVATION PLAN

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE
PROJ 3612-12-2244
DWG C-103
SHEET 5 OF 9

FILE NAME: P:\Projects\CADD-PORT\Projects\nysdec1\Peters Dry Cleaning\IRM-C-103.dwg PLOT DATE: Tue, 25 Mar 2014 PLOT TIME: 5:51 PM

APPENDIX F

PRICE SHEET

Price Sheet

INTERIM REMEDIAL MEASURE – SOIL REMOVAL

New York State Department of Environmental Conservation
Peters Dry Cleaning – NYS Site Number 932128
Lockport, Niagara County, New York

Payment Item Number	***Task Description***	***Unit***	***Section 01025***	***Price***	
				Words	***Figures ($)***
1	Mobilization/Demobilization	T&M	1.08.B		
2	Demolition	T&M	1.08.C		
3	C&D Transportation and Disposal (est quantity 250 tons)	T&M	1.08.D		
4	Removal, Transportation, and Disposal of UST Contents (est 2,220 gallons)	T&M	1.08.E		
5	Soil Excavation & Documentation Sample Collection	T&M	1.08.F		
6	Construction Water Management	T&M	1.08.G		
7	Hazardous Waste Transportation and Disposal (est 411 tons)	T&M	1.08 H		
8	Non-Hazardous Waste Transportation and Disposal (est 2,160 tons)	T&M	1.08.I		
9	Final Restoration	T&M	1.08.J		

Note: CONTRACTOR is required to provide a price breakdown for each time and material (T&M) payment item as described in Specification Section 01025, Measurement for Payment.

Grand Total Price: $ _____
(Price in figures)

Authorized Signature: _____

Name: _____ Title:_____