FINAL ENGINEERING REPORT

FORMER BROWN MANUFACTURING SITE
CITY OF SYRACUSE,
ONONDAGA COUNTY, NEW YORK

NYSDEC Site Number: B00024

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 7
615 Erie Boulevard West
Syracuse, NY 13204

and

City of Syracuse
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Syracuse, NY 13202

Prepared by:

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301 Plainfield Road, Suite 350
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MAY 2018

CERTIFICATIONS

I, Thomas Drachenberg, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Thomas Drachenberg, of Parsons, am certifying as Owner's Designated Site Representative for the site.

086020	05-04-18	Thomas Drachenberg
NYS Professional Engineer #	Date	Signature

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List of Acronyms

Acronym	Definition
1996 CWCA	Clean Water/Clean Air Bond Act of 1996
ACM	asbestos-containing material
ALS	ALS Environmental
AOC	area of concern
ATS	Action Technical Services, Inc.
AWMSI	American Waste Management Services, Inc.
Aztech	Aztech Technologies, Inc.
BDA	Beardsley Design Associates, P.C.
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
City	City of Syracuse
Cranesville	Cranesville Block Co., Inc.
DER-10	DER-10: Technical Guidance for Site Investigation and Remediation, May 2010
DOH	Department of Heath
DUSR	Data Usability Summary Report
EC	engineering control
EE	environmental easement
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
ERP	Environmental Restoration Program
ESC	Erosion and Sediment Control
f/cc	asbestos fibers per cubic centimeter
FAP	Field Activities Plan
FER	Final Engineering Report
Goulet	Goulet Trucking, Inc.
HASP	Health and Safety Plan
IC	institutional control
IOTC	Industrial Oil Tank Services Corporation
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Labor

Acronym	Definition
NYWII	New York Works Round II
O&M	Operation & Maintenance
OBG	O'Brien & Gere Engineers, Inc.
OCDWEP	Onondaga County Department of Water Environment Protection
OSHA	Occupation Safety and Health Administration
Parsons	Parsons Engineering of New York, Inc.
PBS	petroleum bulk storage
PCBs	polychlorinated biphenyls
PDI	pre-design investigation
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RA	remedial action
RAO	remedial action objectives
RAWP	Remedial Action Work Plan
RD	remedial design
RI	remedial investigation
Riccelli	Riccelli Enterprises, Inc.
ROD	Record of Decision
SAC	State Assistance Contract
SCO	soil cleanup objective
site	Former Brown Manufacturing Site
SMP	Site Management Plan
TAL	TestAmerica Laboratories, Inc.
TCLP	Toxicity Characteristic Leaching Procedure
µg/m^3	micrograms per cubic meter
UST	underground storage tank
Vitale	Vitale & Robinson, Companies
VOCs	volatile organic compounds

Final Engineering Report
Former Brown Manufacturing Site
City of Syracuse,
Onondaga County, New York
NYSDEC Site Number: B00024

1.0 BACKGROUND AND SITE DESCRIPTION

1.1 BACKGROUND

The City of Syracuse (the City) entered into a State Assistance Contract (SAC) # C300654 (Site # B00024) with the New York State Department of Environmental Conservation (NYSDEC) to investigate a 0.8-acre property known as the Former Brown Manufacturing Site (site) located at 101 Chester Street in the City of Syracuse, Onondaga County under the Environmental Restoration Program (ERP). The SAC was executed on March 9, 1998 and last amended on December 22, 2010. The site was investigated pursuant to the SAC and a remedy was selected by the Record of Decision (ROD), which was issued by the NYSDEC on March 29, 2012.

Subsequently, the City and NYSDEC entered into an agreement, which was executed on March 26, 2015, which provided for the remediation of the site under the ERP using funding provided by the New York Works Round II (NYWII) statewide capital infrastructure program. Pursuant to the agreement (NYWII ERP Agreement) the NYSDEC performed the remediation, through its engineering consultant and contractors, on behalf of the City. The City was responsible for paying 10% of the on-site costs incurred for the remediation. The site was remediated to restricted residential use, as defined by Title 6 of the New York Code of Rules and Regulations (6 NYCRR) 375-1.8(g)(2)(ii).

1.2 SITE DESCRIPTION

The Former Brown Manufacturing site is owned by the City of Syracuse and is located at 101 Chester Street in a predominantly residential portion of the City of Syracuse, Onondaga County. It is identified as parcel 86-07-31 on the City of Syracuse tax map, and is an approximately 0.8-acre parcel located at the southeast corner of the intersection of Chester Street and Bellevue Avenue. It is vacant and is a generally flat parcel of land. Figure 1 shows the site location and subsequent figures show the site boundary. The boundaries of the site are more fully described in Appendix A: Metes-and-Bounds Description and Survey.

The site is bordered to the north by Bellevue Avenue with vacant residential properties and a community garden beyond; to the south by a vacant residential property on Chester Street and other residential properties beyond; to the east by residential properties along Huron Street; and to the west by Chester Street with residential properties and a supermarket beyond. Most of the surrounding area consists of residential parcels, several of which are vacant.

Onondaga Creek is located approximately 450 feet south of the site and approximately 550 feet east of the site. Onondaga Creek flows generally south to north. The site lies within the 100-year floodplain for Onondaga Creek, based on the Flood Insurance Rate Map for Onondaga County, New York, Panel 216 of 520, Map Number 36067C0216F, issued by the Federal Emergency Management Agency, effective date November 4, 2016.

1.3 SITE HISTORY

The site was formerly the location of the Brown Manufacturing Corporation, an automobile parts manufacturing facility, which operated from at least 1926 until approximately 1972 or 1973. In 1981, after reportedly being inactive for a number of years, the buildings on-site burned in a fire. Prior uses that appear to have led to site contamination include disposal of waste oil/sludge into a disposal pit and underground quenching trough. Following the fire, a remediation contractor reportedly removed and disposed of approximately 100 drums of waste oil contaminated by polychlorinated biphenyls (PCBs), the contents of the disposal pit and quenching trough, and a ruptured electrical transformer. Other sources of contamination include two underground storage tanks (UST) which were identified during the course of the remedial action, both of which contained petroleum which was consistent with fuel oil or diesel.

1.4 GEOLOGIC CONDITIONS

The unconsolidated deposits at the site include: a fill layer; a silty, sandy layer; a sand and gravel layer; and then silty, sandy layers. The top unit consists of fill ranging from one to up to 15 feet thick which is comprised of sand, crushed stone, concrete debris, brick, ash, cinders, wood and other debris. The fill was underlain by native glacioulacustrine deposits consisting of silt, sand and clay to depths ranging from approximately 8 feet to approximately 13 feet below grade. The glacioulacustrine unit was underlain by a sand and gravel layer which was present at a depth of approximately 8 feet below grade on the western portion of the site and approximately 13 feet below grade in the eastern portion of the site. Below the sand and gravel unit is another silty, sandy unit. The geology of the region generally consists of glacioulacustrine deposits, underlain by glacial till, with alluvial deposits present in areas around Onondaga Creek. Borings were installed to a maximum depth of 24 feet below grade.

Groundwater at the site was generally encountered in or just above the sand and gravel unit. Along the western side of the site, it was present at approximately 8 to 9 feet below grade. In the eastern side of the site groundwater was present at about 11 to 13 feet below grade. Groundwater flows generally to the south-southeast, towards Onondaga Creek. Typical groundwater flow is depicted on Figure 2.

1.5 SUMMARY OF PRE-REMEDIATION CONDITIONS

Prior to remediation, the site was vacant and was a generally flat parcel of land covered primarily with grass, with small areas of concrete, stone, and asphalt present at the surface. A row of trees

and shrubs and a chain link fence were located along the eastern property boundary and along the eastern end of the northern property boundary. Figure 2 shows the pre-remediation site conditions.

1.5.1 INITIAL INVESTIGATIONS

Following the fire at the site in 1981, several sampling events were conducted that year. Samples were collected from site soils, drum contents (prior to their removal from the site), waste oil from a quenching trough and waste oil disposal pit, and soils from adjacent properties. The sample results indicated PCBs were present at the site. In the remedial investigation report and other site documents, it was stated that a newspaper article reported that a soil sample collected following the cleanup activities from an area where barrels of waste oil had been stored contained PCBs at 93,000 parts per million (ppm).

In 1995, composite surface soil samples were collected by C&H Engineers, Inc. on behalf of the City of Syracuse, which identified PCBs in soil at concentrations up to 3 ppm. Additional information on the site history and results of the initial investigations are included in the *Site Reconnaissance/Historical Review Report*, dated February 1998, prepared by C&H Engineers, Inc.

In August 1997, a soil sample was collected from an area of surface soil staining, and PCBs were detected at 63,000 ppm. A follow-up sample from the same area collected in March 1998 contained 21,000 ppm PCBs. This area was subsequently referred to as the New York State Department of Health (NYSDOH) Hot Spot. This area was reportedly covered with soil subsequent to this sampling. No areas of exposed surface soil staining were readily apparent prior to remediation.

1.5.2 REMEDIAL INVESTIGATION

A Remedial Investigation (RI) was conducted at the site by the City of Syracuse under the ERP. RI field work began in 1998 and was completed in 2009. Most of the RI field work was conducted in 1998 and 2001; additional groundwater sampling was conducted in 2008; and soil vapor sampling was conducted in 2008 and 2009. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The results of the RI are summarized below and discussed in more detail in the ROD and the following: the *Site Investigation Report* prepared by Beardsley Design Associates, P.C. (BDA) and dated January 2003 (RI Report); groundwater sampling results, prepared by BDA and dated October 2008; and soil vapor sampling results prepared by BDA and dated December 2009 & September 2008.

The following activities were conducted during the RI:

- Research of historical information,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,

Contaminants identified during the RI in on-site soils included PCBs, petroleum, polycyclic aromatic hydrocarbons and metals. Petroleum was detected in the subsurface in portions of the site and off-site. PCBs were found primarily in surface and near-surface soil in the western portion of the site,

with lower concentrations found in deeper soil samples. Samples collected during the RI from the vicinity of the NYSDOH Hot Spot contained PCBs at concentrations up to 72 ppm (RI sample location HB-9). Dissolved phase groundwater contamination was not identified by the remedial investigation. Additional details of the RI are provided in the RI report. Based on the results of the RI, a remedy was selected for the site which was documented in the Record of Decision (ROD) dated March 2012.

1.5.3 PRE-DESIGN INVESTIGATION

Following issuance of the ROD and execution of the NYWII ERP Agreement, a Pre-Design Investigation (PDI) was conducted in 2015 to better define the areas exceeding site cleanup objectives. The PDI was conducted in August and October 2015 by the NYSDEC through its engineering consultant for the site, Parsons Engineering of New York, Inc. (Parsons) and included surface and sub-surface soil sampling. Details of the PDI are included in the *Remedial Action Work Plan* (RAWP) prepared by Parsons and dated June 2016.

1.5.3.1 PCB Delineation

Further sampling was conducted during the PDI to delineate the area impacted by PCBs at concentrations greater than 50 ppm and 10 ppm. PCBs were not detected in any of the PDI samples at concentrations greater than 10 ppm. So, the area impacted by PCBs at concentrations greater than 50 ppm was limited to one RI surface soil sample location and, to the extent it may have still been present, the stained area referred to as the NYSDOH Hot Spot. The area surrounding the RI surface soil sample was referred to as Area of Concern (AOC) 1A-1. The area impacted by PCBs at concentrations greater than 10 ppm but less than 50 ppm was limited to the area immediately surrounding another RI surface soil sample location. This area was referred to as AOC 1A-2.

1.5.3.2 Petroleum Delineation

Gross petroleum contamination was identified in certain areas of the site during the RI, including the west-central portion of the site and the eastern side of the site. The PDI included the installation of several additional borings to delineate the areas that contained gross petroleum contamination. Based on evidence of petroleum identified in borings along the eastern site boundary, additional borings were conducted off site. Petroleum contamination was noted to be widespread across the site and extending off-site to the east. The off-site impacts were present at depths generally greater than 15 feet below the ground surface.

1.5.3.3 Ash

Ash was detected in several locations across the site, and in certain off-site locations. In certain locations, the ash was present as a distinct and relatively thick layer (greater than 6 inches), which seemed to indicate an event where the ash was deposited in a relatively substantial amount.

Notably, the ash was found to be present at 106-08 Huron Street and 110 Huron Street, but not other off-site borings. The property at 110 Huron Street, or a portion thereof, was formerly utilized by the on-site manufacturing facility. Based on that, and the fact that there was a fire at the facility, the ash was believed to have originated from the site.

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) were identified for this site in the ROD.

Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

During the PDI, petroleum sheen was noted on the groundwater, including in off-site soil borings. Therefore, additional RAOs were to limit further off-site migration of site contaminants and remove the source of off-site groundwater contamination to the extent practicable. It is noted that the area is serviced by a municipal water supply which is not affected by the site contamination. Based on soil vapor sampling, the remedy selected by the ROD did not require further evaluation of the potential for soil vapor intrusion.

2.2 DESCRIPTION OF SELECTED REMEDY

The site was remediated in accordance with the remedy selected by the NYSDEC in the ROD dated March 29, 2012. Certain modifications to the remedy were documented in the RAWP. Further info regarding the modifications is provided in Section 2.2.2.

2.2.1 ROD- SELECTED REMEDY

The factors considered during the selection of the remedy are those listed in 6 NYCRR 375-1.8. The following are the components of the selected remedy as listed in the ROD:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Additional data will be collected from on-site and off-site areas as part of the remedial design program. Green remediation principles and techniques will be implemented to the extent feasible in the

design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. All on-site soils which exceed 10 ppm PCBs will be excavated and transported off-site for disposal. It is anticipated this excavation area will extend to a depth of approximately 2 feet over an area of 6,700 square feet in the western portion of the site. The approximate limits of this area to be excavated are indicated on Figure 3 of the ROD as Area of Concern (AOC) 1A. Approximately 500 cubic yards of soil will be removed for off-site disposal from AOC 1A. Soils grossly impacted by oil in the west portion of the site will be excavated to a depth of approximately 6 feet below grade for off-site disposal. The approximate limits of this area to be excavated is indicated on Figure 3 of the ROD as AOC 1B. Approximately 570 cubic yards of additional soil will be removed for off-site disposal from AOC 1B. If determined necessary based on the remedial design investigation, soil in off-site areas impacted by site-related contamination will be excavated for off-site disposal. PCB-contaminated off-site soil exceeding 1 ppm will be removed. Petroleum-impacted off-site soils will be removed to the extent practicable until the lower of the residential use and protection of groundwater SCOs are achieved. Excavated soil may be used to partially backfill on-site excavations if it is not grossly contaminated and does not contain greater than 10 ppm PCBs. Clean fill will then be brought in to replace the excavated soil and establish the designed grades at the site. Any imported fill material utilized will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

3. Soils impacted by oil in the southeast portion of the site will be excavated to facilitate installation of an oil recovery system. Grossly-contaminated soils from this area will be transported off-site for disposal. The approximate limits of the area to be excavated are indicated on Figure 3 of the ROD as AOC 2. Approximately 75 cubic yards of soil will be removed for off-site disposal. An oil recovery trench/system will be installed in this area to remove oil and prevent off-site migration. Details of the recovery system will be determined during the design phase.

4. A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement or sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Imposition of an institutional control in the form of an environmental easement for the controlled property that:

   - requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
   - allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
   - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) or County DOH;
   - prohibits agriculture or vegetable gardens on the controlled property; and requires compliance with the NYSDEC approved Site Management Plan.

6. A Site Management Plan is required, which includes the following:

   a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

      Institutional Controls: The Environmental Easement discussed in Paragraph 5 above.

      Engineering Controls: The soil cover discussed in Paragraph 4 and the oil recovery system discussed in Paragraph 3 above.

      This plan includes, but many not be limited to:

      - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
      - descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
      - provisions for the management and inspection of the identified engineering controls;
      - maintaining site access controls and NYSDEC notification; and

- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the NYSDEC

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy.

The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and NYSDEC notification; and
- providing the NYSDEC access to the site and O&M records.

2.2.2 MODIFICATIONS TO THE REMEDY

Several modifications were made to the remedy based on the results of the PDI, City of Syracuse floodplain laws and regulations, and conditions encountered during construction.

- Based on the results of the PDI, it was decided to excavate the off-site ash area. Ash was detected in several locations across the site, and in certain off-site locations. In certain locations, the ash was present as a distinct and relatively thick layer (greater than 6 inches), which seemed to indicate an event where the ash was deposited in a substantial quantity. Notably, the ash was found to be present at 106-08 Huron Street and 110 Huron Street, but not other off-site borings. The property at 110 Huron Street, or a portion thereof, was formerly utilized by the on-site manufacturing facility. Based on that information, and the fact that there was a fire at the facility, the ash was believed to have originated from the site.
- Based on the results of the PDI, the volume of the various AOCs were updated.
- Based on the results of the PDI, the extent of petroleum contamination off-site was somewhat greater than described in the remedial investigation report; however, the impacts were deeper than was deemed practicable to excavate, especially in light of the fact that exceedances of soil cleanup objectives were minimal. Impacts in many of the off-site borings were deeper than 15 feet. Monitoring wells were installed to evaluate groundwater and determine appropriate actions for the deeper contamination. Based on results of a sample collected during remediation from a temporary well point, the petroleum contamination appears to be degrading. Thus, given that; the sources of contamination have been removed, the mass of contamination on-site was reduced significantly, off-site exceedances were minimal when

compared to soil cleanup objectives, present at depths greater than 10 feet (and in most instances greater than 15 feet below grade), and that the area is served by a municipal water supply, the monitoring of natural attenuation of the contamination was deemed sufficient.

- As noted previously, the site lies in the 100-year floodplain for Onondaga Creek. A City of Syracuse law, enacted in 2016, prohibits any projects within the floodplain from resulting in a net fill. Therefore, during the course of remedial action additional excavation was planned so the volume of excavated soil would equal the minimum volume of imported fill required for the project, which would be the volume necessary to construct the two-foot clean soil cover system, which was approximately 2,600 cubic yards. Due to the fact that additional excavation areas were encountered during remedial action, and in part to slough during the course of the planned excavations, the volume of soil disposed of off-site was greater than 2,600 cubic yards.

3.0 COMMUNITY PARTICIPATION

Community participation activities were conducted by the NYSDEC to keep interested parties and the surrounding community aware of activities at the site and to allow a chance for the community to voice questions or concerns. Activities were conducted in conformance with requirements for community participation set forth in 6 NYCRR Part 375, the NYSDEC's guidance document *DER-23: Citizen Participation Handbook for Remedial Programs*, and the site-specific Citizen Participation Plan developed by the NYSDEC, dated March 2015.

Prior to the start of the PDI, a fact sheet was sent to interested parties announcing that the work was going to begin. This fact sheet was dated August 2015 and was sent August 12, 2015, prior to initiation of the PDI on August 26, 2015. In addition, several property owners received letters seeking permission to enter their property to collect soil and/or groundwater samples if necessary during the PDI.

Another fact sheet was sent on September 12, 2016 to interested parties announcing that remediation was about to begin, with a follow up sent on February 3, 2017, announcing that that a significant portion of the construction activities were complete and that final site restoration work would be completed in Spring 2017.

When this document is approved by the NYSDEC, a Certificate of Completion will be issued for the site, which will be announced in another fact sheet.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the site were conducted between October 2016 and January 2017, and between April and November 2017 by the NYSDEC's engineering consultant and contractors pursuant to the NYWII ERP Agreement between then NYSDEC and the City.

4.1 CONTRACTORS

The work was conducted by NYSDEC's engineering consultant, Parsons, and contractors; Aztech Technologies, Inc. (Aztech), Action Technical Services, Inc. (ATS), Test America Laboratories, Inc. (TAL), OP-TECH Environmental Services, Inc., dba NRC Environmental Services (NRC), and their sub-contractors.

4.1.1 PARSONS ENGINEERING OF NEW YORK, P.C.

Parsons conducted the PDI; developed the RAWP; conducted engineering oversight of the construction; completed the necessary sampling and analyses; prepared the environmental easement; prepared the Site Management Plan (SMP); and prepared this Final Engineering Report (FER). Parsons conducted its work pursuant to:

- The Standby Contract No. D007623 Between the State of New York Department of Environmental Conservation and Parsons Engineering of New York, Inc. For Engineering Services, September 2010 (engineering standby contract);
- Applicable generic plans developed pursuant to the engineering standby contract, including:
    - Generic Health and Safety Plan;
    - Field Activities Plan (FAP);
    - Generic Quality Assurance Project Plan (QAPP); and
- the Work Assignment for the site issued to Parsons (Work Assignment D007623-22), which was last amended December 21, 2016;

Major sub-contractors utilized by Parsons during the course of the remedial design and remedial action include the following:

- Zebra Technical Services, LLC – provided and operated a drill rig for completion of the PDI;
- Fisher Associates, P.E., L.S, L.A. D.P.C. – conducted a site survey;
- ALS Environmental (ALS)– laboratory utilized for analysis of soil samples for the PDI and RA (NYSDOH Environmental Laboratory Approval Program [ELAP] ID # 10145 and 11759);
- HSE Consulting Services, LLC – laboratory utilized for analysis of air samples for the asbestos abatement activities (NYSDOH ELAP ID #11973); and
- O'Brien & Gere Engineers, Inc. (OBG) – utilized to complete a floodplain analysis for the site.

4.1.2 AZTECH TECHNOLOGIES, INC.

Aztech provided a project manager during the course of the remedial action; coordinated most of the sub-contractors needed for the project; and most of the procurement of materials. Aztech conducted its work pursuant to:

- the Standby Remedial Services Contract No. C100904 (standby remedial contract) between the NYSDEC and Aztech Technologies, Inc., executed March 31, 2009, as last amended May 16, 2016, for the period up through October 31, 2016; and
- the Standby Investigation and Remediation Contract No. C100601 between the NYSDEC and Aztech, executed October 20, 2016, for the period beginning November 1, 2016.

Major sub-contractors utilized by Aztech included the following:

- EQ Northeast, Inc. – utilized to transport soil contaminated by PCBs at concentrations greater than 50 ppm and several small capacitors and properly dispose of them off-site at Wayne Disposal, Inc. in Belleville, Michigan;
- American Waste Management Services, Inc. (AWMSI) – utilized to haul non-hazardous contaminated soil from the site and properly dispose of it off-site at Ontario County Sanitary Landfill in Stanley, Ontario County, New York. AWMSI, in turn, utilized a sub-contractor for hauling, Goulet Trucking, Inc. (Goulet).
- Riccelli Enterprises, Inc. (Riccelli) – utilized to haul non-hazardous contaminated soil from the site and properly dispose of it off-site at Seneca Meadows Landfill in Waterloo, Seneca County, New York.
- Vitale & Robinson, Companies (Vitale) – utilized to supply and deliver soil backfill to the site from a permitted facility in West Monroe, Oswego County, New York;
- Riccelli Northern/Syracuse Sand and Gravel – utilized to supply and deliver topsoil to the site from a permitted facility in Panther Lake, Oswego County, New York and a facility located on Devoe Road in Camillus, Onondaga County, New York. They were also utilized to supply and deliver stone backfill from a facility in Madison County, New York; and
- Cranesville Block Co., Inc. (Cranesville) – utilized to supply and deliver stone backfill to the site from a permitted facility in Tully, Onondaga County, New York.

4.1.3 ACTION TECHNICAL SERVICES, INC.

ATS provided labor and equipment to conduct the soil excavations and other necessary work to implement the remediation from October 2016 through January 2017. ATS conducted its work pursuant to:

- The Standby Response Services Contract No. C100501 (standby response contract) between the NYSDEC and Action Technical Services, Inc., executed July 20, 2016.

Major sub-contractors utilized by ATS include:

- Industrial Oil Tank Service Corporation (IOTC) – disposal facility located in Oriskany, Oneida County, New York utilized for disposal of non-hazardous liquid wastes generated at the site, including wastes generated during tank cleaning activities;
- Action Cleaners, A Division of Redbolt Corporation – a company related to ATS utilized to conduct abatement of asbestos-containing materials (ACM) identified at the site and, through a

subcontractor, dispose of the ACM at Seneca Meadows Landfill in Waterloo, Seneca County, New York; and

- Churchill Environmental, Inc. – utilized to develop and submit to New York State Department of Labor a request for a variance from certain requirements of 12 NYCRR Part 56 for the asbestos abatement work.

4.1.4 TESTAMERICA LABORATORIES, INC.

TAL was utilized to conduct analyses of several samples which were unexpected or were otherwise outside of the scope of Parsons' work assignment. TAL provided services pursuant to:

- The Standby Laboratory Services Contract No. C008010 (standby laboratory contract) between the NYSDEC and TestAmerica Laboratories, Inc., executed December 22, 2011 and last amended July 29, 2016.

4.1.5 OP-TECH ENVIRONMENTAL SERVICES, INC. DBA NRC ENVIRONMENTAL SERVICES

NRC provided labor and equipment to complete the site backfilling and restoration, and other necessary work to implement the remediation, from April 2017 through January 2018. NRC conducted its work pursuant to:

- The Standby Response Services Contract No. C100514 between the NYSDEC and OP-TECH Environmental Services, Inc., dba NRC Environmental Services, executed July 20, 2016.

Major sub-contractors utilized by NRC include:

- Parratt-Wolff Inc. – Utilized to install two new monitoring wells (MW-3R and MW-4R).
- Environmental Paving Solutions, LLC – utilized to install the sidewalk along Chester Street as part of restoration activities; and
- Covanta Niagara – disposal facility utilized to dispose of drill cuttings and purged groundwater derived from the monitoring well installation and sampling.

4.2 GOVERNING DOCUMENTS

The remedial action at the site was conducted in accordance with the RAWP for the site developed by Parsons and dated June 2016. The RAWP and other governing documents included provisions to ensure that: (a) the remediation was conducted in a manner that protected human health and the environment; (b) the remediation was conducted in a manner that limited the potential for impacts to the surrounding community and other off-site areas during construction and (c) data collected during the course of remediation was of sufficient quality to meet data quality objectives and NYSDEC guidance.

All deviations from the RAWP are noted in Section 4.11.

4.2.1 HEALTH AND SAFETY PLAN

A Health and Safety Plan (HASP) was developed in compliance with applicable Occupation Safety and Health Administration (OSHA) standards, in particular Title 29 of the Code of Federal Regulations (CFR) 1910.120, Hazardous waste operations and emergency response.

4.2.2 COMMUNITY AIR MONITORING PLAN

Community air monitoring was performed at the perimeter of the site for on-site work and at the perimeter of the work zone for off-site work to ensure dust and volatile organic compounds (VOCs) were not impacting off-site areas at unacceptable levels.

The Community Air Monitoring Plan (CAMP) action levels were set based on 15-minute time-weighted average concentrations of particulate matter and VOCs at the downwind monitoring station as compared to the upwind or background values. Action levels were set which required initially a modification to work practices to reduce emissions, or a shutdown of work activities for higher levels, until the issue was addressed. In addition to quantitative monitoring of particulate matter, dust was also monitored visually. Visible dust leaving the site was considered an exceedance of an action level and would require implementation of control measures (*e.g.*, misting the area), modification to work practices or shutdown of work until the issue was addressed.

The action level for VOCs was for a downwind reading 5 ppm greater than background or upwind readings. The initial action level for dust was a downwind dust reading greater than the upwind reading by 100 micrograms per cubic meter (µg/m^3). The CAMP required dust suppression be implemented if this initial action level was exceeded. With dust suppression techniques implemented, additional actions were required if the downwind dust reading was greater than the upwind reading by 150 µg/m^3. Results of the CAMP are discussed further in section 4.3.4.

4.2.3 EROSION AND SEDIMENT CONTROL PLAN

The RAWP included details to ensure runoff was not occurring from the site. The Erosion and Sediment Controls (ESC) were derived from and based on New York State Guidelines for Urban Erosion and Sediment Control.

4.2.4 SOIL/MATERIALS MANAGEMENT PLAN

The RAWP included details on soil management and segregation, as well as construction sequencing to ensure hazardous and non-hazardous waste streams remained separate from each other and to ensure site soils remained separate from imported soil. It also included requirements to ensure imported earthen materials were free of contamination. The RAWP also included a contingency plan which specified how unexpected waste/contamination was to be managed. The RAWP also included a provision to attempt to locate the area identified as the NYSDOH Hot Spot, and manage it appropriately.

4.2.5 QUALITY ASSURANCE

The RAWP and Parsons' FAP and QAPP describe the specific policies, objectives, organization, functional activities and quality assurance/ quality control (QA/QC) activities designed to achieve the project data quality objectives.

The RAWP, FAP and QAPP combined included the details to manage performance of the remedial action tasks through designed and documented QA/QC methodologies applied in the field and in the lab. The documents provided a detailed description of the observation and testing activities that were used to monitor construction quality and confirm that remedial construction was in conformance with the remediation objectives and specifications.

The primary QA/QC activities employed at the site included:

- near full-time oversight of construction activities by Parsons;
- maintaining logs of daily activities;
- review of contractor submittals;
- tracking wastes through manifests, including for non-hazardous wastes;
- maintaining logs of vehicles transporting waste from the site;
- requiring each truck delivering soil to the site provide a bill-of-lading or similar showing the soil originated from an approved source; and
- maintaining logs of vehicles transporting fill to the site.

4.2.6 CONTRACTOR'S OPERATIONS PLANS

The NYSDEC and/or Parsons reviewed all plans and submittals for this remedial project and confirmed that they were in compliance with the RAWP. Submittals provided by the contractor included a list of potential disposal facilities, a list of potential waste haulers, Solid Waste Disposal Plan, Traffic Control Plan, Water Treatment Plan, and HASP.

4.2.7 ASBESTOS ABATEMENT VARIANCE

A pipe was identified in the south portion of the site which was partially covered in ACM. Upon discovery of the pipe, work was stopped until the material was confirmed to be asbestos-containing; the New York State Department of Labor (NYSDOL) was notified; and a variance was issued by NYSDOL. The variance and 12 NYCRR Part 56 were the governing documents for the abatement work.

Since the affected pipe appeared to extend into an area that required further excavation, the variance included procedures for conducting that excavation and required the excavation be overseen by a certified asbestos project monitor.

The variance required air samples be collected and analyzed for the presence of asbestos fibers. The samples were to be collected from the perimeter of the work zone prior to abatement (background air samples) and following abatement (clearance air samples). The criteria for the clearance air samples was 0.01 asbestos fibers per cubic centimeter (f/cc). Results of the air sampling are discussed further in Section 4.5.3. A copy of the variance is included in Appendix B.

4.3 GENERAL REMEDIAL PROGRAM ELEMENTS

4.3.1 SITE PREPARATION

Prior to conducting work that required approval or a permit from a government agency, the necessary approval was obtained. Pursuant to 6 NYCRR Part 375, the NYSDEC is exempt from the requirement to obtain any State or local permit or other authorization for any activity conducted pursuant to 6 NYCRR Part 375, as long as the substantive technical requirements of the permit are met. The NYWII ERP Agreement between the NYSDEC and the City re-stated this exemption. As such, NYSDEC-issued permits and City-issued permits were generally not required, provided the substantive technical requirements of the permit were met. Approvals and permits required or otherwise obtained for the project included those listed below.

- PCB Remediation – Prior to finalizing the RAWP, the United States Environmental Protection Agency (EPA) stated that, based on the history of the site, PCB contamination at the site was considered to be present as a result of a release or releases that occurred prior to 1978, and thus the EPA did not need to review or approve the RAWP pursuant to the Toxic Substances Control Act. A copy of correspondence between the NYSDEC and EPA is included as Appendix B.1
- Hazardous Waste Generator ID – Due to the fact that a New York State hazardous waste (Waste ID B007 – Other PCB wastes, including contaminated soil, solids, sludges, clothing, rags and dredge material) was to be generated during remediation, an EPA hazardous waste generator identification number was obtained for the site. The site was assigned ID number NYR000223016 by the EPA. A copy of the form from EPA issuing the hazardous waste generator identification number is included as Appendix B.2.
- ESC – Details regarding ESC were included in the RAWP, which was provided to the City for review prior to finalization of the RAWP.
- Wastewater Discharge Permit – An application to discharge treated groundwater to the sewer system was submitted to the Onondaga County Department of Water Environment Protection (OCDWEP). Due to the limited quantity of wastewater generated during remediation, no wastewater was discharged to the sewer. A copy of the information submitted to OCDWEP and the permit issued are included in Appendix B.3.
- Hydrant Use Permit – A permit was obtained during the week of October 17, 2016 from the City of Syracuse Water Department to utilize water from a hydrant for dust suppression and

equipment decontamination. The Water Department provided a hydrant valve and wrench which were returned to the City during the week of January 16, 2017. A backflow preventer was also utilized and was placed between the City's valve and the hose utilized for dust suppression and equipment decontamination. The backflow preventer was provided by Aztech. A copy of the hydrant use permit is included as Appendix B.4.

- Disposal facilities waste acceptance – Prior to hauling waste to a disposal facility, the waste stream was approved by the disposal facility. Information related to obtaining approval from disposal facilities is included in Appendices C through E.
- Floodplain Development – The site lies within the Onondaga Creek floodplain. A floodplain analysis was conducted that showed that even if the site grade were raised two feet (*i.e.*, if no contaminated soil was removed and a two-foot cover constructed across the site), the resultant change in water surface elevation in the vicinity of the site during a 100-year flood would be approximately 1.4 inches. However, a local law enacted in 2016 does not allow for a net fill for any projects within the floodplain. Discussions were held with the City of Syracuse Engineering department prior to and during remedial activities in regard to the grading plan. Remedial activities were conducted so as to ensure the final site grade was no higher than the pre-remediation grade. Documentation related to compliance with floodplain development requirements is included in Appendix B.5, including the final Floodplain Analysis Report, dated October 2016 prepared by OBG.
- Asbestos abetment variance – A small quantity of ACM was identified during the course of remediation. A variance from certain requirements of 12 NYCRR Part 56 was requested and obtained from the NYSDOL. A copy of the variance is included as Appendix B.6.
- Petroleum Bulk Storage (PBS) tank registration and closure – Two previously unknown underground storage tanks were encountered during remedial action. The tanks were registered and closed as required by 6 NYCRR 613. A copy of the PBS Facility Information Report showing both tanks closed is included in Appendix B.7, along with a copy of the City of Syracuse Tank Removal Application

In addition to obtaining necessary approvals, site preparation activities included: holding pre-construction meetings; collecting waste characterization samples; clearing trees; installing a perimeter fence; mobilizing equipment and manpower; and establishing site controls.

A pre-construction meeting was held between the NYSDEC, the City, Parsons and Aztech on August 30, 2016, and a meeting was held between the NYSDEC, Parsons, Aztech and ATS on September 22, 2016 to prepare and discuss site mobilization.

Test pits were installed to collect samples for waste characterization on September 15 and 16, 2016. Minimal clearing was conducted September 28, 2016 in order to allow for installation of a perimeter fence. A utility mark-out was requested prior to installation of the perimeter fence, and the fence was installed around the site and around a portion of an off-site property on October 4, 2016. It is noted that a utility mark-out, as well as an on-site utility survey, had also been

conducted in 2015 as part of the pre-design investigation, and the utility marks were surveyed at that time.

Equipment mobilization began on October 10, 2016 with additional equipment being mobilized throughout the project as needed. Additional clearing of trees and shrubs along the eastern portion of the site was completed by October 12.

A NYSDEC-approved project sign was erected along the northern site boundary during the week of October 10, 2016 and remained in place during major construction activities.

ESC, including the silt fence, site entrance, and site roadway were established during the weeks of October 10 and 17, 2016. CAMP monitoring began the week of October 17, 2016. The hydrant use permit was obtained and equipment for dust suppression were mobilized to the site during the week of October 17, 2016.

4.3.2 SITE SECURITY

A six-foot tall temporary perimeter fence with barbed-wire along the top was installed on October 4, 2016, prior to the start of remediation, and maintained throughout construction to prevent site access by trespassers. The fence was installed by driving the posts approximately 2 to 3 feet deep, and was installed around the site and a portion of the property at 114 Huron Street, which is owned by the City of Syracuse and was utilized as a staging area for equipment, materials, etc.

No trespassing signs were placed along the fence as well. Two gates were included in the fence along Chester Street which were locked at the end of each work day or if no personnel were on-site. A pre-existing perimeter fence was present along much of the eastern site boundary, though portions of that fence were in disrepair. A pre-existing gate was present in the eastern fence in the vicinity of the rear of 110 Huron Street and/or 112 Huron Street. This gate was locked during the course of remediation except as necessary to access the ash excavation area.

4.3.3 HEALTH AND SAFETY

All remedial work performed under this Remedial Action was in full compliance with governmental requirements pertaining to site and worker safety requirements mandated by Federal Occupation Safety and Health Administration. The HASP was complied with for all remedial and invasive work performed at the Site.

Due to the presence of a high pressure and/or high volume natural gas line just north of the site boundary, and to ensure the work was conducted safely, USIC, LLC was on-site on behalf of the utility owner during subsurface work within 20 feet of the line. That work included installation of a portion of the perimeter fence and excavations performed to allow for the installation of the two-foot cover system.

4.3.4 COMMUNITY AIR MONITORING

The CAMP was implemented during all intrusive activities to ensure site activities were not impacting off-site air quality. The CAMP was implemented by Aztech using three mobile monitoring stations which were deployed based on wind direction and the area where work was on-going. The three stations included one upwind station; one station positioned just downwind of the work zone; and one station positioned at the downwind perimeter of the site. Each station was equipped with a MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 electron-volt lamp, a DustTrak II dust monitor and a telemetry system to allow remote monitoring of the data and notification of exceedances. The dust monitors were capable of monitoring particulate matter with diameters ranging from 0.1 micrometers to 10 micrometers and were capable of integrating results over a 15-minute period.

There were no exceedances of CAMP action levels. Municipal water obtained from a nearby hydrant was utilized as necessary to suppress dust. The water was applied through an approximately two-inch hose connected to a fire hydrant through a City-supplied valve, followed by a backflow preventer. Dust control using the hose was typically necessary when ash was encountered, but was generally not necessary at other times. Copies of all field data sheets relating to the CAMP are provided in electronic format in Appendix F.

In addition, air samples were collected and analyzed for the presence of asbestos fibers as part of the requirements of the asbestos abatement work. The samples were collected from the perimeter of the work zone prior to abatement (background air samples) and following abatement (clearance air samples). The criteria for the clearance air samples was 0.01 f/cc. The clearance air samples did not exceed the criteria.

4.3.5 EROSION AND SEDIMENT CONTROLS

The ESC for all remedial construction were performed in general conformance with requirements of the RAWP. Silt fencing, a stabilized construction entrance, and covering stockpiles were the primary controls employed. Silt fence was established around the site perimeter prior to significant excavation activities. The silt fence was effective at controlling erosion. A stabilized construction entrance and site roadway were utilized to limit tracking of soil from the site by trucks. The entrance and site roadway were constructed using clean, imported stone. The site entrance and site roadway were generally effective at preventing tracking onto public roadways. When necessary, the roads were swept to remove any tracked material. Stockpiles of contaminated soil were covered at the end of each work day to limit dust generation and odors.

4.3.6 SOIL/MATERIALS MANAGEMENT

The RAWP included requirements for construction sequencing, soil stockpiling, equipment decontamination and hauling procedures to ensure effective, nuisance free performance in compliance with all applicable Federal, State and local laws and regulations.

The RAWP anticipated five waste streams would be generated at the site including:

- a small volume of PCB-contaminated soil which, based on the RI, contained concentrations of PCBs greater than 50 ppm, identified as AOC 1A-1;
- a small volume of PCB-contaminated soil which, based on the RI, contained greater than 10 ppm PCBs, but less than 50 ppm, identified as AOC 1A-2;
- ash;
- petroleum-contaminated soils, identified as AOC 1B and AOC 2; and
- groundwater.

Based on these anticipated waste streams, waste characterization sampling was conducted in advance of excavation activities, and the data obtained, combined with prior investigation data, showed the only area of hazardous waste was AOC 1A-1, and therefore it was managed separately from other waste streams.

The landfill acceptance criteria for the ash and AOC 1A-2 allowed for those waste streams to be managed together, and allowed for AOC 1B and AOC 2 to be managed together. So, the material generated by the ash excavation and AOC 1A-2 were managed as one stockpile, and soil generated from AOCs 1B and 2 were managed in a separate stockpile.

Groundwater was pumped to a fractionation tank for storage and subsequent disposal.

In addition to the expected waste streams, several other waste streams were generated during remedial action, each of which was sufficiently distinct from the others so as to prevent any inadvertent or inappropriate mixing.

- Several small capacitors were identified during construction. When encountered, these capacitors were immediately placed in a bucket which was secured within a 55-gallon drum. Soil samples were collected from the vicinity of several of these capacitors. None of the soil contained greater than 10 ppm PCBs (maximum was 2.2 ppm). The analytical results for those samples are included in Appendix C and summarized in Table 1.
- Two previously unknown USTs were identified during remediation. Both tanks contained petroleum. The petroleum was sampled prior to removing it from the site in order to determine appropriate disposal.
- A small amount of asbestos-containing material (ACM) (pipe insulation) was encountered on a subsurface pipe along the southern site boundary.
- Scrap steel was generated from the tanks, sections of the pre-existing perimeter fence which were removed, two rectangular open-top metal bins which were encountered and some metal debris (rebar, pipes), though additional metal debris remains on-site.

The way in which the distinct waste streams were kept separate are described below.

AOC 1A-1 and 1A-2 were small areas of surface soil contamination while the other AOCs were areas of sub-surface contamination. The RAWP called for excavating AOC 1A-1 and 1A-2 prior to other activities and collecting endpoint soil samples to confirm PCBs were less than 10 ppm. The RAWP also required attempts be made to identify the NYSDOH Hot Spot after completion of AOC 1A-1, but prior to other activities in that area.

The two surface areas of PCB contamination (AOC 1A-1: PCB greater than 50 ppm and AOC 1A-2: PCB greater than 10 ppm but less than 50 ppm) were excavated first so as to keep AOC 1A-1 separate from all other waste streams, and to ensure AOC 1A-2 remained separate from petroleum-contaminated soil.

AOC 1A-1 was excavated prior to any other activities in that area to ensure no soil that was a hazardous waste became mixed or co-mingled with non-hazardous wastes; thus, limiting the amount of hazardous waste generated and preventing any hazardous waste from being disposed of improperly as non-hazardous waste.

AOC 1A-1 and AOC 1A-2 were sufficiently far apart from each other so as to prevent the possibility of mixing the waste streams. AOC 1A-2 was excavated first and stockpiled on and under plastic.

AOC 1A-2 was excavated prior to AOC 1A-1 because it contained lower levels of contamination, and in order to limit downtime for the equipment. The RAWP required equipment decontamination and wipe sampling following completion of AOC 1A-1, and the equipment could not be utilized until receipt of acceptable wipe sample results.

AOC 1A-1 was then excavated and the soil placed directly into three cubic yard boxes. The excavator bucket was then decontaminated, and personal protective equipment (PPE) generated during decontamination was placed into the cubic yard boxes which were then sealed and labeled. The excavator was not utilized until acceptable wipe sample results were obtained.

No other activities occurred in the immediate vicinity of AOC 1A-1 or AOC 1A-2 until receipt of acceptable documentation sampling results which showed less than 10 ppm PCBs remaining. At that time, and prior to any other significant activities in the vicinity, work was conducted to attempt to identify the stained area referred to as the NYSDOH Hot Spot. The work was conducted by excavating approximately six inches of soil from across the suspect area, and when no staining was encountered, an additional six inches was excavated. Dark gray stained soil which exhibited a petroleum-like odor was identified in the east-central portion of the area at a depth of approximately one foot. The material was initially handled as if it contained greater than 50 ppm PCBs, including performing equipment decontamination and wipe sampling. However, sampling results showed the soil did not contain greater than 10 ppm PCBs (the maximum concentration detected was 2.2 ppm). The results of this sampling are included in Appendix C and summarized in Table 1. Further, the area of staining was determined to be considerably larger than the initial description of the area identified as the NYSDOH Hot Spot. Based on the characteristics of the soil (*i.e.*, stained, odor), the volume of the soil (which was not consistent with the prior description of the NYSDOH Hot Spot), and the sampling results, the soil was subsequently handled as petroleum-contaminated.

Materials generated during the ash excavation were stockpiled along with AOC 1A-2, and the stockpile was kept separate from the petroleum-contaminated soils (AOC 1B and AOC 2). The ash excavation area was located off-site and was relatively shallow. It was separate, and therefore distinct, from AOC 1B and AOC 2.

The ash excavation wastes, AOC 1A-2, and most of AOC 1B and AOC 2 (the petroleum-contaminated soils) were hauled to Ontario County Sanitary Landfill. In order to keep the waste streams distinct at the landfill, the landfill provided an approval identification number for the ash/AOC 1A-2 waste stream which was distinct from the identification number for the petroleum-contaminated soils. The approval ID number was included on the non-hazardous waste manifests and thus the separate waste streams could be managed appropriately by the landfill.

ACM and wastes generated by the abatement process were handled separately from any other materials and placed directly into a dedicated roll-off dumpster.

As noted previously, the site lies within the 100-year floodplain for Onondaga Creek. Due to local law, the amount of fill imported to the site could not exceed the amount of soil removed from the site. As such, the excavations were backfilled using site soil generated from above the areas of excavation or from the top two feet of the site outside of the excavation areas. Once the excavations were complete and a sub-grade established, a topographic survey was conducted to ensure the entire site was at least two feet lower than the pre-remedial grade. Once that was complete, clean soil was imported to construct the soil cover system. The cover system was placed on a demarcation layer (orange fabric). Therefore clean, imported soil remained clearly segregated from other site soil.

4.3.7 QUALITY ASSURANCE

Quality assurance activities were conducted in accordance with the RAWP and other governing documents.

Nearly full-time inspection of construction activities was provided by Parsons. Daily logs were maintained which included a description of the work completed for the day, including a log of all vehicles hauling materials to or from the site. The daily reports are included in Appendix G.

All samples were analyzed by a laboratory certified by the NYSDOH ELAP. NYSDEC Analytical Services Protocol Category B deliverables were provided for excavation endpoint samples and imported fill pre-qualification samples. QA/QC samples were collected for the endpoint samples and for the imported fill samples at a rate of one of each for every 20 regular samples: matrix spike/matrix spike duplicate; duplicate; and, when applicable, an equipment blank and, when applicable, a trip blank for each group of samples shipped to the laboratory that included samples for analysis of VOCs.

4.4 CONTAMINATED MATERIALS REMOVAL & DISPOSAL

Contaminated soils were removed from the site in order to ensure remaining PCBs were less than 10 ppm and to remove source areas of petroleum-contamination. The locations of the various excavation areas, as well as the location of the two UST's encountered, are shown on Figures 4 through 6 which also identify the approximate depth of each soil excavation area, and the interval from which soils were removed for off-site disposal. Excavated soils which were not disposed of off-site were reused on-site to partially backfill the excavations and establish the sub-grade for the site.

4.4.1 WASTE CHARACTERIZATION

4.4.1.1 Pre-Excavation Waste Characterization

Prior to mobilization, sampling was conducted on September 15 and 16, 2016 in the anticipated areas of soil excavation in order to obtain approval for disposal at the intended disposal facility. The samples were collected by Parsons and analyzed by ALS. Characterization of the soils also considered the results of past sampling efforts. Seventeen samples were collected from test pits TP-01 through TP-14. The locations of the test pits are shown on Figure 3. The samples were collected as grabs, spaced based on the frequency specified by the disposal facility, and were analyzed for parameters required by the disposal facility.

4.4.1.2 Additional Petroleum-Contaminated Soil Characterization

Due to the increased volume of petroleum-contaminated soil generated, three additional waste characterization samples were collected on November 22, 2016 from the stockpiled petroleum-contaminated soil in order to obtain approval for the additional volume. The samples were collected by Parsons and analyzed by TAL.

4.4.1.3 Other Characterization Sampling

Upon discovery of each UST, a grab sample was collected of the product by Parsons and analyzed by TAL to obtain approval for disposal.

A small quantity of an unknown solid substance was discovered on October 20, 2016. The material was whitish-orange and was mostly contained within what appeared to be a small, round kettle. The material was sampled by Parsons on October 31, 2016 for analysis by ALS of total PCBs and metals by the toxicity characteristic leaching procedure (TCLP). PCBs were not detected and no metals were present in the leachate at concentrations greater than hazardous waste thresholds. A deteriorated drum was uncovered in late October 2016. The soil in the drum was sampled by Parsons on October 31, 2016 for analysis of PCBs by ALS. PCBs were not detected. A deteriorated tank or boiler was found in the eastern portion of the site on or about November 8, 2016. There was a small quantity of black soil in the bottom. The soil was sampled by Parsons on November 18, 2016 for analysis of PCBs by ALS. PCBs were detected at 0.068 ppm, well below the action level of 10 ppm, as well as the soil cleanup objective of 1 ppm.

Upon discovery of the pipe insulation which was suspected of containing asbestos, a grab sample was analyzed by AmeriSci on behalf of Churchill Environmental, Inc., a sub-contractor to ATS. The sample was confirmed to be asbestos-containing.

A summary of the samples collected to characterize the waste, and associated analytical results are summarized on Table 1, and the laboratory reports are included in electronic format in Appendix C. The waste profiles submitted to the disposal facilities are included in Appendix D. Acceptance letters from disposal facility owners are attached in Appendix E.

4.4.2 TRANSPORT AND DISPOSAL

All contaminated soil was transported by a hauler with a valid waste hauler permit under 6 NYCRR Part 364. A copy of the Part 364 permit for each hauler is included in Appendix H. In addition, all soil hauled from the site which was a hazardous waste was hauled under a manifest as required by 6 NYCRR Part 372.

The following is a listing of the various waste streams removed from the site with the total quantity of material for each waste stream. Table 2 also shows the total quantities of each category of material removed from the site and the disposal locations.

1. PCB-contaminated soil; greater than 50 ppm – Approximately 2 cubic yards of soil were removed from AOC 1A-1 on October 13, 2016, placed in 3 cubic yard boxes, and removed from the site by EQ Northeast, Inc. (NYSDEC Part 364 Permit ID MA-025) on November 1, 2016 for disposal at Wayne Disposal, Inc. (Facility EPA ID number MID048090633).

2. PCB-contaminated soil; greater than 10 ppm but less than 50 ppm – Approximately 4 cubic yards of soil were excavated from AOC 1A-2 on October 13, 2016 and hauled to Ontario County Sanitary Landfill in Stanley, Ontario County, New York (NYSDEC Facility ID number 8324400004) by Goulet (NYSDEC Part 364 Permit ID MA-113) on November 9, 2016 and November 10, 2016 (along with ash waste stream).

3. Ash mixed with soil from the ash excavation area – Approximately 255 tons of ash and soil were removed from the ash excavation area on October 26, 2016 and hauled to Ontario County Sanitary Landfill by Goulet on November 9, 2016 and November 10, 2016. A total of 261.68 tons of waste derived from this excavation and AOC 1A-2 were disposed of off-site at Ontario County Sanitary Landfill.

4. Petroleum-contaminated soil – 5447.22 tons of petroleum-contaminated soil were removed from AOC 2, AOC 1B-1, AOC 1B-2 and from an area surrounding UST 001. The excavations were conducted between October 31, 2016 and December 8, 2016. 3582.88 tons were hauled to Ontario County Sanitary Landfill by Goulet between November 7, 2016 and November 28, 2016, and 1864.34 tons were hauled to Seneca Meadows Landfill in Waterloo, Seneca County, New York (NYSDEC Facility ID number 8453200023) by Riccelli (NYSDEC Part 364 Permit ID number 7A-402), primarily between December 5, 2016 and December 13, 2016, but one

additional load was removed on January 6, 2017, which resulted from the removal and cleaning of UST 002.

5. Petroleum – Approximately 8,180 gallons of petroleum (fuel oil or diesel) were hauled to IOTC in Oriskany, Oneida County, New York, (NYSDEC Facility ID number 6307000077) by ATS (NYSDEC Part 364 Permit ID 7A-267). Approximately 800 gallons of petroleum were removed from UST 001 by ATS on November 8 and November 9, 2016. UST 001 was an approximately 1,500-gallon UST located near the center of the site. Initially, the petroleum from this tank was placed in a fractionation tank pending analysis and disposal approval. It was then hauled to IOTC along with approximately 5,100 gallons of groundwater by ATS on November 17, 2016 and November 29, 2016. A total of 7,380 gallons of petroleum were removed from UST 002 by ATS: 3,000 gallons on December 23, 2016; 2,855 gallons on December 27, 2016; and 1,525 gallons on December 28, 2016. The petroleum from UST 002 was hauled directly to IOTC each day. UST 002 was an approximately 10,000-gallon UST located in the northeastern quadrant of the site.

6. Groundwater – Approximately 5,100 gallons of groundwater were removed by ATS on November 16, 2016 from an excavation area in the central portion of the site and hauled to IOTC by ATS on November 17, 2016 and November 29, 2016 along with petroleum from UST 001. In addition, approximately 1,500 gallons of water were hauled to IOTC by ATS on November 30, 2016 which were generated by cleaning the fractionation tank after it had been emptied.

7. UST cleaning wastes – Twelve 55-gallon drums of wastes generated by ATS during the UST cleaning operations were removed by ATS on January 5, 2017 and disposed of at IOTC. UST 001 and the metal bins were cleaned on November 17 and 29, 2016 and UST 002 was cleaned on January 3, 2017. The wastes included oil, sludge, and sediment.

8. Asbestos-containing materials – 0.11 tons of asbestos-containing waste were generated during the abatement of a buried pipe located along the southern site boundary. Certain sections of the pipe were partially covered with ACM. The abatement work was conducted on December 23, 2016 by Action Cleaners, and the waste was hauled on January 3, 2017 to Seneca Meadows Landfill in Waterloo, Seneca County, New York, by Riccelli.

9. Small capacitors – Several small capacitors were identified on-site, either on the surface or just below the surface, primarily along the eastern edge of the site. Several were labeled as “GE, No PCBs”, and several were labeled as “Sprague, Clorinol”. They were placed in a 5-gallon bucket, which was contained within a 55-gallon drum and subsequently removed from the site on January 31, 2017 and hauled to Wayne Disposal, Inc. by EQ Northeast, Inc.

10. Scrap metal – Approximately 17 tons of scrap metal (primarily steel) were hauled to a recycling facility, Metalico, Inc., in East Syracuse, Onondaga County, New York, by ATS on December 5, 2016, January 6, 2017 and January 11, 2017.

    The material hauled on December 5, 2016 consisted of the following, totaling approximately 7 tons:

    - cleaned remains of UST 001;

- cleaned remains of two metal bins (measuring approximately 4 feet wide by 6 feet long by 3 feet deep found near the center of the site);
- remains of a deteriorated tank/boiler;
- sections of the pre-existing eastern perimeter fence which were removed; and
- several pipes and pieces of rebar which were found in various locations across the site, generally within the top two to three feet below grade.

The material hauled on January 6, 2017 consisted of the following, totaling 8.4 tons:

- cleaned remains of UST 002; and
- several pipes and pieces of rebar which were found in various locations across the site, generally within the top two to three feet below grade.

The material hauled on January 11, 2017 consisted of several pipes and pieces of rebar, totaling approximately 2.6 tons, which were found in the northwest portion of the site within the top two feet below grade.

11. Drill Cuttings and Purged Groundwater – Four 55-gallon drums of soil cuttings were generated during the installation of monitoring wells in October 2017, and two 55-gallon drums of purged groundwater were generated during monitroing well development and groundwater sampling in November 2017. These drums were hauled by NRC to Covanta Niagara in Niagara Falls, Niagara County, New York.

Proof that each load was disposed of at an approved disposal facility was submitted by the contractor. Parsons kept a log of trucks leaving the site and reconciled the log to tickets from the disposal facility. Parsons' truck logs are included in their daily reports which are included in Appendix G. Documentation showing each load was disposed of at the approved facility is included in electronic format in Appendix I.

4.5 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING

A table and figure summarizing all end-point sampling is included in Table 3a and Figure 7, respectively, and all exceedances of SCOs are highlighted.

4.5.1 PCB WIPE SAMPLES

Wipe samples were collected from construction equipment which handled or otherwise came into contact with soil that contained greater than 50 ppm PCBs (AOC 1A-1), or soil which was suspected of containing greater than 50 ppm PCBs (NYSDOH Hot Spot exploration). The excavator bucket was the only part of the equipment which came into contact with these materials. A wipe sample was collected from the bucket after each of these activities were completed and the equipment was appropriately decontaminated in accordance with the requirements of the RAWP. The affected piece of equipment was not utilized until receipt of acceptable wipe sample results. The wipe

samples were analyzed by TAL. PCBs were not detected. Copies of the results of the wipe sampling are included in Appendix J and summarized in Table 3b.

4.5.2 EXCAVATION ENDPOINT SAMPLES

Samples were collected from the limits of each excavation at the frequency specified in the RAWP. The frequency was based on section 5.4(b)5 of the NYSDEC's guidance document *DER-10: Technical Guidance for Site Investigation and Remediation* (DER-10) for all excavations. In addition, for AOC 1A-1 endpoint samples were collected based on consideration of the sampling frequency/scheme described in 40 CFR 761.283 for PCB remediation. Excavations were conducted to the depths specified in the RAWP, unless mobile petroleum product was encountered at the limit of the excavation at an accessible depth. Accessible depths were generally determined to be less than 15 feet below grade. Endpoint samples were collected by Parsons and analyzed by ALS.

Samples collected from the limits of AOC 1A-1 and AOC 1A-2 were collected to confirm remaining PCBs did not exceed 10 ppm. Samples collected at the limits of the excavations of the petroleum-contaminated soil (AOC 1B-1, AOC 1B-2 AOC 2) were collected to confirm that remaining PCBs did not exceed 10 ppm and to document the levels of other contaminants remaining at the site. A sample was collected from the base of UST 002 to document the level of petroleum contamination remaining at that location. Sample parameters for the sample collected below UST 002 were based on the results of the product characterization sampling.

Three grab samples and one composite sample were collected from the limits of AOC 1A-1. The composite sample was homogenized in a plastic bag prior to placing the soil in the sampling jar(s). All other endpoint samples were collected as grab samples. The confirmation samples collected from AOC 1A-1 and AOC 1A-2 were collected by hand directly from the excavation limits. The remaining endpoint samples were collected with the assistance of the excavator. A bucket of soil was removed from the desired sample location and brought to the surface for sampling. QA/QC sampling requirements were followed and included the collection of duplicate samples and matrix spike/matrix spike duplicate samples at a frequency of 1 per 20 normal samples.

All endpoint samples confirmed that remaining PCBs were less than 10 ppm, with the maximum concentration of PCBs detected in endpoint samples being 3.7 ppm. Certain contaminants remain at concentrations greater than applicable soil cleanup objectives (SCOs) at certain sampling locations. Laboratory data for the excavation endpoint soil samples are provided electronically in Appendix K.

Data Usability Summary Reports (DUSRs) were prepared for all data generated in this remedial performance evaluation program. These DUSRs are included in Appendix L.

4.5.3 ASBESTOS AIR SAMPLES

Air samples were collected by Parsons and analyzed by HSE Consulting Services, LLC for the presence of asbestos fibers as part of the requirements of the asbestos abatement work. The

samples were collected from the perimeter of the work zone prior to abatement (background air samples) and following abatement (clearance air samples) to ensure the abatement had been completed correctly and that the area was safe to enter without respirators and other appropriate PPE. The criteria for the clearance air samples was 0.01 f/cc. The clearance air samples did not exceed the criteria. A copy of the results of the asbestos air sampling is included in Appendix M.

4.6 ON-SITE REUSE

Excavated soil which did not exhibit gross petroleum impacts were stockpiled and reused to backfill the excavations and establish the site sub-grade. Gross petroleum impacts were identified by strong petroleum odors, heavy petroleum staining, and/or petroleum sheen or product.

Soil which was reused on-site include soil excavated from AOC 2, from above the grossly-impacted interval, and soil excavated from across the site to a depth of two feet to allow for the installation of the soil cover system.

The soil reused from AOC 2 was the interval from grade down to the top of the gross impacts. The approximate limits of the grossly impacted intervals in AOC 2 are indicated on Figure 6. The top of the grossly impacted zone of AOC 2 was determined by Parsons and/or NYSDEC as the excavation progressed. There was no grossly-impacted soil encountered in the top two feet outside of the AOCs.

4.7 CONTAMINATION REMAINING AT THE SITE

A summary of the results of the documentation sampling conducted at the site is included in Section 4.5. Petroleum contamination, consisting of soils which are stained, odiferous and/or contain petroleum sheens, remains at depth across much of the site. Endpoint sampling showed exceedances in VOCs at two locations (AOC1B1-W and ACO2-E8). These results are shown in Table 3a. Soil in the areas where the exceedances were noted were excavated to the extent practicable. Remaining contamination will be addressed through the monitoring of natural attenuation processes.

During the Remedial Action, MW-3, MW-4, and MW-5 were destroyed. Two new monitoring wells (MW-3R and MW-4R) were installed in October 2017 to replace these wells. A new pad was also installed around MW-1. During the November 2017 groundwater sampling, one exceedance was detected in MW-2, chloroform was measured 11 ug/L which is higher than the NYSDEC Ambient Water Quality Class GA Groundwater Standards. A summary of volatile organic compound (VOC) and semi-volatile organic compound (SVOC) results are shown in Table 3d and the full lab reports are available in Appendix N. MW-2 is located near the upgradient boundary of the site, while MW-1 and MW-4R are located downgradient of MW-2. The data did not identify groundwater contamination at the site boundary.

A soil cover was placed across the entire site, and was underlain by a demarcation layer, consisting of an orange geotextile. The demarcation layer is present at depths ranging from two feet to approximately four feet.

Since contamination remains beneath the site after completion of the Remedial Action, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (ECs/ICs) are described in the following sections. Long-term management of these EC/ICs and residual contamination will be performed under the Site Management Plan (SMP) approved by the NYSDEC.

4.8 IMPORTED BACKFILL & SOIL COVER SYSTEM

Four materials were utilized as clean, imported backfill during the remedial action. Each source was sampled in accordance with the RAWP prior to import in order to verify the material was free of contaminants and met the project requirements. Pre-approval sampling was conducted by Parsons on September 23, 2016 and analyses were performed by ALS, with the exception of the sieve analysis which was performed by Atlantic Testing Laboratories, Limited as a sub-contractor to Parsons. Pre-approval samples for imported fill were collected at the frequency specified in the RAWP, which was based on section 5.4(e)10 of DER-10.

1. Crushed stone – This material was sourced from Cranesville's permitted mine located in Tully, Onondaga County, New York (NYSDEC Facility # 7315400022). 352.95 tons of this material was imported between October 13 and November 4, 2016 and used to construct a temporary site roadway. That material was eventually reused as backfill below the demarcation layer. An additional 256.43 tons of this material were imported between December 13, 2016 and January 6, 2017, and used to create a portion of the clean soil cover system; in the approximate location shown on Figure 8. It was placed in those areas from the demarcation layer up to six inches below the final grade in order to facilitate removal of the storage box/office and facilitate removal of the temporary fencing. This material was subjected to sieve analysis only, since less than 10 percent of the material by weight passed through a # 80 sieve. Additional stone material was imported by Riccelli from a permitted facility in Madison County, New York. 193.51 tons were imported from this source between April 10, 2017 and April 17, 2017 and used as sub-base below the sidewalk and in the area.

2. Coarse stone – This material was also sourced from Cranesville's mine located in Tully. 74.81 tons of this material were imported between October 12 and 19, 2016 and used to construct the stabilized construction exit. That material was eventually reused as backfill below the demarcation layer. This material was subjected to sieve analysis only, since less than 10 percent of the material by weight passed through a # 80 sieve.

3. Clean soil – This material was sourced from Vitale's permitted mine located in West Monroe, Oswego County, New York (NYSDEC Facility # 7356000001). 341.03 tons of this material were imported between October 25 and 27, 2016 and used to backfill the ash excavation from the bottom up to six inches below the final grade. An additional 1,786.84 tons of this material were

imported between January 9, 2017 and January 13, 2017, and 2,460.33 tons between April 11, 2017 adn April 14, 2017, which were used to construct the on-site soil cover system from the demarcation layer up to six inches below final grade. It was used to construct the cover system across the site, with the exception of the areas described in item 1 above. Sampling results verified that this material was acceptable for use as clean backfill on-site and off-site.

4. Topsoil – This material was sourced from Riccelli/Syracuse Sand and Gravel from Panther Lake, Oswego County, New York. 90 cubic yards of this material were imported between October 27 and November 4, 2016 and used to backfill the top six inches of the ash excavation, and an additional 630 cubic yards of this material were imported on April 17, 2017 and April 18, 2017 and used to construct the top six inches of the on-site soil cover system. Riccelli imported 252 cubic yards of topsoil from a secondary source in Camillus, New York, because the primary source at Panther Lake ran out of stock. Sampling results verified that the topsoil from both sources was acceptable for use as clean backfill on-site and off-site.

The clean soil cover system could not be constructed across two small areas of the site during the implementation of the remedy. The two areas each consist of a thin strip of the site area: one located along the eastern portion of the northern site boundary, and the other located along the eastern edge of the site. There is a high capacity natural gas line located immediately north of the site. In order to install the site cover along the northern edge of the property required excavation to a depth of two feet, and along the eastern half of the property there was a pre-existing chain link fence which had several small trees growing through the fencing. In order to perform the excavation, the trees and their stumps would have needed to be removed, which would have posed a serious risk of damaging the natural gas line. Along the eastern site boundary, neighbors' fences precluded excavation to the full extent of the site without damaging the fences. It is noted that the fence located between the site and 106-08 Huron Street extends onto the site; however, when the ash excavation was performed at 106-08 Huron Street, at least two feet of soil were removed from the wedge-shaped area between the fence and the property line and replaced with two feet of clean soil.

A table of all sources of imported backfill with quantities utilized for each source is shown in Table 5. Tables summarizing chemical analytical results for backfill, in comparison to allowable levels, are provided in Table 5 and the analytical data are included in Appendix O. Tickets/bills-of-lading for each load of earthen materials imported to the site are included in Appendix P.

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 24 inches of clean soil and concrete-covered sidewalks. Figure 8 shows the as-built cross sections for each remedial cover type used on the site. An Excavation Work Plan, which outlines the procedures required in the event the cover system and/or underlying residual contamination are disturbed, is provided in the SMP.

4.9 OTHER ENGINEERING CONTROLS

No other engineering controls were utilized at the site.

4.10 INSTITUTIONAL CONTROLS

The site remedy requires that an environmental easement (EE) be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to restricted residential, commercial or industrial uses only.

The environmental easement for the site was executed by the NYSDEC on May 25th, 2017, and filed with the Onondaga County Clerk on June, 28th, 2017 at deed book 5431 page 745. . A copy of the easement with proof of filing is provided in Appendix Q.

4.11 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

The RAWP discusses the potential of the installation of enhanced in situ remediation materials along the eastern border of the site to provide a clean buffer for the off-site properties. After sampling groundwater from that area, it was determined that the contamination was degrading. Combined with the removal of two USTs, now believed to be the source of the contamination, it was determined that the remaining contamination will be addressed through the monitoring of natural attenuation processes.

Per the RAWP, soils in AOC2 and AOC1B will be excavated until there is no evidence of gross petroleum impacts. In two areas (AOC1B1-W and ACO2-E8), there was evidence of petroleum impacts in the bottom of the excavation. However, given that the sources of contamination have been removed, the mass of contamination on-site was reduced significantly, off-site exceedances were minimal when compared to soil cleanup objectives, present at depths greater than 10 feet, in most instances greater than 15 feet below grade, and that the area is served by a municipal water supply, the monitoring of natural attenuation of the contamination was deemed sufficient.

5.0 REMEDIATION COSTS

The cost of the remedial project includes the cost of the investigation, remedy selection, remedial design, and remedial action. The costs described in this section and sub-sections include only the costs incurred and paid to contractors to complete the work. They do not include the personnel costs incurred by the NYSDEC, NYSDOH or City of Syracuse in the course of the remedial program.

5.1 REMEDIAL INVESTIGATION

The Investigation phase of the project was conducted by the City of Syracuse under the ERP, and included the remedial investigation and remedy selection process. The remedy selection process included the development of an Alternatives Analysis by the City and the development of a Proposed Remedial Action Plan and ROD by the NYSDEC. Through the ERP State Assistance Contract, the NYSDEC provided reimbursement to the City for 90% of eligible costs utilizing funds from the Clean Water/Clean Air Bond Act of 1996. The final cost of the Investigation phase, based on documentation submitted by the City, was $162,269.74. 90% of that amount, $146,042.77,

was reimbursed to the City by the State. The final payment request submitted by the City to the State is included in Appendix R.

Investigation Costs

Total Eligible Cost	City's Cost	State's Cost
$162,269.74	$16,226.97	$146,042.77

5.2 REMEDIAL DESIGN AND REMEDIAL ACTION

The costs incurred during the remedial design (RD) include the costs of conducting the PDI and developing the RAWP as well as any modifications to the RAWP. The RD was completed by Parsons and their subcontractors.

The costs incurred during the remedial action (RA) phase include the costs of implementing the RAWP, establishing a post-remediation groundwater monitoring well network, developing the SMP, placing an EE on the site and generating this FER. The RAWP was implemented by Parsons, Aztech, ATS, NRC, TAL and their subcontractors, the groundwater monitoring wells were installed by NRC and their subcontractor, and Parsons and their subcontractors completed the suvery for the EE, and developed the SMP and FER. The final payment requests for Aztech, ATS, and TAL are included in Appendix R, along with the latest available payment request for Parsons, dated 2/5/18, and NRC, dated 2/22/18. Note, there may be minor differences between the amounts requested on the payment applications in Appendix R and the amounts listed below due to certain costs being disallowed by the NYSDEC. The costs listed below are the amounts actually paid.

The City of Syracuse is responsible for reimbursing the State 10% of the costs incurred for RD/RA for the on-site areas. The State is responsible for 100% of the costs incurred for RD/RA for off-site areas. The State's share of RD/RA costs through 03/01/18 is $ 950,853.65 and the City's share of RD/RA costs through 03/01/18 is $ 101,243.34

Remedial Design Costs

	Parsons
On-site Costs	$ 133,543.70
Off-site Costs	$ 7,488.73
Total Costs	**$ 141,032.43**

Remedial Action Costs (paid by State through 3/01/18)

	Parsons	Aztech	ATS	NRC	TAL	Total
On-site	127,385.30	454,549.50	240,637.08	51,742.56	4,575.26	$ 878,889.70
Off-site	942.95	22,277.31	8,318.81	635.79	0.00	$ 32,174.86
Total	**128,328.25**	**476,826.81**	**248,955.89**	**52.378.35**	**4,575.26**	**$ 911,064.56**

5.3 TOTAL COSTS

The total cost to-date of the remedial program for the site is summarized below. This does not include personnel costs incurred by the NYSDEC, NYSDOH or the City of Syracuse in the course of the remedial program.

Total Remedial Costs (paid by State through 3/01/18)

	City of Syracuse	State of New York	Total
Investigation	$ 16,226.97	$ 146,042.77	$ 162,269.74
Remedial Design	$ 13,354.37	$ 127,678.06	$ 141,032.43
Remedial Action	$ 87,888.97	$ 823,175.59	$ 911,064.56
Total	**$ 117,470.31**	**$ 1,096,896.42**	**$ 1,214,366.73**

TABLES

Table 1 - Waste Characterization Samples
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NYSDEC-Former Brown Manufacturing Validated Test Pit Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id Depth: Source: SDG: Matrix: Sampled: Validated:	TP-01 TP-01 (0-0.5) 2176212002 0 - 0.5 ft ALS 2176212 SOIL 9/15/2016 10:05 3/29/2017	TP-02 TP-02 (0-0.5) 2176212006 0 - 0.5 ft ALS 2176212 SOIL 9/15/2016 12:45 3/29/2017	TP-03 TP-03 (4-4.5) 2176212005 4 - 4.5 ft ALS 2176212 SOIL 9/15/2016 12:35 3/29/2017	TP-04 TP-04 (3-3.5) 2178160003 3 - 3.5 FT ALS R1610068_2178160 SOIL 9/16/2016 8:15 3/29/2017	TP-04 TP-04 (6.5-7) 2178160001 6.5 - 7 FT ALS R1610068_2178160 SOIL 9/16/2016 8:30 3/29/2017	TP-05 TP-05 (10-10.5) 2176212001 10 - 10.5 ft ALS 2176212 SOIL 9/15/2016 9:50 3/29/2017	TP-06 TP-06 (11.5-12) 2176212004 11.5 - 12 ft ALS 2176212 SOIL 9/15/2016 11:30 3/29/2017	TP-06 TP-06 (8-8.5) 2176212003 8 - 8.5 ft ALS 2176212 SOIL 9/15/2016 11:10 3/29/2017	TP-07 TP-07 (9-9.5) 2178160005 9 - 9.5 FT ALS R1610068_2178160 SOIL 9/16/2016 13:20 3/29/2017
CAS NO.	COMPOUND	UNITS:									
	PCBs										
53469-21-9	PCB-1242 (AROCLOR 1242)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)	mg/kg	ND	ND	0.11	8.6 J	ND	0.38	ND	0.081	ND
11097-69-1	PCB-1254 (AROCLOR 1254)	mg/kg	ND	ND	0.25 J	ND	0.69 J	0.12	ND	0.084	ND
11096-82-5	PCB-1260 (AROCLOR 1260)	mg/kg	0.42 J	ND	0.089 J	ND	ND	ND	ND	ND	ND
	Total PCBs	mg/kg	0.42	ND	0.449	8.6	0.69	0.5	ND	0.165	ND
	OTHER										
MOIST	MOISTURE, PERCENT	%	5.2	19.6	11.8	23.2	42.6	17.7	23.5	25.7	37.2
TSO-ALSRMT	SOLIDS, PERCENT	%	94.8	80.4	88.2	76.8	57.4	82.3	76.5	74.3	62.8
TSO-ALSRNY	SOLIDS, PERCENT	%	95.8	91.1	89.4			68.5	73.4	74.2	
	TCLP VOLATILES										
67-66-3	CHLOROFORM	mg/l	0.0043 J	0.0049 J	0.0044 J	ND	ND	0.0111 J	0.0046 J	ND	ND
	TCLP SEMIVOLATILES										
	None Detected										
	TCLP PESTICIDES										
	None Detected										
	TCLP METALS										
7440-39-3	BARIUM	mg/l	0.76	0.35 J	0.24 J	ND	ND	ND	0.23 J	0.32 J	ND
7439-92-1	LEAD	mg/l	ND	ND	0.097	1.2 J	0.28 J	ND	ND	0.0049 J	ND
	WASTE CHARACTERISTICS										
CORROS	CORROSIVITY	pH units	7.56	7.63	8.28	7.72 J	7.47 J	7.44	7.56	7.41	7.5 J
SREAC	REACTIVE SULFIDE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	16.4 J

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

NYSDEC-Former Brown Manufacturing Validated Test Pit Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id Depth: Source: SDG: Matrix: Sampled: Validated:	TP-08 TP-08 (9.5-10) 2178160006 9.5 - 10 FT ALS R1610068_2178160 SOIL 9/16/2016 14:20 3/29/2017	TP-09 TP-09 (10.5-11) 2178160002 10.5 - 11 FT ALS R1610068_2178160 SOIL 9/16/2016 9:35 3/29/2017	TP-10 TP-10 (12-12.5) 2178160007 12 - 12.5 FT ALS R1610068_2178160 SOIL 9/16/2016 15:10 3/29/2017	TP-11 TP-11 (10.5-11) 2178160008 10.5 - 11 FT ALS R1610068_2178160 SOIL 9/16/2016 16:10 3/29/2017	TP-11 TP-11 (12-12.5) 2178160009 12 - 12.5 FT ALS R1610068_2178160 SOIL 9/16/2016 16:25 3/29/2017	TP-12 TP-12 (8.5-9) 2178160004 8.5 - 9 FT ALS R1610068_2178160 SOIL 9/16/2016 11:00 3/29/2017	TP-13 TP-13 (2.5-3) 2176212007 2.5 - 3 ft ALS 2176212 SOIL 9/15/2016 13:05 3/29/2017	TP-14 TP-14 (2.5-3) 2176212008 2.5 - 3 FT ALS 2176212 SOIL 9/15/2016 13:40 3/29/2017
CAS NO.	COMPOUND	UNITS:								
	PCBs									
53469-21-9	PCB-1242 (AROCLOR 1242)	mg/kg	ND	ND	ND	ND	ND	0.17 J	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.062
11097-69-1	PCB-1254 (AROCLOR 1254)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
11096-82-5	PCB-1260 (AROCLOR 1260)	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.21
	Total PCBs	mg/kg	ND	ND	ND	ND	ND	0.17	ND	0.272
	OTHER									
MOIST	MOISTURE, PERCENT	%	21.5	12.3	25.7	23.2	32.6	35.5	7.1	9.1
TSO-ALSRMT	SOLIDS, PERCENT	%	78.5	87.7	74.3	76.8	67.4	64.5	92.9	90.9
TSO-ALSRNY	SOLIDS, PERCENT	%							95.1	89.2
	TCLP VOLATILES									
67-66-3	CHLOROFORM	mg/l	ND	ND	ND	ND	ND	ND	0.0043 J	0.0049 J
	TCLP SEMIVOLATILES									
	None Detected									
	TCLP PESTICIDES									
	None Detected									
	TCLP METALS									
7440-39-3	BARIUM	mg/l	ND	ND	ND	ND	ND	ND	0.19 J	0.56 U
7439-92-1	LEAD	mg/l	ND	ND	ND	0.061 J	0.069 J	0.046 J	ND	ND
	WASTE CHARACTERISTICS									
CORROS	CORROSIVITY	pH units	7.89 J	7.74 J	7.85 J	7.75 J	7.65 J	7.64 J	8.01	8.19
SREAC	REACTIVE SULFIDE	mg/kg	9.2 J	ND	ND	ND	6.4 J	6.4 J	ND	ND

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentrati
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

Table 1 - Waste Characterization Samples
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NYSDEC-Former Brown Manufacturing 2016 Remediation Validated Soil Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id Source: SDG: Matrix: Sampled: Validated:	BM-Drum BM-Drum R1611564-001 ALSRNY R1611564 SOIL 10/31/2016 3/29/2017	BM-Kettle BM-Kettle R1611564-002 ALS R1611564 SOIL 10/31/2016 3/29/2017	BM-TANK-1 BM-TANK-1 R1612297-006 ALSRNY R1612297 SOIL 11/18/2016 3/30/2017
CAS NO.	COMPOUND	UNITS:			
	PCBs				
12672-29-6	PCB-1248 (AROCLOR 1248)	mg/kg	ND	ND	0.068 J
	TOTAL PCBs	mg/kg	ND	ND	0.068
	OTHER				
MOIST	MOISTURE, PERCENT	%		27.2	
TSO-ALSMT	SOLIDS, PERCENT	%		72.8	
TSO-ALSRNY	SOLIDS, PERCENT	percent	75.5	74.2	80.2
	TCLP METALS				
7439-92-1	LEAD	mg/l		0.077	

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

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NYSDEC-Former Brown Manufacturing 2016 Remediation Validated Soil Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-CSS BM-CSS R1611027-001 0-2 Inches ALSRNY R1611027 SOIL 10/17/2016 3/30/2017	BM-CSS-C BM-CSS-C R1611027-002 0-2 Inches ALSRNY R1611027 SOIL 10/17/2016 3/30/2017	BM-DOH BM-DOH R1611281-001 4 Inches ALSRNY R1611281 SOIL 10/24/2016 3/30/2017	BM-DOH-C BM-DOH-C R1611281-002 4 Inches ALSRNY R1611281 SOIL 10/24/2016 3/30/2017	BM-DOH-W BM-DOH-W R1611281-003 4 Inches ALSRNY R1611281 SOIL 10/24/2016 3/30/2017
CAS NO.	COMPOUND	UNITS:					
	PCBs						
12672-29-6	PCB-1248 (AROCLOR 1248)	mg/kg	0.04 J	0.062	2.2	2	1.3
11097-69-1	PCB-1254 (AROCLOR 1254)	mg/kg	0.11	0.29	ND	ND	ND
11096-82-5	PCB-1260 (AROCLOR 1260)	mg/kg	0.055	0.096 J	ND	ND	ND
	TOTAL PCBs	mg/kg	0.205	0.448	2.2	2	1.3
	OTHER						
MOIST	MOISTURE, PERCENT	%					
TSO-ALSMT	SOLIDS, PERCENT	%					
TSO-ALSRNY	SOLIDS, PERCENT	percent	77.6	74.8	80.7	83.3	86.3

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

Table 1 - Waste Characterization Samples
Former Brown Manufacturing Plant
Final Engineering Report

NYSDEC-Former Brown Manufacturing 2016 Remediation Validated Test Pit Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled:	Oil from Tank - 20161108 Oil from Tank - 20161108 490-115757-1 n/a TAL 4901157571 LP 11/8/2016 0:00	Tank-Northern (3 jars)-20161213 Tank-Northern (3 jars)-20161213 490-118281-1 n/a TAL 4901182811 LN 12/13/2016 10:45:00
CAS NO.	COMPOUND	UNITS:		
	PCBs			
	None Detected			
	VOLATILES			
71-43-2	BENZENE	mg/kg	ND	15
100-41-4	ETHYLBENZENE	mg/kg	130	130
98-82-8	ISOPROPYLBENZENE	mg/kg	ND	47
108-87-2	METHYLCYCLOHEXANE	mg/kg	ND	91
108-88-3	TOLUENE	mg/kg	180	150
XYLENES	XYLENES, TOTAL	mg/kg	1100	740
	SEMIVOLATILES			
91-57-6	2-METHYLNAPHTHALENE	mg/kg	11000	8300
86-30-6	N-NITROSODIPHENYLAMINE	mg/kg	ND	1200
91-20-3	NAPHTHALENE	mg/kg	3400	1400
85-01-8	PHENANTHRENE	mg/kg	1000	1000
	METALS			
7439-92-1	LEAD	mg/l	0.54 J	1.2
	WASTE CHARACTERISTICS			
PH	PH	pH units	7.4	6
FLASHPT	FLASHPOINT	deg f	160	162

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

Table 1 - Waste Characterization Samples
Former Brown Manufacturing Plant
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NYSDEC-Former Brown Manufacturing 2016 Remediation Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled:	BM-WC-STOCKPILE-1 BM-WC-STOCKPILE-1 480-110045-1 n/a TALBUFF 4801100451 LB 11/22/2016 16:00	BM-WC-STOCKPILE-2 BM-WC-STOCKPILE-2 480-110045-2 n/a TALBUFF 4801100451 LB 11/22/2016 16:05:00	BM-WC-STOCKPILE-3 BM-WC-STOCKPILE-3 480-110045-3 n/a TALBUFF 4801100451 LB 11/22/2016 16:10:00
CAS NO.	COMPOUND	UNITS:			
	PCBs				
	None Detected				
	VOLATILES				
75-35-4	1,1-DICHLOROETHENE	mg/l	ND	ND	ND
71-43-2	BENZENE	mg/l	ND	ND	ND
56-23-5	CARBON TETRACHLORIDE	mg/l	ND	ND	ND
108-90-7	CHLOROBENZENE	mg/l	ND	ND	ND
67-66-3	CHLOROFORM	mg/l	ND	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	mg/l	ND	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	mg/l	ND	ND	ND
79-01-6	TRICHLOROETHYLENE (TCE)	mg/l	ND	ND	ND
75-01-4	VINYL CHLORIDE	mg/l	ND	ND	ND
	SEMIVOLATILES				
87-86-5	PENTACHLOROPHENOL	mg/l	0.036	ND	ND
	METALS				
7440-39-3	BARIUM	mg/l	1.8 J	1.8 J	1.8 J
7439-92-1	LEAD	mg/l	0.076 J	0.26 J	0.13 J
7782-49-2	SELENIUM	mg/l	ND	0.1	ND
7439-97-6	MERCURY	mg/l	ND	0.0013 J	ND
	WASTE CHARACTERISTICS				
SREAC	SULFIDE REACTIVE	mg/kg	39.9	60.1	59.8
PH	PH	pH units	7.5	7.8	7.8

Notes:

ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
mg/kg	Miligrams per kilogram
mg/l	Milligrams per liter

Table 1 - Waste Characterization Samples
Former Brown Manufacturing Plant
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NYSDEC-Former Brown Manufacturing		Location ID:	Pipe Wrap
2016 Remediation		Sample ID:	16334-16-144-001
		Lab Sample Id:	216121334
		Depth:	n/a
		Source:	AmeriSci
		SDG:	216121331
		Matrix:	Bulk
		Sampled:	12/2/2016 0:00
CAS NO.	COMPOUND	UNITS:	
	Asbestos		
	Chrysotile	%	57.10%

Table 2 - Offsite Waste Disposal Volumes and Facilities
Former Brown Manufacturing
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Facilty	Facilty Address	Material	Source	Volume Diposed	Unit
Ontario County Landfill	3555 Post Farm Rd, Stanley, NY	non-TSCA Soil and ASH	AOC2/ash excavation	261.68	tons
Ontario County Landfill	3555 Post Farm Rd, Stanley, NY	petroleum contaminated soil	AOC1B/AOC2	3582.88	tons
Wayne Disposal, Inc. Site #2 Landfill	49350 N I-94 Service Drive, Belleville, MI	PCB Soils	AOC1A	2797	kg
Wayne Disposal, Inc. Site #2 Landfill	49351 N I-94 Service Drive, Belleville, MI	PCB Capacitors	AOC1A/AOC2	1	drums
Industrial Oil Tank Service Corp.	120 Dry Rd., Oriskany, New York	Drums-oil	tank cleaning	12	drums
Industrial Oil Tank Service Corp.	120 Dry Rd., Oriskany, New York	oil	USTs	8180	gallons
Industrial Oil Tank Service Corp.	121 Dry Rd., Oriskany, New York	groundwater	site wide	~5100	gallons
Metalico Rochester, Inc.	1515 Scottsville Rd, Rochester, NY	scrap metals	site wide	~17	tons
Seneca Meadows, Inc.	1786 Saleman Rd., Waterloo, NY	petroleum contaminated soil	AOC1B/AOC2, UST001/UST002	1864.34	tons
Seneca Meadows, Inc.	1786 Saleman Rd., Waterloo, NY	Friable Asbestos	pipe wrap	0.11	tons

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC1A1 BM-AOC1A1-1 R1610962-004 0-6 Inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1A1 BM-AOC1A1-2 R1610962-005 0-6 Inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1A1 BM-AOC1A1-3 R1610962-006 6 inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1A1 BM-AOC1A1-C R1610962-007 6 inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1A2 BM-AOC1A2-1 R1610962-001 0-6 Inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1A2 BM-AOC1A2-2 R1610962-002 0-6 Inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:						
	VOLATILES									
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg						
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg						
67-64-1	ACETONE	0.05	100	mg/kg						
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg						
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg						
104-51-8	N-BUTYLBENZENE	12	100	mg/kg						
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg						
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg						
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg						
	TOTAL VOCS									
	SEMIVOLATILES									
83-32-9	ACENAPHTHENE	20	100	mg/kg						
208-96-8	ACENAPHTHYLENE	100	100	mg/kg						
120-12-7	ANTHRACENE	100	100	mg/kg						
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg						
50-32-8	BENZO(A)PYRENE	1	1	mg/kg						
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg						
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg						
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg						
218-01-9	CHRYSENE	1	3.9	mg/kg						
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg						
132-64-9	DIBENZOFURAN	7	59	mg/kg						
206-44-0	FLUORANTHENE	100	100	mg/kg						
86-73-7	FLUORENE	30	100	mg/kg						
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg						
91-20-3	NAPHTHALENE	12	100	mg/kg						
85-01-8	PHENANTHRENE	100	100	mg/kg						
129-00-0	PYRENE	100	100	mg/kg						
	TOTAL SVOCS									
	PCBs									
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	0.056	ND	ND	0.14	ND	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	0.12	ND	ND	0.034 J	1.9	2.5
11096-82-5	PCB-1260 (AROCLOR 1260)			mg/kg	ND	ND	ND	ND	0.84 J	1.2 J
	TOTAL PCBs	0.1	1	mg/kg	**0.176**	ND	ND	**0.174**	2.74	3.7
	METALS									
7440-38-2	ARSENIC	13	16	mg/kg						
7440-39-3	BARIUM	350	400	mg/kg						
7440-41-7	BERYLLIUM	7.2	72	mg/kg						
7440-43-9	CADMIUM	2.5	4.3	mg/kg						
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg						
7440-50-8	COPPER	50	270	mg/kg						
7439-92-1	LEAD	63	400	mg/kg						
7439-96-5	MANGANESE	1600	2000	mg/kg						
7439-97-6	MERCURY	0.18	0.81	mg/kg						
7440-02-0	NICKEL	30	310	mg/kg						
7782-49-2	SELENIUM	3.9	180	mg/kg						
7440-66-6	ZINC	109	10000	mg/kg						
	OTHER									
TSO-ALSRNY	SOLIDS, PERCENT			percent	88.3	78.7	89.5	83.1	87.5	84.4

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
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NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC1A2 BM-AOC1A2-3 R1610962-003 6 inches ALSRNY R1610962 SOIL 10/13/2016 3/30/2017	BM-AOC1B1-B BM-AOC1B1-B R1612539-004 8 ft ALSRNY R1612539 SOIL 11/28/2016 3/30/2017	BM-AOC1B1-N BM-AOC1B1-N R1612539-002 8 ft ALSRNY R1612539 SOIL 11/28/2016 3/30/2017	BM-AOC1B1-S BM-AOC1B1-S R1612539-001 8 ft ALSRNY R1612539 SOIL 11/28/2016 3/30/2017	BM-AOC1B1-W BM-AOC1B1-W R1612539-003 8 ft ALSRNY R1612539 SOIL 11/28/2016 3/30/2017	BM-AOC1B2-B BM-AOC1B2-B R1612784-003 10-15 ft ALSRNY R1612784 SOIL 12/6/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:						
	VOLATILES									
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg		1.7	0.044 J	0.93	0.035 J-	6.2
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg		0.73	0.014 J	0.42	ND	2
67-64-1	ACETONE	0.05	100	mg/kg		0.064 J-	**0.36**	0.087 J-	**0.24**	ND
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg		0.37	ND	0.18 J-	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg		ND	0.11 J-	ND	0.073 J-	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg		0.39	R	0.2	ND	2.5
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg		0.21	R	0.21	ND	ND
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg		0.16 J-	R	0.16 J-	ND	ND
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg		ND	R	ND	ND	ND
	TOTAL VOCS					3.624	0.528	2.187	0.348	10.7
	SEMIVOLATILES									
83-32-9	ACENAPHTHENE	20	100	mg/kg		0.12	ND	0.062	1.7	0.27
208-96-8	ACENAPHTHYLENE	100	100	mg/kg		ND	ND	ND	1.1	ND
120-12-7	ANTHRACENE	100	100	mg/kg		ND	ND	ND	4.5	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg		0.32	ND	0.22	11	0.34
50-32-8	BENZO(A)PYRENE	1	1	mg/kg		ND	ND	0.13	9.1	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg		0.12	ND	0.15	11	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg		ND	ND	0.073	5.4	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg		ND	ND	ND	**3.9**	ND
218-01-9	CHRYSENE	1	3.9	mg/kg		1.1	0.68	0.62	11	**1.4**
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg		ND	ND	ND	1.5	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg		0.11	ND	0.063	1.7	0.35
206-44-0	FLUORANTHENE	100	100	mg/kg		0.25	0.33	0.24	18	0.36
86-73-7	FLUORENE	30	100	mg/kg		0.27	ND	0.13	3.2	0.71
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg		ND	ND	0.072	6	ND
91-20-3	NAPHTHALENE	12	100	mg/kg		0.68	ND	0.12	2.2	2.8
85-01-8	PHENANTHRENE	100	100	mg/kg		1.5	0.75	0.67	17	2.3
129-00-0	PYRENE	100	100	mg/kg		0.41	0.49	0.32	20	0.54
	TOTAL SVOCS					4.88	2.25	2.87	128.3	9.07
	PCBs									
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	0.19 J	1.1	0.1 J	2.4 J	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	1.7	0.038	ND	ND	0.83	ND
11096-82-5	PCB-1260 (AROCLOR 1260)			mg/kg	0.62 J	ND	ND	ND	ND	ND
	TOTAL PCBs	0.1	1	mg/kg	2.32	**0.228**	1.1	0.1	3.23	ND
	METALS									
7440-38-2	ARSENIC	13	16	mg/kg		3	4	4.5	6.7	2
7440-39-3	BARIUM	350	400	mg/kg		34.3	94.6	114	1410	38.4
7440-41-7	BERYLLIUM	7.2	72	mg/kg		ND	0.578	0.491	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg		ND	ND	ND	1.4	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg		9	17.1	14.1	14.3	7.2
7440-50-8	COPPER	50	270	mg/kg		10.3	19.7	25.6	**86.6**	6.9
7439-92-1	LEAD	63	400	mg/kg		7.8	17.5	19	**282**	ND
7439-96-5	MANGANESE	1600	2000	mg/kg		289	471	313	299	148
7439-97-6	MERCURY	0.18	0.81	mg/kg		ND	0.062	0.08	**0.602**	ND
7440-02-0	NICKEL	30	310	mg/kg		8.7	21	21.2	**38.7**	8.6
7782-49-2	SELENIUM	3.9	180	mg/kg		1.3	1.8	1.6	1.9	1.8
7440-66-6	ZINC	109	10000	mg/kg		23.6	59	51.7	**259**	20.8
	OTHER									
TSO-ALSRNY	SOLIDS, PERCENT			percent	83.6	89.5	75.3	78.9	74.4	81.4

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC1B2-E BM-AOC1B2-E R1612784-004 10-15 ft ALSRNY R1612784 SOIL 12/6/2016 3/30/2017	BM-AOC1B2-N BM-AOC1B2-N R1612784-002 10-15 ft ALSRNY R1612784 SOIL 12/6/2016 3/30/2017	BM-AOC1B2-S BM-AOC1B2-S R1612784-001 10-15 ft ALSRNY R1612784 SOIL 12/6/2016 3/30/2017	BM-AOC1B2-W BM-AOC1B2-W R1612784-005 10-15 ft ALSRNY R1612784 SOIL 12/6/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:				
	VOLATILES							
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	0.08 J-	1.6	0.68	0.86
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	ND	1.9	0.22	0.30
67-64-1	ACETONE	0.05	100	mg/kg	**0.37**	0.067 J-	**0.22**	**0.082 J-**
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	ND	**0.31**	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	0.095 J-	ND	0.064 J-	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	ND	3.3	0.18 J-	0.25
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	ND	1.1	0.067 J-	0.16 J-
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	ND	0.82	0.05 J-	0.11 J-
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	ND	0.11 J-	ND	ND
	TOTAL VOCS				0.545	9.207	1.481	1.762
	SEMIVOLATILES							
83-32-9	ACENAPHTHENE	20	100	mg/kg	ND	0.65	ND	ND
208-96-8	ACENAPHTHYLENE	100	100	mg/kg	ND	ND	ND	ND
120-12-7	ANTHRACENE	100	100	mg/kg	ND	0.33	ND	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	0.28	0.55	0.53	0.28
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	ND	ND	ND	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	ND	0.28	0.18	0.22
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	ND	ND	ND	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	ND	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	0.66	**1.6**	**2.1**	**1.1**
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	ND	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	ND	0.58	ND	ND
206-44-0	FLUORANTHENE	100	100	mg/kg	0.26	0.74	ND	0.3
86-73-7	FLUORENE	30	100	mg/kg	ND	1.1	0.26	0.25
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	ND	ND	ND	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	0.15	4.3	0.57	0.82
85-01-8	PHENANTHRENE	100	100	mg/kg	0.53	3.3	1.8	ND
129-00-0	PYRENE	100	100	mg/kg	0.39	0.97	0.49	0.4
	TOTAL SVOCS				2.27	14.4	5.93	3.37
	PCBs							
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	0.094	2.2	ND	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	ND	ND	ND
11096-82-5	PCB-1260 (AROCLOR 1260)			mg/kg	ND	ND	ND	ND
	TOTAL PCBs	0.1	1	mg/kg	0.094	2.2	ND	ND
	METALS							
7440-38-2	ARSENIC	13	16	mg/kg	4.6	3	4.4	3.6
7440-39-3	BARIUM	350	400	mg/kg	137	77.3	74.8	70.9
7440-41-7	BERYLLIUM	7.2	72	mg/kg	0.673	0.371	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	20.7	11.8	12.3	7.9
7440-50-8	COPPER	50	270	mg/kg	29.1	20	13.9	10.9
7439-92-1	LEAD	63	400	mg/kg	18.7	21.6	ND	ND
7439-96-5	MANGANESE	1600	2000	mg/kg	203	226	211	130
7439-97-6	MERCURY	0.18	0.81	mg/kg	0.082	0.095	ND	ND
7440-02-0	NICKEL	30	310	mg/kg	29.5	16.7	16.4	10.1
7782-49-2	SELENIUM	3.9	180	mg/kg	2.9	2.1	2.9	1.9
7440-66-6	ZINC	109	10000	mg/kg	84.7	60.3	41.8	27.9
	OTHER							
TSO-ALSRNY	SOLIDS, PERCENT			percent	66.2	80.1	62.4	76.6

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
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ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC2-B1 BM-AOC2-B1 R1611564-003/2187263001 10-15 ft ALSRNY/ALSMP R1611564/2187263 SOIL 10/31/2016 3/29/2017	BM-AOC2-B2 BM-AOC2-B2 R1611782-002 10-15 ft ALSRNY R1611782 SOIL 11/4/2016 3/30/2017	BM-AOC2-B3 BM-AOC2-B3 R1612614-001 15 ft ALSRNY R1612614 SOIL 12/1/2016 3/30/2017	BM-AOC2-B4 BM-AOC2-B4 R1612051-001 10-15 ft ALSRNY R1612051 SOIL 11/11/2016 3/30/2017	BM-AOC2-B5 BM-AOC2-B5 R1612163-001 15 ft ALS R1612163 SOIL 11/15/2016 3/30/2017	BM-AOC2-B6 BM-AOC2-B6 R1612297-002 15 ft ALSRNY R1612297 SOIL 11/18/2016 3/30/2017	BM-AOC2-B7 BM-AOC2-B7 R1612297-004 16 ft ALSRNY R1612297 SOIL 11/18/2016 3/30/2017	BM-AOC2-B8 BM-AOC2-B8 R1612968-001 10-15 ft ALSRNY R1612968 SOIL 12/7/2016 3/30/2017	BM-AOC2-E1 BM-AOC2-E1 R1611614-001/2187262001 10-15 ft ALSRNY/ALSMP R1611614/2187262 SOIL 11/1/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:									
	VOLATILES												
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	ND	0.12 J	0.12 J	ND	0.0354 J-	ND	0.58 J-	3.1	R
107-06-2	1,2-DICHLOROETHANE	0.02	3.1	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	ND	0.034 J	0.04 J	ND	0.005 J-	ND	0.53 J-	0.96	0.023 J
67-64-1	ACETONE	0.05	100	mg/kg	0.014 J-	0.019 J-	0.036 J-	0.021 J-	**0.14 J-**	0.015 J-	ND	ND	0.03 J-
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	ND	ND	0.036 J	ND	0.0076 J-	ND	ND	ND	ND
100-41-4	ETHYLBENZENE	1	41	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	ND	ND	0.012 J-	ND	ND	ND	ND	ND	0.0065 J-
75-09-2	METHYLENE CHLORIDE	0.05	100	mg/kg	ND	ND	ND	ND	0.0333 J-	ND	ND	ND	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	ND	0.04 J	0.038 J	ND	ND	ND	0.81 J-	1	0.049 J
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	ND	0.012 J	0.018 J	ND	0.0124 J-	ND	0.64 J-	ND	0.019 J
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	ND	0.023 J	0.013 J	ND	0.0137 J-	ND	0.46 J-	ND	0.029 J
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	ND	R	R	ND	ND	ND	0.06 J-	ND	R
1634-04-4	TERT-BUTYL METHYL ETHER	0.93	100	mg/kg	ND	ND	ND	ND	0.0012 J	ND	ND	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	1.3	19	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	0.019 J-
108-88-3	TOLUENE	0.7	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
	TOTAL VOCS				0.014	0.248	0.313	0.021	0.2486	0.015	3.08	5.06	0.1755
	SEMIVOLATILES												
83-32-9	ACENAPHTHENE	20	100	mg/kg	ND	ND	ND	ND	0.047	0.0091	0.46	0.31	ND
120-12-7	ANTHRACENE	100	100	mg/kg	ND	ND	ND	ND	ND	ND	0.21	ND	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	0.019	0.17	0.36	ND	0.063	ND	0.43	0.57	ND
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	0.018	ND	ND	ND	ND	ND	ND	ND	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	0.021	ND	0.18	ND	ND	ND	ND	ND	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	0.014	ND	ND	ND	ND	ND	ND	ND	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	0.035	0.92	1.5	ND	0.29	0.0081	**1.9**	**3**	**2.4**
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	ND	ND	ND	ND	0.048	ND	0.36	0.36	ND
206-44-0	FLUORANTHENE	100	100	mg/kg	0.027	ND	0.38	ND	0.075	ND	ND	ND	ND
86-73-7	FLUORENE	30	100	mg/kg	ND	ND	0.19	ND	0.1	ND	0.75	0.77	ND
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	0.015	ND	ND	ND	ND	ND	ND	ND	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	2.1	ND
85-01-8	PHENANTHRENE	100	100	mg/kg	0.016	0.82	1.2	ND	0.12	0.0095	2.7	3.9	ND
129-00-0	PYRENE	100	100	mg/kg	0.03	0.22	0.58	ND	0.11	ND	0.68	1.1	0.52
	TOTAL SVOCS				0.195	2.13	4.39	0	0.853	0.0267	7.49	12.11	2.92
	PCBs												
53469-21-9	PCB-1242 (AROCLOR 1242)			mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	ND	ND	ND	ND	ND	0.15	0.79	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
	TOTAL PCBs	0.1	1	mg/kg	ND	ND	ND	ND	ND	ND	**0.15**	**0.79**	ND
	METALS												
7440-38-2	ARSENIC	13	16	mg/kg	ND	3.6	3.8	62.7 J	5.6	5.4	ND	2.8	ND
7440-39-3	BARIUM	350	400	mg/kg	56	44	92.3 J	110 J	24	87.4	12.8	30.3	52.9
7440-41-7	BERYLLIUM	7.2	72	mg/kg	ND	ND	ND	0.472	ND	ND	ND	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	1.2	ND	ND	ND	ND	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	9.3	5.7	8	13.7	5.1	5.5	4.6	6.7	7.2
7440-50-8	COPPER	50	270	mg/kg	9.3	9.2	11.7	283	11.5	12.7	9.1	9	10.5
7439-92-1	LEAD	63	400	mg/kg	6.8	ND	11.3	11.4	7	ND	ND	ND	7.5
7439-96-5	MANGANESE	1600	2000	mg/kg	191	200	218 J	147	211	198	135	179	220
7439-97-6	MERCURY	0.18	0.81	mg/kg	ND	ND	ND	0.05	ND	ND	ND	ND	ND
7440-02-0	NICKEL	30	310	mg/kg	12.8	10.2	15.6	**35.5 J**	11.4	8.2	6.5	9.4	10.9
7782-49-2	SELENIUM	3.9	180	mg/kg	ND	ND	2	**9.6 J**	2.3	2.1	1.4	1.4	ND
7440-66-6	ZINC	109	10000	mg/kg	29	20.2	30.7	74.5	24.8	22.1	16.2	22.3	26.9
	OTHER												
MOIST	MOISTURE, PERCENT			%	23				16.6				26.8
TSO-ALSMT	SOLIDS, PERCENT			%	77				83.4				73.2
TSO-ALSRNY	SOLIDS, PERCENT			percent	76.7	82.6	75.3	76.5	76.1	84.2	86.2	82.2	80.7

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC2-E2 BMAOC2-E2 R1611614-002/2187262002 10-15 ft ALSRNY/ALSMP R1611614/2187262 SOIL 11/1/2016 3/30/2017	BM-AOC2-E3 BM-AOC2-E3 R1611695-001/2187261001 10-15 ft ALSRNY/ALSMP R1611695/2187261 SOIL 11/2/2016 3/30/2017	BM-AOC2-E4 BM-AOC2-E4 R1611782-001 10-15 ft ALSRNY R1611782 SOIL 11/4/2016 3/30/2017	BM-AOC2-E5 BM-AOC2-E5 R1611850-001 10-15 ft ALSRNY R1611850 SOIL 11/7/2016 3/30/2017	BM-AOC2-E6 BM-AOC2-E6 R1611850-002 10-15 ft ALSRNY R1611850 SOIL 11/8/2016 3/30/2017	BM-AOC2-E7 BM-AOC2-E7 R1612614-002 15 ft ALSRNY R1612614 SOIL 11/30/2016 3/30/2017	BM-AOC2-E8 BM-AOC2-E8 R1612968-002 10-15 ft ALSRNY R1612968 SOIL 12/7/2016 3/30/2017	BM-AOC2-E9 BM-AOC2-E9 R1612968-005 10-15 ft ALSRNY R1612968 SOIL 12/8/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:								
	VOLATILES											
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	0.0086 J	0.018 J	0.011 J	0.78 J	0.37 J+	0.14 J	**4.9**	1.4
107-06-2	1,2-DICHLOROETHANE	0.02	3.1	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	0.027 J	0.0067 J	R	0.21 J	0.12 J	0.043 J	1.5	0.05 J-
67-64-1	ACETONE	0.05	100	mg/kg	0.055 J-	0.015 J-	0.14 J-	0.0097 J-	0.018 J-	**0.064 J-**	ND	**0.069 J-**
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	ND	ND	ND	ND	0.071 J-	0.032 J-	ND	0.12 J-
100-41-4	ETHYLBENZENE	1	41	mg/kg	ND	ND	ND	0.0059 J-	ND	ND	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	0.016 J-	ND	ND	ND	ND	0.018 J-	ND	ND
75-09-2	METHYLENE CHLORIDE	0.05	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	0.025 J	0.045 J	0.023 J	0.11 J	0.07 J	0.03 J	1.6	0.31
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	0.015 J	R	0.016 J	0.087 J	0.048 J	0.023 J	ND	0.2
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	0.01 J	0.027 J	0.0098 J	0.057 J	0.033 J	0.014 J	ND	0.16 J-
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	R	R	R	R	R	R	ND	ND
1634-04-4	TERT-BUTYL METHYL ETHER	0.93	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	1.3	19	mg/kg	ND	0.15 J-	0.024 J-	0.006 J-	ND	ND	ND	ND
108-88-3	TOLUENE	0.7	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
	TOTAL VOCS				0.1566	0.2617	0.2238	1.2656	0.73	0.364	8	2.309
	SEMIVOLATILES											
83-32-9	ACENAPHTHENE	20	100	mg/kg	ND	ND	ND	ND	ND	ND	1	0.28
120-12-7	ANTHRACENE	100	100	mg/kg	ND	ND	ND	ND	ND	ND	2.1	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	0.19	0.33	0.37	0.23	0.14	0.46	4.3	0.58
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	ND	ND	ND	ND	ND	0.18	2.4	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	ND	ND	ND	ND	ND	0.14	3.1	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	ND	ND	ND	ND	ND	ND	1.7	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	ND	ND	ND	ND	**0.95**	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	**2.2**	**1.7**	**1.6**	**1.3**	0.94	**2.6**	9.5	**1.9**
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	ND	ND	ND	ND	ND	ND	1.8	0.25
206-44-0	FLUORANTHENE	100	100	mg/kg	ND	ND	ND	ND	ND	0.29	5.7	0.39
86-73-7	FLUORENE	30	100	mg/kg	0.21	0.21	0.17	0.27	0.19	0.25	2.6	0.53
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	ND	ND	ND	ND	ND	ND	1.7	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	ND	ND	ND	ND	ND	ND	4.6	0.91
85-01-8	PHENANTHRENE	100	100	mg/kg	ND	0.61	0.19	2	1.4	2.5	15	2.2
129-00-0	PYRENE	100	100	mg/kg	0.45	0.38	0.38	0.37	0.23	0.6	7.8	0.67
	TOTAL SVOCS				3.05	3.23	2.71	4.17	2.9	7.02	64.25	7.71
	PCBs											
53469-21-9	PCB-1242 (AROCLOR 1242)			mg/kg	ND	ND	ND	0.91	0.37	ND	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	ND	ND	ND	ND	ND	1.2	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	ND	ND	ND	ND	ND	0.27	ND
	TOTAL PCBs	0.1	1	mg/kg	ND	ND	ND	**0.91**	**0.37**	ND	1.47	ND
	METALS											
7440-38-2	ARSENIC	13	16	mg/kg	ND	18.8	2.1	3.4	ND	2.2	8	3.2
7440-39-3	BARIUM	350	400	mg/kg	55.5 J	39.9	47.9	91.4	24.7 J	69.1	167	71.3
7440-41-7	BERYLLIUM	7.2	72	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	9 J	15.9	6.9	7.8	5	7.6	9	13.6
7440-50-8	COPPER	50	270	mg/kg	15.3 J	16.1	10.3	17	10.8	9.3	**57.3**	10.1
7439-92-1	LEAD	63	400	mg/kg	6.1 J	ND	15.6	40	ND	ND	**127**	ND
7439-96-5	MANGANESE	1600	2000	mg/kg	280 J	390	171	354	147	188	118	144
7439-97-6	MERCURY	0.18	0.81	mg/kg	ND	ND	ND	**0.228**	ND	ND	**0.214**	ND
7440-02-0	NICKEL	30	310	mg/kg	14.4 J	21.7	10.4	12.4	9.5	11.2	12.5	13.5
7782-49-2	SELENIUM	3.9	180	mg/kg	ND	ND	1.9	1.9	1.8	1.8	2.4	1.7
7440-66-6	ZINC	109	10000	mg/kg	32 J	35.8	32.5	47.8	17.5	25	92.9	26.8
	OTHER											
MOIST	MOISTURE, PERCENT			%	51	17						
TSO-ALSMT	SOLIDS, PERCENT			%	49	83						
TSO-ALSRNY	SOLIDS, PERCENT			percent	71.4	82.8	84.8	86.9	80.3	76.1	68	80.3

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC2-E10 BM-AOC2-E10 R1612968-007 10-15 ft ALSRNY R1612968 SOIL 12/8/2016 3/30/2017	BM-AOC2-N1 BM-AOC2-N1 R1612614-003 15 ft ALSRNY R1612614 SOIL 11/30/2016 3/30/2017	BM-AOC2-N2 BM-AOC2-N2 R1612163-002 15 ft ALS R1612163 SOIL 11/15/2016 3/30/2017	BM-AOC2-N3 BM-AOC2-N3 R1612297-003 15 ft ALSRNY R1612297 SOIL 11/18/2016 3/30/2017	BM-AOC2-N4 BM-AOC2-N4 R1612968-008 10-15 ft ALSRNY R1612968 SOIL 12/8/2016 3/30/2017	BM-AOC2-S BM-AOC2-S R1611564-004/2187263002 10-15 ft ALSRNY/ALSMP R1611564/2187263 SOIL 10/31/2016 3/29/2017	BM-AOC2-S2 BM-AOC2-S2 R1612051-002 10-15 ft ALSRNY R1612051 SOIL 11/11/2016 3/30/2017	BM-AOC2-S2 BM-AOC2-S2-DUP R1612051-003 10-15 ft ALSRNY R1612051 SOIL 11/11/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:								
	VOLATILES											
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	ND	0.036 J	R	0.087 J-	ND	ND	ND	ND
107-06-2	1,2-DICHLOROETHANE	0.02	3.1	mg/kg	ND	ND	0.0018 J	ND	ND	ND	ND	ND
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	ND	R	R	0.22 J-	ND	ND	ND	ND
67-64-1	ACETONE	0.05	100	mg/kg	**0.065 J-**	0.018 J-	**0.0725 J-**	ND	0.019 J-	0.023 J-	ND	ND
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	ND	ND	0.0076 J	ND	ND	ND	ND	ND
100-41-4	ETHYLBENZENE	1	41	mg/kg	ND	ND	0.0013 J	ND	ND	ND	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	0.017 J-	ND	ND	ND	ND	ND	ND	ND
75-09-2	METHYLENE CHLORIDE	0.05	100	mg/kg	ND	ND	0.032 J	ND	ND	ND	ND	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	ND	0.039 J	0.0401 J	0.2 J-	ND	ND	ND	ND
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	ND	0.025 J	0.0583 J	0.12 J-	ND	ND	ND	ND
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	ND	0.023 J	0.0439 J	0.069 J-	ND	ND	ND	ND
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	ND	R	R	ND	ND	ND	ND	ND
1634-04-4	TERT-BUTYL METHYL ETHER	0.93	100	mg/kg	ND	ND	0.00088 J	ND	ND	ND	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	1.3	19	mg/kg	ND	ND	0.0159 J-	ND	ND	ND	ND	ND
108-88-3	TOLUENE	0.7	100	mg/kg	ND	ND	0.0054 J-	ND	ND	ND	ND	ND
	TOTAL VOCS				0.082	0.141	0.27968	0.696	0.019	0.023	0	0
	SEMIVOLATILES											
83-32-9	ACENAPHTHENE	20	100	mg/kg	ND	ND	0.2	ND	ND	ND	ND	ND
120-12-7	ANTHRACENE	100	100	mg/kg	ND	ND	ND	ND	0.044	ND	ND	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	ND	0.72	0.28	ND	0.15	0.011	ND	ND
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	ND	ND	ND	ND	0.15	ND	ND	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	ND	ND	ND	ND	0.18	0.011	ND	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	ND	ND	ND	ND	0.11	ND	ND	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	ND	ND	0.068	ND	ND	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	0.076	**3.6**	**1.7**	0.77	0.14	0.02	0.1	0.12
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	ND	ND	0.17	ND	ND	ND	ND	ND
206-44-0	FLUORANTHENE	100	100	mg/kg	ND	ND	ND	ND	0.29	0.015	ND	ND
86-73-7	FLUORENE	30	100	mg/kg	ND	0.36	0.46	0.16	ND	ND	ND	ND
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	ND	ND	ND	ND	0.11	ND	ND	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
85-01-8	PHENANTHRENE	100	100	mg/kg	ND	2.8	0.24	1.1	0.14	0.011	ND	ND
129-00-0	PYRENE	100	100	mg/kg	ND	0.84	0.41	0.19	0.26	0.016	ND	ND
	TOTAL SVOCS				0.076	8.32	3.46	2.22	1.642	0.084	0.1	0.12
	PCBs											
53469-21-9	PCB-1242 (AROCLOR 1242)			mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	ND	0.054	ND	ND	ND	ND	ND
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
	TOTAL PCBs	0.1	1	mg/kg	ND	ND	0.054	ND	ND	ND	ND	ND
	METALS											
7440-38-2	ARSENIC	13	16	mg/kg	3.1	2.7	2.3	7.7	1.8	ND	2.9	2.8
7440-39-3	BARIUM	350	400	mg/kg	110	55.2	38.5	37.9	46	41.6	25.3	31.4
7440-41-7	BERYLLIUM	7.2	72	mg/kg	0.501	ND	ND	ND	ND	ND	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	14.9	6.8	3.8	6	7.1	6.7	5.1	5.6
7440-50-8	COPPER	50	270	mg/kg	16.7	10	5.5	7.2	13.7	15.8	10.9	11.1
7439-92-1	LEAD	63	400	mg/kg	9.9	ND	ND	ND	13.9	10	7.5 J	21 J
7439-96-5	MANGANESE	1600	2000	mg/kg	268	166	211	205	166	278	210	194
7439-97-6	MERCURY	0.18	0.81	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.037 J
7440-02-0	NICKEL	30	310	mg/kg	20.5	12.1	6.2	7.3	9	11.1	7.4	8.6
7782-49-2	SELENIUM	3.9	180	mg/kg	2	1.8	1.5	1.7	1.6	ND	1.9	2.1
7440-66-6	ZINC	109	10000	mg/kg	49.4	26.1	18	17.5	31.1	24.5	19.3	20.2
	OTHER											
MOIST	MOISTURE, PERCENT			%			19.2			19.5		
TSO-ALSMT	SOLIDS, PERCENT			%			80.8			80.5		
TSO-ALSRNY	SOLIDS, PERCENT			percent	73.6	72.3	79.8	91	77.3	70.8	88.2	83

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC2-W1 BM-AOC2-W1 R1611564-005/2187263003 10-15 ft ALSRNY/ALSMP R1611564/2187263 SOIL 10/31/2016 3/29/2017	BM-AOC2-W2 BM-AOC2-W2 R1611782-003 10-15 ft ALSRNY R1611782 SOIL 11/4/2016 3/30/2017	BM-AOC2-W2 BM-AOC2-W2-DUP R1611782-004 10-15 ft ALSRNY R1611782 SOIL 11/4/2016 3/30/2017	BM-AOC2-W3 BM-AOC2-W3 R1611850-003 10-15 ft ALSRNY R1611850 SOIL 11/8/2016 3/30/2017	BM-AOC2-W3 BM-AOC2-W3-DUP R1611850-004 10-15 ft ALSRNY R1611850 SOIL 11/8/2016 3/30/2017	BM-AOC2-W4 BM-AOC2-W4 R1612614-004 15 ft ALSRNY R1612614 SOIL 11/30/2016 3/30/2017	BM-AOC2-W5 BM-AOC2-W5 R1612297-001 16 ft ALSRNY R1612297 SOIL 11/18/2016 3/30/2017	BM-AOC2-W6 BM-AOC2-W6 R1612297-005 16 ft ALSRNY R1612297 SOIL 11/18/2016 3/30/2017
CAS NO.	COMPOUND			UNITS:								
	VOLATILES											
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	ND	0.055 J	0.15 J	0.025 J	0.024 J	0.019 J	ND	1.1 J-
107-06-2	1,2-DICHLOROETHANE	0.02	3.1	mg/kg	ND	ND	ND	ND	ND	R	ND	ND
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	ND	0.024 J	0.058 J	0.017 J	0.024 J	0.0092 J	ND	0.46 J-
67-64-1	ACETONE	0.05	100	mg/kg	0.016 J-	ND	0.03 J	0.17 J-	0.17 J-	**0.096 J**	ND	ND
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	ND	ND	ND	ND	ND	R	ND	0.21 J-
100-41-4	ETHYLBENZENE	1	41	mg/kg	ND	ND	ND	ND	ND	R	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	ND	ND	ND	0.0088 J-	0.012 J-	0.025 J	ND	ND
75-09-2	METHYLENE CHLORIDE	0.05	100	mg/kg	ND	ND	ND	ND	ND	R	ND	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	ND	0.028 J	0.05 J	0.018 J	0.024 J	0.0097 J	0.6 J-	0.34 J-
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	ND	0.014 J	0.029 J	0.0097 J	0.012 J	R	0.28 J-	0.17 J-
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	ND	0.012 J	0.021 J	0.0081 J	0.011 J	R	0.33 J-	0.11 J-
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	ND	R	R	R	R	R	0.046 J-	ND
1634-04-4	TERT-BUTYL METHYL ETHER	0.93	100	mg/kg	ND	ND	ND	ND	ND	R	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	1.3	19	mg/kg	ND	ND	ND	0.032 J	0.016 J	R	ND	ND
108-88-3	TOLUENE	0.7	100	mg/kg	ND	ND	ND	ND	ND	R	ND	ND
	TOTAL VOCS				0.016	0.133	0.338	0.2886	0.293	0.1589	1.256	2.39
	SEMIVOLATILES											
83-32-9	ACENAPHTHENE	20	100	mg/kg	ND	ND	ND	0.11	0.082	ND	1	0.17
120-12-7	ANTHRACENE	100	100	mg/kg	ND	ND	ND	0.19 J	0.092 J	ND	0.41	ND
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	ND	0.19	0.24	0.23	0.17	0.17	0.31	0.28
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	ND	ND	ND	0.16	0.092	ND	ND	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	ND	ND	ND	0.19	0.11	ND	0.12	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	ND	ND	ND	0.15 J	ND	ND	ND	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	0.016	**1.1**	1	**1.1**	0.73	**1.1**	**1.2**	**1.2**
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	ND	ND	ND	ND	ND	ND	0.73	0.16
206-44-0	FLUORANTHENE	100	100	mg/kg	0.011	ND	ND	0.21	0.17	0.19	0.37	ND
86-73-7	FLUORENE	30	100	mg/kg	ND	ND	ND	0.28	0.22	ND	1.6	0.33
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	ND	ND	ND	0.13 J	ND	ND	ND	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.47
85-01-8	PHENANTHRENE	100	100	mg/kg	ND	1.1	1.1	0.55	0.41	0.41	1.8	1.7
129-00-0	PYRENE	100	100	mg/kg	0.012	0.27	0.33	0.39	0.3	0.29	0.78	0.48
	TOTAL SVOCS				0.039	2.66	2.67	3.69	2.376	2.16	8.32	4.79
	PCBs											
53469-21-9	PCB-1242 (AROCLOR 1242)			mg/kg	ND	ND	ND	0.72 J	0.36 J	ND	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	0.34 J	0.14 J	ND	ND	ND	0.095	0.62
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
	TOTAL PCBs	0.1	1	mg/kg	ND	**0.34**	**0.14**	**0.72**	**0.36**	ND	0.095	**0.62**
	METALS											
7440-38-2	ARSENIC	13	16	mg/kg	ND	5.4	6	1.8	2.1	2.3	3	2.9
7440-39-3	BARIUM	350	400	mg/kg	104	76.4 J	32.7 J	80.6	89.4	63.1	39.2	53.8
7440-41-7	BERYLLIUM	7.2	72	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	23.4	8.2	7	8	8.3	7.3	6.6	8.4
7440-50-8	COPPER	50	270	mg/kg	16.3	13.8 J	**60.7 J**	14.4	12.3	11.1	7.5	10.1
7439-92-1	LEAD	63	400	mg/kg	12.1	9	10.8	16 J	8.6 J	ND	ND	6.7
7439-96-5	MANGANESE	1600	2000	mg/kg	509	183	221	194	167	150	230	163
7439-97-6	MERCURY	0.18	0.81	mg/kg	ND	ND	ND	ND	1.4	ND	ND	ND
7440-02-0	NICKEL	30	310	mg/kg	**30.7**	13	19.7	12.5	13.5	11.9	8.1	11
7782-49-2	SELENIUM	3.9	180	mg/kg	ND	2.6	2	1.5	1.6	2.3	1.8	1.9
7440-66-6	ZINC	109	10000	mg/kg	54.7	29	40.1	29.7	27.9	24.9	21.4	27.9
	OTHER											
MOIST	MOISTURE, PERCENT			%	20.4							
TSO-ALSMT	SOLIDS, PERCENT			%	79.6							
TSO-ALSRNY	SOLIDS, PERCENT			percent	72.5	77.2	76.4	84.9	81.6	75.7	70.9	86.4

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3a - Soil Sampling Data
Post Excavation Samples
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Validated Soil Analytical Data Detected Compound Summary		6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Restricted Residential SCOs	Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BM-AOC2-W7 BM-AOC2-W7 R1612968-003 10-15 ft ALSRNY R1612968 SOIL 12/8/2016 3/30/2017	BM-AOC2-W7 BM-AOC2-W7-2 R1612968-004 10-15 ft ALSRNY R1612968 SO 12/8/2016 3/30/2017	BM-AOC2-W8 BM-AOC2-W8 R1612968-006 10-15 ft ALSRNY R1612968 SOIL 12/8/2016 3/30/2017	TANK EXCAVATION-NORTH TANK EXCAVATION-NORTH R1613522-001 ALSRNY R1613522 SOIL 12/28/2016 3/29/2017
CAS NO.	COMPOUND			UNITS:				
	VOLATILES							
95-63-6	1,2,4-TRIMETHYLBENZENE	3.6	52	mg/kg	2.8	5.9	0.063 J-	ND
107-06-2	1,2-DICHLOROETHANE	0.02	3.1	mg/kg	ND	ND	ND	ND
108-67-8	1,3,5-TRIMETHYLBENZENE	8.4	52	mg/kg	0.37	0.83	ND	ND
67-64-1	ACETONE	0.05	100	mg/kg	**0.13 J-**	**0.15**	**0.081 J-**	ND
1330-20-7	XYLENES, TOTAL	0.26	100	mg/kg	**0.34**	**0.59**	ND	ND
100-41-4	ETHYLBENZENE	1	41	mg/kg	ND	ND	ND	ND
78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	0.12	100	mg/kg	ND	0.042	ND	ND
75-09-2	METHYLENE CHLORIDE	0.05	100	mg/kg	ND	ND	ND	ND
104-51-8	N-BUTYLBENZENE	12	100	mg/kg	0.66	0.56	ND	ND
103-65-1	N-PROPYLBENZENE	3.9	100	mg/kg	0.31	0.3	ND	ND
135-98-8	SEC-BUTYLBENZENE	11	100	mg/kg	0.3	0.2	ND	ND
98-06-6	T-BUTYLBENZENE	5.9	100	mg/kg	0.035 J-	ND	ND	ND
1634-04-4	TERT-BUTYL METHYL ETHER	0.93	100	mg/kg	ND	ND	ND	ND
127-18-4	TETRACHLOROETHYLENE(PCE)	1.3	19	mg/kg	ND	ND	ND	ND
108-88-3	TOLUENE	0.7	100	mg/kg	ND	ND	ND	ND
	TOTAL VOCS				4.945	8.572	0.144	ND
	SEMIVOLATILES							
83-32-9	ACENAPHTHENE	20	100	mg/kg	0.37	0.46	0.087	0.34
120-12-7	ANTHRACENE	100	100	mg/kg	0.37	0.31	0.18	0.1
56-55-3	BENZO(A)ANTHRACENE	1	1	mg/kg	0.91	0.9	0.52	ND
50-32-8	BENZO(A)PYRENE	1	1	mg/kg	ND	ND	0.43	ND
205-99-2	BENZO(B)FLUORANTHENE	1	1	mg/kg	0.32	0.26	0.51	ND
191-24-2	BENZO(G,H,I)PERYLENE	100	100	mg/kg	ND	ND	0.3	ND
207-08-9	BENZO(K)FLUORANTHENE	0.8	3.9	mg/kg	ND	ND	0.17	ND
218-01-9	CHRYSENE	1	3.9	mg/kg	**2.3**	**2.5**	0.79	0.17
53-70-3	DIBENZ(A,H)ANTHRACENE	0.33	0.33	mg/kg	ND	ND	0.085	ND
132-64-9	DIBENZOFURAN	7	59	mg/kg	0.46	0.6	0.1	0.22
206-44-0	FLUORANTHENE	100	100	mg/kg	0.83	0.62	0.82	0.043
86-73-7	FLUORENE	30	100	mg/kg	0.89	1.1	0.21	0.44
193-39-5	INDENO(1,2,3-C,D)PYRENE	0.5	0.5	mg/kg	ND	ND	0.31	ND
91-20-3	NAPHTHALENE	12	100	mg/kg	1.8	3.9	0.23	0.38
85-01-8	PHENANTHRENE	100	100	mg/kg	3	3.7	0.87	1
129-00-0	PYRENE	100	100	mg/kg	1.4	1.2	0.81	0.11
	TOTAL SVOCS				12.65	15.55	6.422	2.803
	PCBs							
53469-21-9	PCB-1242 (AROCLOR 1242)			mg/kg	ND	ND	ND	
12672-29-6	PCB-1248 (AROCLOR 1248)			mg/kg	ND	ND	ND	
11097-69-1	PCB-1254 (AROCLOR 1254)			mg/kg	ND	0.3	0.1	
	TOTAL PCBs	0.1	1	mg/kg	ND	**0.3**	0.1	
	METALS							
7440-38-2	ARSENIC	13	16	mg/kg	2.8	2.8	3	
7440-39-3	BARIUM	350	400	mg/kg	100	106	70.1	
7440-41-7	BERYLLIUM	7.2	72	mg/kg	ND	ND	ND	
7440-43-9	CADMIUM	2.5	4.3	mg/kg	ND	ND	ND	
7440-47-3	CHROMIUM, TOTAL	30	180	mg/kg	7.7	8.2	9.2	
7440-50-8	COPPER	50	270	mg/kg	10.6	13.5	12.6	
7439-92-1	LEAD	63	400	mg/kg	16.1	21.9	13.3	
7439-96-5	MANGANESE	1600	2000	mg/kg	233	206	166	
7439-97-6	MERCURY	0.18	0.81	mg/kg	ND	ND	ND	
7440-02-0	NICKEL	30	310	mg/kg	9.8	10.7	12	
7782-49-2	SELENIUM	3.9	180	mg/kg	ND	2	2.1	
7440-66-6	ZINC	109	10000	mg/kg	27.9	37.1	35.2	
	OTHER							
MOIST	MOISTURE, PERCENT			%				
TSO-ALSMT	SOLIDS, PERCENT			%				
TSO-ALSRNY	SOLIDS, PERCENT			percent	70.8	77.8	75.3	86.3

Notes:

	Indicates concentration exceeds Restricted Residential SCO
1	Bold values indicate concentration exceeds Unrestricted Use SCO
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 3b - Wipe Sampling Results
Remedial Performance and Documentation Sampling Results
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing 2016 Site Investigation Validated Soil Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled:	EXWIPE-101416-20161014 EXWIPE-101416-20161014 480-107745-1 TALBUFF 4801077451 WIPE 10/14/16 10:54	WIPE 2-10/25/16 WIPE 2-10/25/16 480-1089398-1 TALBUFF 48010893981 WIPE 10/25/16 9:36
CAS NO.	COMPOUND	UNITS:		
	PCBs			
12674-11-2	PCB-1016 (AROCLOR 1016)	ug/100cm2	ND	ND
11104-28-2	PCB-1221 (AROCLOR 1221)	ug/100cm2	ND	ND
11141-16-5	PCB-1232 (AROCLOR 1232)	ug/100cm2	ND	ND
53469-21-9	PCB-1242 (AROCLOR 1242)	ug/100cm2	ND	ND
12672-29-6	PCB-1248 (AROCLOR 1248)	ug/100cm2	ND	ND
11097-69-1	PCB-1254 (AROCLOR 1254)	ug/100cm2	ND	ND
11096-82-5	PCB-1260 (AROCLOR 1260)	ug/100cm2	ND	ND
37324-23-5	PCB-1262 (AROCLOR 1262)	ug/100cm2	ND	ND
11100-14-4	PCB-1268 (AROCLOR 1268)	ug/100cm2	ND	ND

Notes:

	Indicates concentration exceeds standard or guidance value.
ND	Non-detect
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/100cm2	Micrograms per 100 square centimeters

Table 3c - Asbestos Air Sampling Results
Remedial Performance and Documentation Sampling Results
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing	Location ID:	OUTSIDE	OUTSIDE	INSIDE	OUTSIDE
Detected Compound Summary	Sample ID:	B1221-01	B1221-02	B1221-03	B1221-04
	Lab Sample Id:	57211	57212	57213	57214
	Avg Flow (L/min):	4.0	3.9	4.0	4.5
	Source:	HSE	HSE	HSE	HSE
	Batch #:	6958	6958	6958	6958
	Matrix:	B	B	B	B
	Sampled:	12/21/2016	12/21/2016	12/21/2016	12/21/2016
	UNITS:				
Total Volume	Liters	1008	982.8	1008	1080
Fiber Density on Filter	f/mm2	<7.0	SD	<7.0	<7.0
Fiber Density in Air	f/cc	<0.003	SD	<0.003	<0.003

Notes:
* 12/21/16 samples are pre-abatement and 12/27/16 samples are post-abatement
f/mm2 - Fibers Per Square Millimeter
f/cc - Fibers Per Cubic Centimeter
B - Background
FB - Field Blank
N/A - Not Applicable
SD - Sample Damaged, Unable to Analyze

Table 3c - Asbestos Air Sampling Results
Remedial Performance and Documentation Sampling Results
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing	Location ID:	OUTSIDE	OUTSIDE	BLANK	BLANK	OUTSIDE W.A.	INSIDE W.A.
Detected Compound Summary	Sample ID:	B1221-05	B1221-06	B1221-07	B1221-08	B1227-01	B1227-02
	Lab Sample Id:	57215	57216	57217	57218	57274	57275
	Avg Flow (L/min):	4.5	4.0	-	-	4.0	4.0
	Source:	HSE	HSE	HSE	HSE	HSE	HSE
	Batch #:	6958	6958	6958	6958	6968	6968
	Matrix:	B	B	FB	FB	C	C
	Sampled:	12/21/2016	12/21/2016	12/21/2016	12/21/2016	12/27/2016	12/27/2016
	UNITS:						
Total Volume	Liters	1080	960	N/A	N/A	968	968
Fiber Density on Filter	f/mm2	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0
Fiber Density in Air	f/cc	<0.003	<0.003	N/A	N/A	<0.003	<0.003

Notes:
* 12/21/16 samples are pre-abatement and 12/27/16 samples are post-a
f/mm2 - Fibers Per Square Millimeter
f/cc - Fibers Per Cubic Centimeter
B - Background
FB - Field Blank
N/A - Not Applicable
SD - Sample Damaged, Unable to Analyze

Table 3c - Asbestos Air Sampling Results
Remedial Performance and Documentation Sampling Results
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing	Location ID:	OUTSIDE W.A.	OUTSIDE W.A.	OUTSIDE W.A.	OUTSIDE W.A.	BLANK	BLANK
Detected Compound Summary	Sample ID:	B1227-03	B1227-04	B1227-05	B1227-06	B1227-07	B1227-08
	Lab Sample Id:	57276	57277	57278	57279	57280	57281
	Avg Flow (L/min):	4.0	4.0	4.0	4.0	-	-
	Source:	HSE	HSE	HSE	HSE	HSE	HSE
	Batch #:	6968	6968	6968	6968	6968	6968
	Matrix:	C	C	C	C	FB	FB
	Sampled:	12/27/2016	12/27/2016	12/27/2016	12/27/2016	12/27/2016	12/27/2016
	UNITS:						
Total Volume	Liters	968	968	968	968	N/A	N/A
Fiber Density on Filter	f/mm2	11.1	<7.0	<7.0	7.9	<7.0	<7.0
Fiber Density in Air	f/cc	0.004	<0.003	<0.003	0.003	N/A	N/A

Notes:
* 12/21/16 samples are pre-abatement and 12/27/16 samples are post-a
f/mm2 - Fibers Per Square Millimeter
f/cc - Fibers Per Cubic Centimeter
B - Background
FB - Field Blank
N/A - Not Applicable
SD - Sample Damaged, Unable to Analyze

Table 3d - Groundwater Sampling Data
Remedial Performance and Documentation Sampling Results
Former Brown Manufacturing

NYSDEC-Former Brown Manufacturing Groundwater Analytical Data SDG: 480-127906-1		NYSDEC Ambient Water Quality Class GA Groundwater Standards	Location ID: Sample ID: Lab Sample Id Depth: Source: SDG: Matrix: Sampled: Validated:	MW-1 MW-1-20171121 480-127906-3 - TALBUFF 4801279061 WATER 11/21/2017	MW-1-DUP MW-1-DUP-20171121 480-127906-5 - TALBUFF 4801279061 WATER 11/21/2017	MW-2 MW-2-20171121 480-127906-4 - TALBUFF 4801279061 WATER 11/21/2017	MW-3R MW-3R-20171121 480-127906-1 - TALBUFF 4801279061 WATER 11/21/2017	MW-4R MW-4R-20171121 480-127906-2 - TALBUFF 4801279061 WATER 11/21/2017	FIELDQC TRIP BLANK-20171121 480-127906-6 - TALED 4801279061 WQ 11/21/2017
CAS NO.	COMPOUND		UNITS:						
	VOLATILES								
67-64-1	Acetone	50	ug/l	1.6 J	ND	1.7 J	1.9 J	3 J	ND
67-66-3	Chloroform	7	ug/l	ND	ND	11	ND	ND	ND
108-88-3	Toluene	5	ug/l	0.45 J	0.59 J	ND	ND	ND	ND
	SEMIVOLATILES								
	None Detected								
	PCBs								
	None Detected								

Notes:

	Indicates concentration exceeds standard or guidance value.
ND	Non-detect
NS	No standard or guidance value available.
J	Indicates an estimated concentration.
N	Indicates presumptive evidence of the concentration.
ug/l	Micrograms per liter
mg/l	Milligrams per liter

Table 4 - Analytical Results for Imported Material
Former Brown Manufacturing
Final Engineering Report

NYSDEC-Former Brown Manufacturing Validated Borrowed Soil Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BS-RIC-01 BS-RIC-01 R1610173-012 - ALSRNY R1610173 SOIL 9/23/2016 13:00 3/29/2017	BS-RIC-02 BS-RIC-02 R1610173-013 - ALSRNY R1610173 SOIL 9/23/2016 13:05 3/29/2017	BS-RIC-03 BS-RIC-03 R1610173-014 - ALSRNY R1610173 SOIL 9/23/2016 13:10 3/29/2017	BS-RIC-04 BS-RIC-04 R1610173-015 - ALSRNY R1610173 SOIL 9/23/2016 13:15 3/29/2017	BS-RIC-05 BS-RIC-05 R1610173-016 - ALSRNY R1610173 SOIL 9/23/2016 13:20 3/29/2017	BS-RIC-06 BS-RIC-06 R1610173-017 - ALSRNY R1610173 SOIL 9/23/2016 13:25 3/29/2017	BS-RIC-07 BS-RIC-07 R1610173-018 - ALSRNY R1610173 SOIL 9/23/2016 13:30 3/29/2017	BS-VIT-01 BS-VIT-01 R1610173-001 - ALSRNY R1610173 SOIL 9/23/2016 10:30 3/29/2017
CAS NO.	COMPOUND	UNITS:								
	VOLATILES									
67-64-1	ACETONE	ug/kg	ND	7.7	ND	94	14	ND	ND	ND
	SEMIVOLATILES									
	NONE Detected									
	PESTICIDES									
	NONE Detected									
	PCBs									
	NONE Detected									
	HERBICIDES									
	NONE Detected									
	METALS									
7440-38-2	ARSENIC	mg/kg	1.1	ND						ND
7440-39-3	BARIUM	mg/kg	20.9	21.3						26.1
16065-83-1	CHROMIUM III	mg/kg	5.9	5.8						5.5
7440-47-3	CHROMIUM, TOTAL	mg/kg	6	5.8						5.7
7440-50-8	COPPER	mg/kg	4.9	4.3						13.2
7439-92-1	LEAD	mg/kg	5.6	5.5						ND
7439-96-5	MANGANESE	mg/kg	502	529						537
7440-02-0	NICKEL	mg/kg	4.5	4.6						6.3
7782-49-2	SELENIUM	mg/kg	1.3	1.2						1.7
7440-66-6	ZINC	mg/kg	14.3	14.8						17.2
57-12-5	CYANIDE	mg/kg	0.12	0.15						ND
	OTHER									
TSO	SOLIDS, PERCENT	percent	89.1	91.3	81.2	92.1	91.8	84.7	78.6	95.4

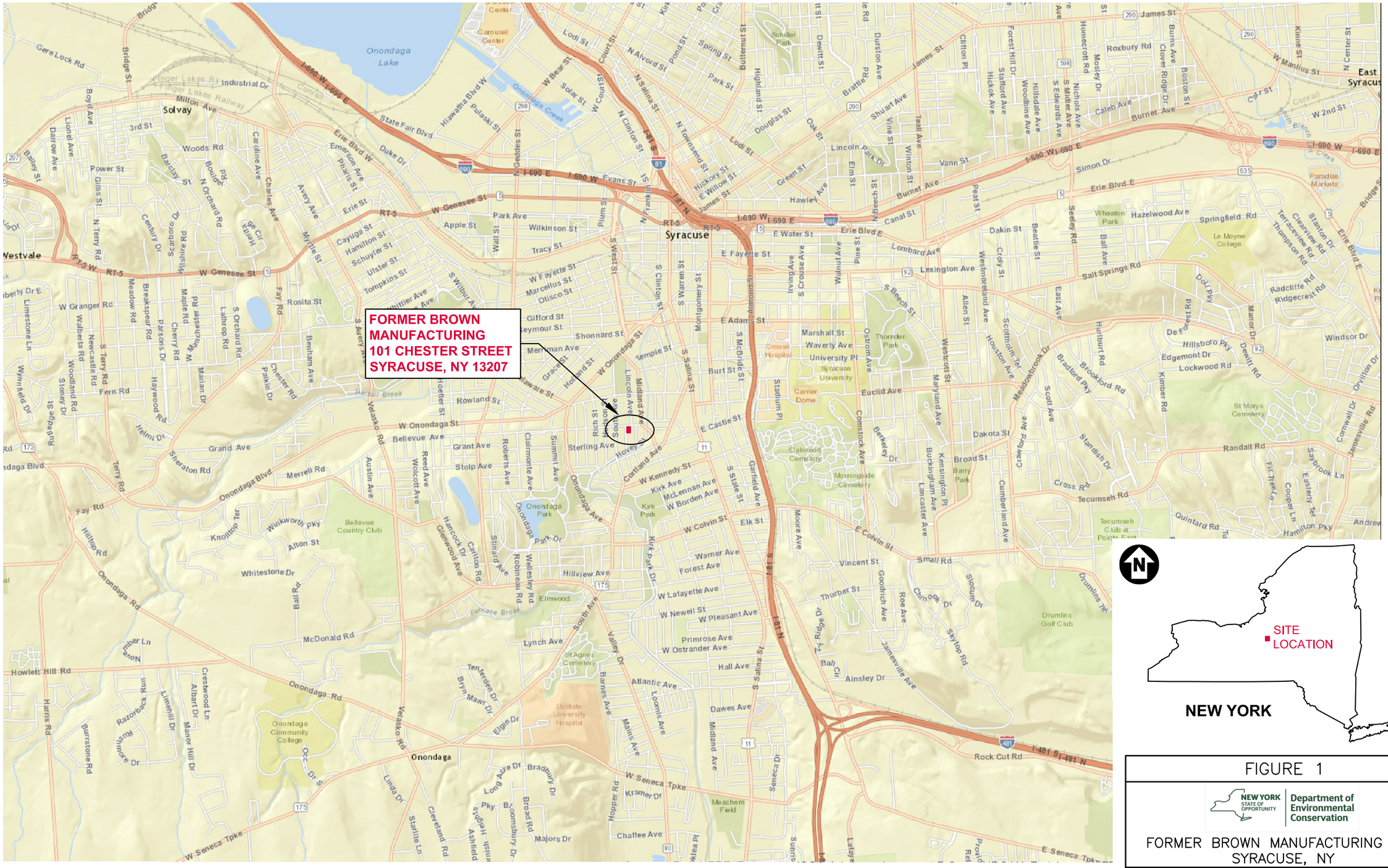
Table 4 - Analytical Results for Imported Material
Former Brown Manufacturing
Final Engineering Report

NYSDEC-Former Brown Manufacturing Validated Borrowed Soil Analytical Data Detected Compound Summary		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	BS-VIT-02 BS-VIT-02 R1610173-002 - ALSRNY R1610173 SOIL 9/23/2016 10:35 3/29/2017	BS-VIT-03 BS-VIT-03 R1610173-003 - ALSRNY R1610173 SOIL 9/23/2016 10:40 3/29/2017	BS-VIT-04 BS-VIT-04 R1610173-004 - ALSRNY R1610173 SOIL 9/23/2016 10:45 3/29/2017	BS-VIT-05 BS-VIT-05 R1610173-005 - ALSRNY R1610173 SOIL 9/23/2016 10:50 3/29/2017	BS-VIT-06 BS-VIT-06 R1610173-006 - ALSRNY R1610173 SOIL 9/23/2016 10:55 3/29/2017	BS-VIT-07 BS-VIT-07 R1610173-007 - ALSRNY R1610173 SOIL 9/23/2016 11:00 3/29/2017	BS-VIT-08 BS-VIT-08 R1610173-008 - ALSRNY R1610173 SOIL 9/23/2016 11:05 3/29/2017	BS-VIT-09 BS-VIT-09 R1610173-009 - ALSRNY R1610173 SOIL 9/23/2016 11:10 3/29/2017	BS-VIT-11 BS-VIT-11 R1610173-011 - ALSRNY R1610173 SOIL 9/23/2016 11:20 3/29/2017
CAS NO.	COMPOUND	UNITS:									
	VOLATILES										
67-64-1	ACETONE	ug/kg	ND	20	15	6.9	130	ND	25	46	ND
	SEMIVOLATILES										
	NONE Detected										
	PESTICIDES										
	NONE Detected										
	PCBs										
	NONE Detected										
	HERBICIDES										
	NONE Detected										
	METALS										
7440-38-2	ARSENIC	mg/kg	1.8	1.5	1.6						
7440-39-3	BARIUM	mg/kg	47	39.4	45						
16065-83-1	CHROMIUM III	mg/kg	8.3	7.2	6.9						
7440-47-3	CHROMIUM, TOTAL	mg/kg	8.5	7.4	7.1						
7440-50-8	COPPER	mg/kg	19.5	16.1	17.4						
7439-92-1	LEAD	mg/kg	ND	ND	ND						
7439-96-5	MANGANESE	mg/kg	857	695	702						
7440-02-0	NICKEL	mg/kg	9	7.6	8						
7782-49-2	SELENIUM	mg/kg	1.5	1.3	1.1						
7440-66-6	ZINC	mg/kg	23.6	20.1	21.4						
57-12-5	CYANIDE	mg/kg	ND	ND	ND						
	OTHER										
TSO	SOLIDS, PERCENT	percent	81.6	97.1	93.2	92.4	85.4	86.3	81.6	87.6	89.9

Table 5
Backfill Quantities and Sources
Former Brown Manufacturing

Hauler	Source	Backfill Type	Amount	Unit
Cranesville Block Company	Tully, NY	Crushed Stone Subbase Minus 2"	609.38	tons
Cranesville Block Company	Tully, NY	Coarse Stone #2 Gravel	74.81	tons
Vitale Ready-Mix Concrete, Inc.	Auburn, NY	Fill/Cover Sand	4588.2	tons
Riccelli Enterprises, Inc.	Panther Lake, NY	Topsoil	720	cubic yards
Riccelli Enterprises, Inc.	Devoe Rd, Camillus, NY	Topsoil	252	cubic yards

FIGURES



3000 1500 0 3000 6000

SCALE: 1"=3000'

FIGURE 1

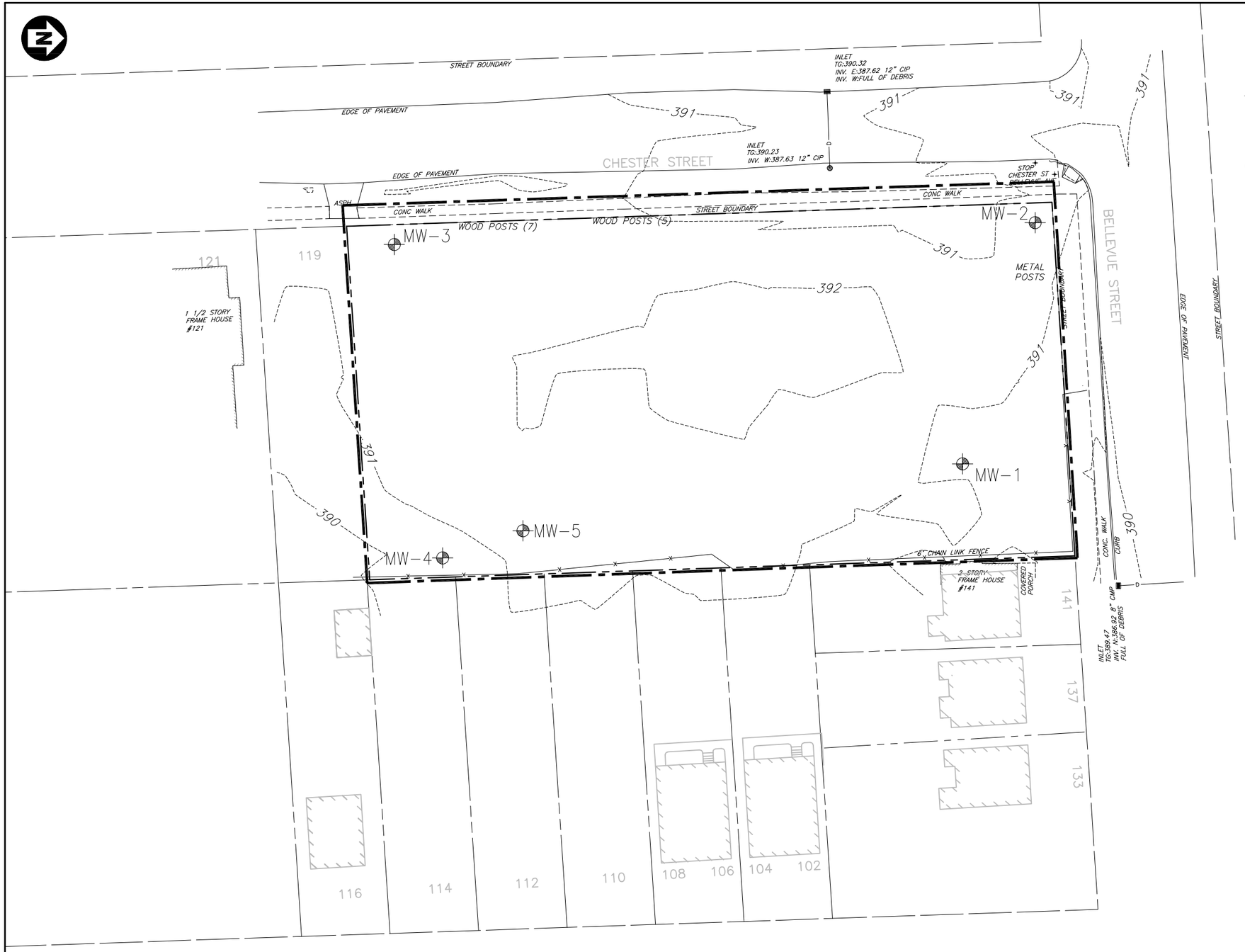
NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

SITE LOCATION MAP

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 • 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 – WA #22 – FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SK001-SITE MAP.DWG
PLOT DATE: 1/25/2018 8:42 AM PLOTTED BY: GOLDTHWAIT, JAMES



LEGEND:

- MW-2 ⊕ MONITORING WELL
- PROPERTY LINE
- 391 EXISTING CONTOURS
- SITE BOUNDARY

40 20 0 40 80

SCALE: 1"=40'

FIGURE 2

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

PRE-REMEDIATION
SITE CONDITIONS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 - WA #22 - FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
PLOT DATE: 4/26/2018 12:03 PM PLOTTED BY: GOLDTHWAIT, JAMES

LEGEND:

MW-2 ⊕ MONITORING WELL

PROPERTY LINE

TP-04 ✕ PDI TEST PIT LOCATION

SITE BOUNDARY

STREET BOUNDARY

EDGE OF PAVEMENT

INLET
TG:390.32
INV. E:387.62 12" CIP
INV. W:FULL OF DEBRIS

INLET
TG:390.23
INV. W:387.63 12" CIP

CHESTER STREET

EDGE OF PAVEMENT

STOP
CHESTER ST
BELLEVUE AVE

ASPH

CONC WALK

STREET BOUNDARY

CONC WALK

MW-2

MW-3R

BELLEVUE STREET

SHEET BOUNDARY

121

119

1 1/2 STORY
FRAME HOUSE
#121

TP-04

TP-03

TP-01

TP-02

TP-07

TP-05

TP-06

TP-09

TP-08

MW-1

TP-10

MW-4R

TP-11

TP-12

6' CHAIN LINK FENCE

2 STORY
FRAME HOUSE
#141

COVERED
PORCH

TP-13

141

137

133

TP-14

EDGE OF PAVEMENT

STREET BOUNDARY

CONC. WALK

CURB

INLET
TG:389.47
INV: N:386.92 8" CMP
FULL OF DEBRIS

116

114

112

110

108

106

104

102

40 20 0 40 80

SCALE: 1"=40'

FIGURE 3

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

WASTE CHARACTERIZATION SAMPLE LOCATIONS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 – WA #22 – FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
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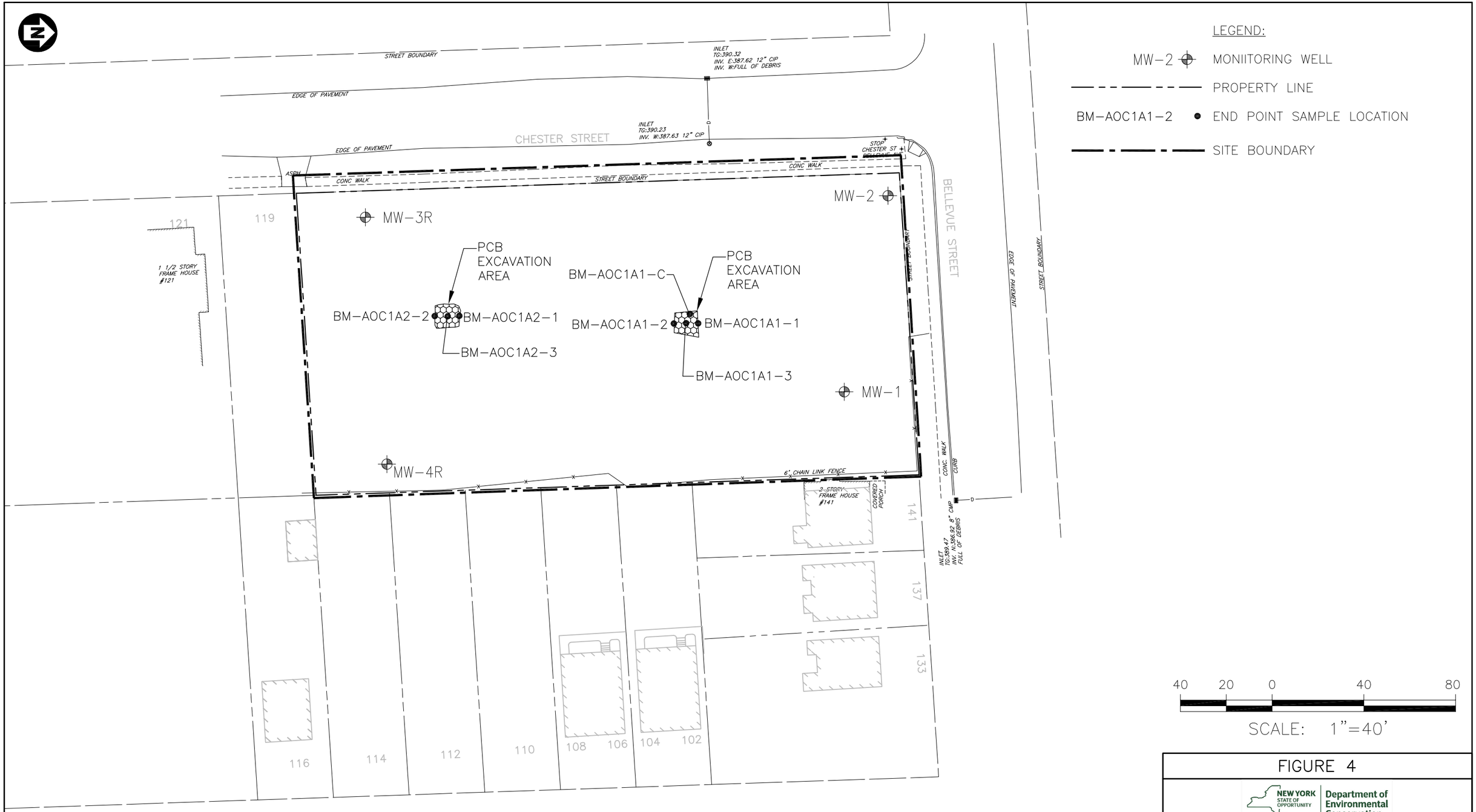

LEGEND:

MW-2 ⊕ MONIITORING WELL

PROPERTY LINE

BM-AOC1A1-2 ● END POINT SAMPLE LOCATION

SITE BOUNDARY

40 20 0 40 80

SCALE: 1"=40'

FIGURE 4

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

PCB CONTAMINATED SOIL EXCAVATION

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 - WA #22 - FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
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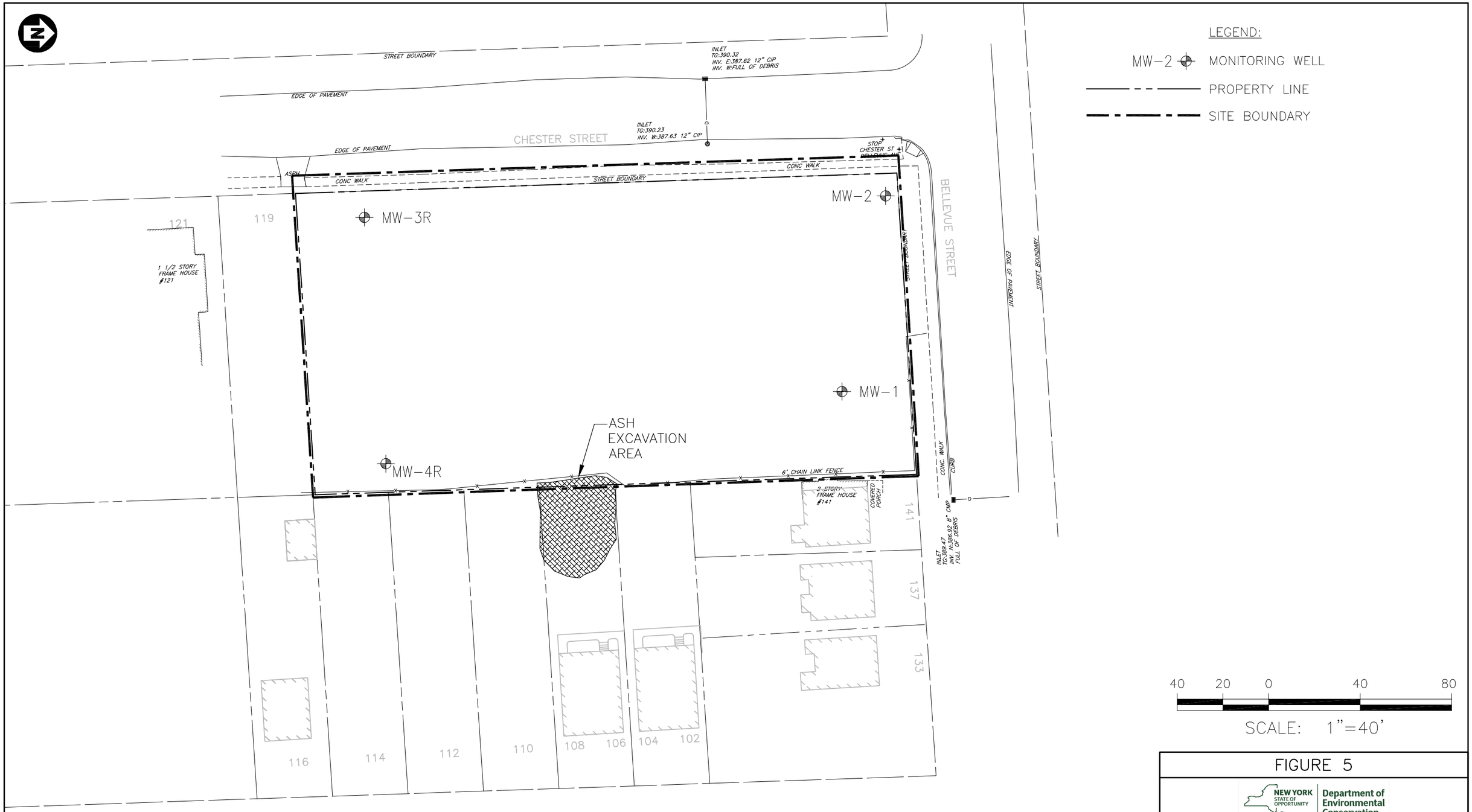

FIGURE 5

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

ASH EXCAVATION

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 – WA #22 – FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
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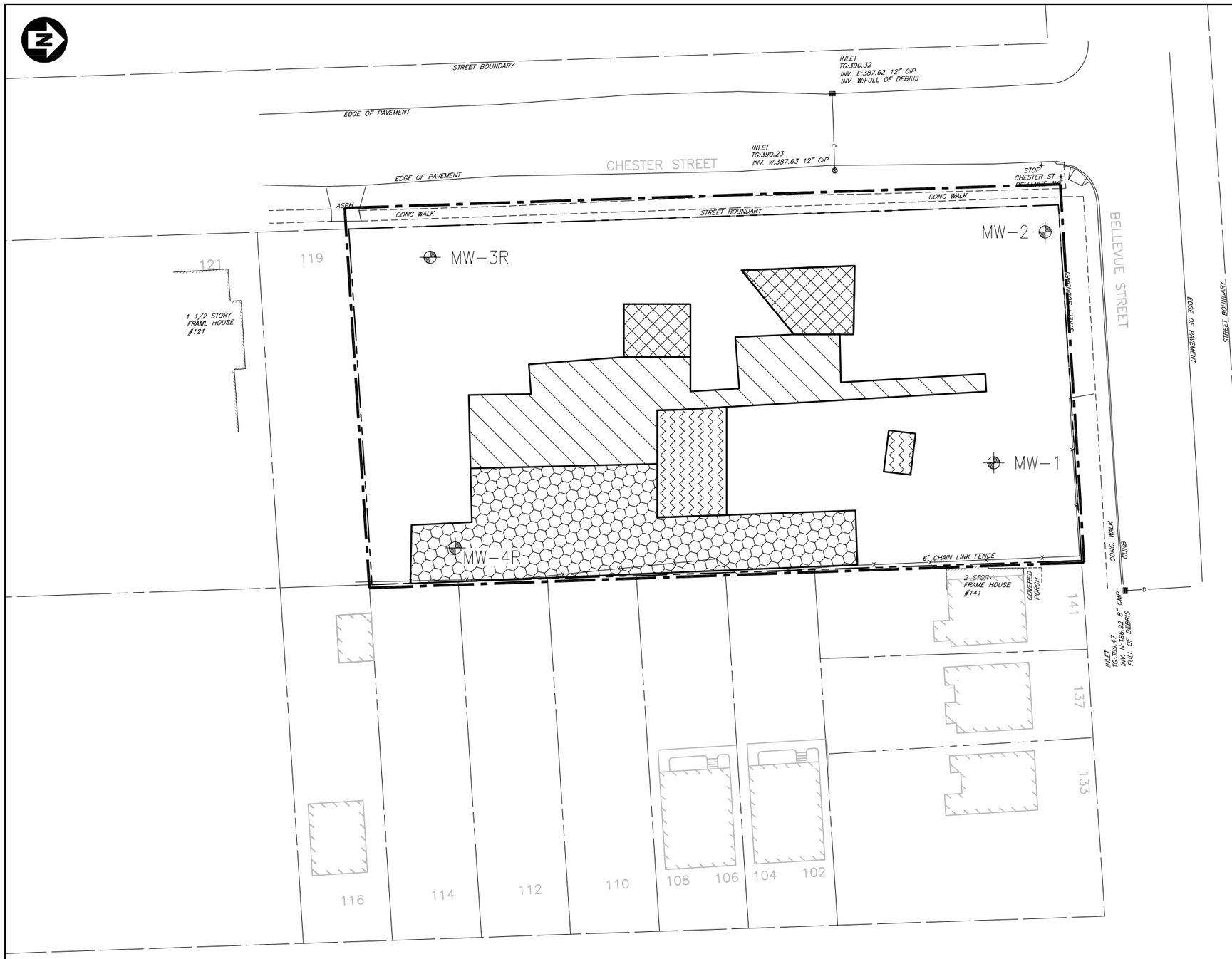

LEGEND:

- MW-2 — MONITORING WELL
- PROPERTY LINE
- SITE BOUNDARY
- AOC1B PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~0-8 FT
- AOC2 PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~6-15 FT
- UST EXCAVATION AREA OFF-SITE DISPOSAL FROM ~0-15 FT
- AOC2 PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~9-15 FT

40 20 0 40 80

SCALE: 1"=40'

FIGURE 6

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

UST LOCATION AND PETROLEUM CONTAMINATED SOIL EXCAVATIONS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 - WA #22 - FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
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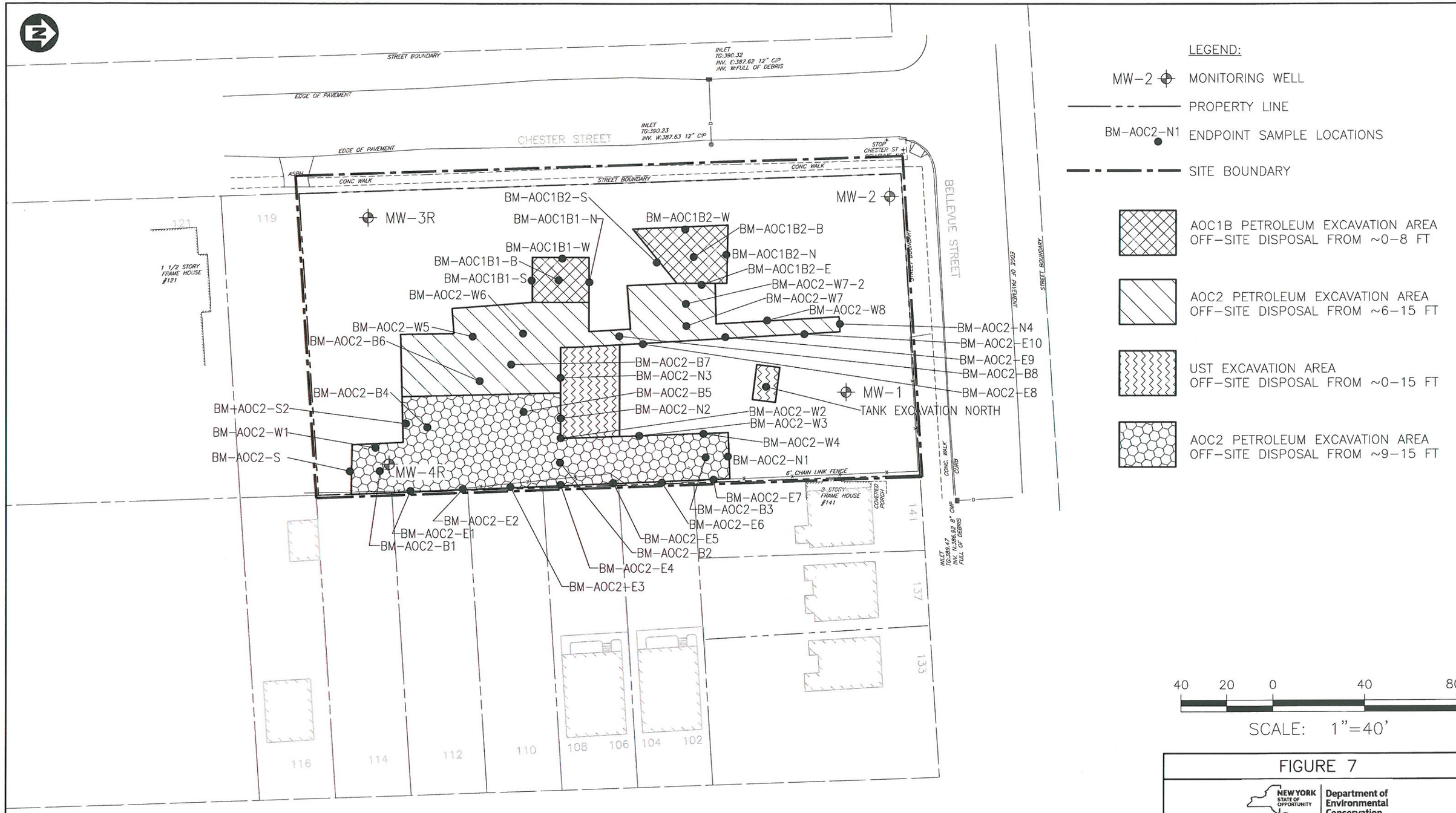

LEGEND:

- MW-2 — MONITORING WELL
- PROPERTY LINE
- BM-AOC2-N1 — ENDPOINT SAMPLE LOCATIONS
- SITE BOUNDARY
- AOC1B PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~0-8 FT
- AOC2 PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~6-15 FT
- UST EXCAVATION AREA OFF-SITE DISPOSAL FROM ~0-15 FT
- AOC2 PETROLEUM EXCAVATION AREA OFF-SITE DISPOSAL FROM ~9-15 FT

40 20 0 40 80

SCALE: 1"=40'

FIGURE 7

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

ENDPOINT SAMPLING LOCATIONS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 - WA #22 - FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
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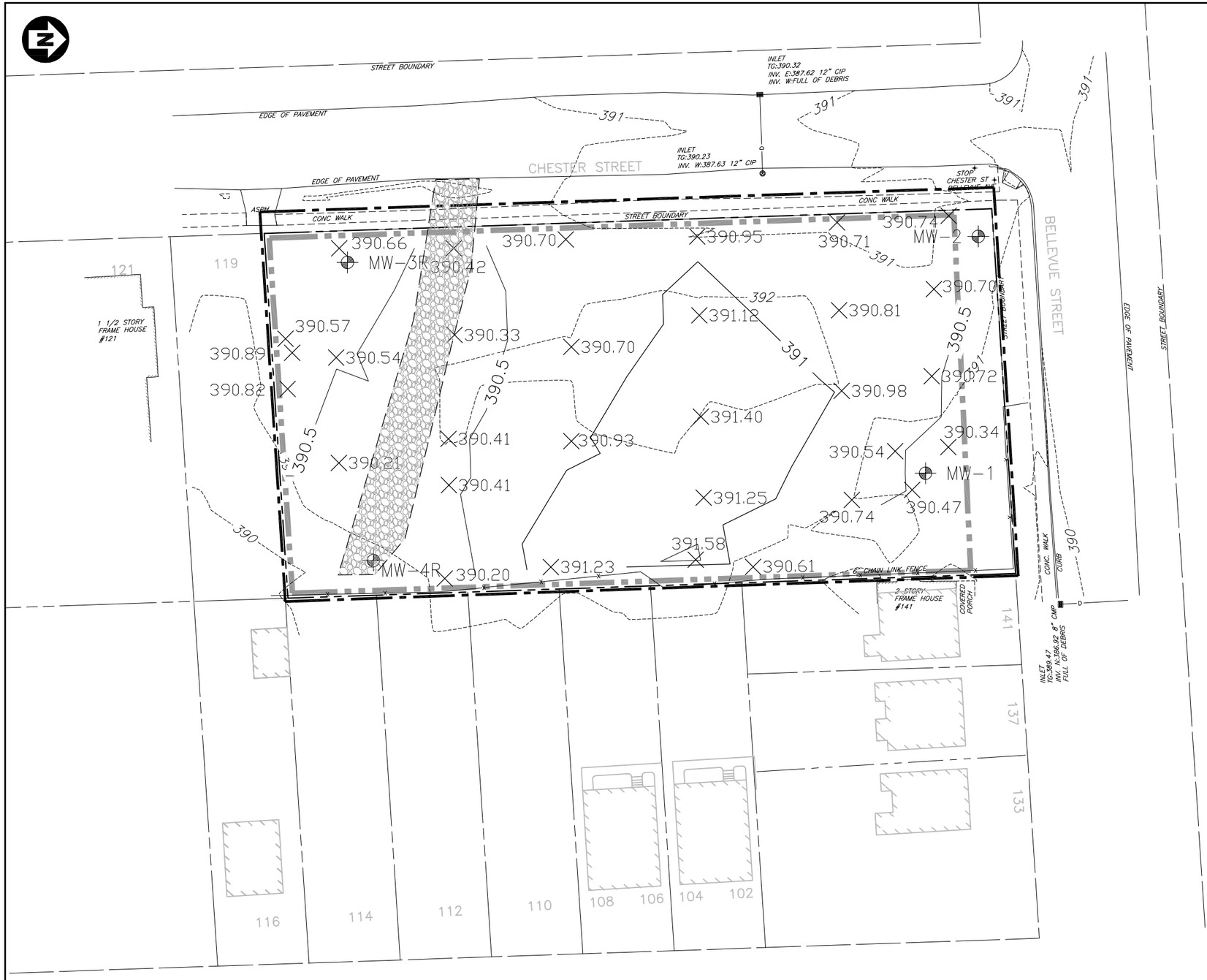
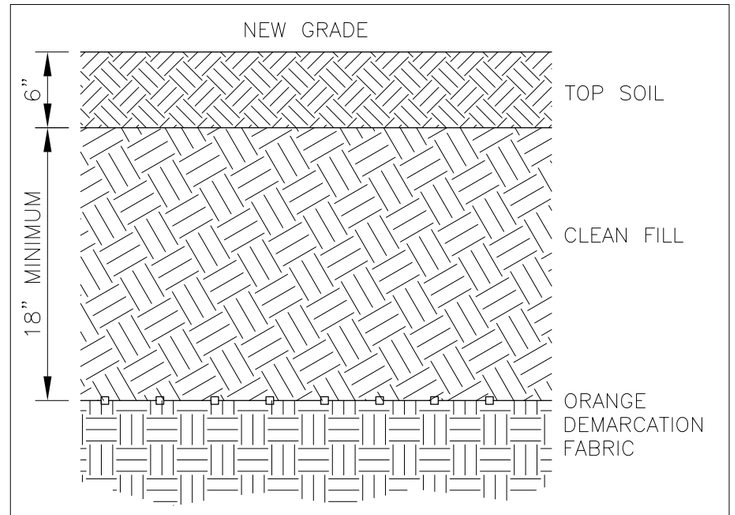


LEGEND:

- MW-2 — MONITORING WELL
- PROPERTY LINE
- 390.71 — FINAL GRADE POINT ELEVATION
- 391 — FINAL GRADE CONTOUR
- COVER SYSTEM BOUNDARY
- SITE COVER IN THIS AREA IS STONE FROM DEMARCATION FABRIC TO 6" BELOW TOPSOIL
- SITE BOUNDARY



RESTORATION DETAIL
NOT TO SCALE

40 20 0 40 80

SCALE: 1"=40'

FIGURE 8

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FORMER BROWN MANUFACTURING SITE
SYRACUSE, NY

SITE COVER SYSTEM AND RESTORATION

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\449486 – WA #22 – FORMER BROWN MANUFACTURING RD-RA\10.0 TECHNICAL CATEGORIES\CAD\449486-SURVEY-SK009-SITE MAP.DWG
PLOT DATE: 4/26/2018 12:14 PM PLOTTED BY: GOLDTHWAIT, JAMES

APPENDICES