May 19, 2014

Mr. Timothy Dieffenbach
Engineering Geologist 2
Division of Environmental Remediation
NYS Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203

Subject **Transmittal of the Alternatives Analysis Report**
Tract I Site (Site No. C932157)
Niagara Falls, New York
Amec Project No. 3410130921

Dear Mr. Dieffenbach:

Enclosed, please find two hard copies of the Alternatives Analysis Report (AAR) dated May 19, 2014 for the Tract I Site (Site No. C932157) located at 3123 Highland Avenue in the City of Niagara Falls, New York for your approval. This AAR was prepared to evaluate the potential remedial options for the Tract I Site.

If you have any questions regarding this submittal, please feel free to contact me at (412) 279-6661 or via email at robert.crowley@amec.com.

Respectfully Submitted,

Amec Environment & Infrastructure, Inc.

Robert E. Crowley
Senior Principal Scientist/Project Manager

cc: Matt Forcucci – (NYSDOH) – Hard Copy
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Rich Galloway (Honeywell) – Electronic Copy
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Enclosures

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ALTERNATIVES ANALYSIS REPORT

TRACT I SITE
3123 HIGHLAND AVENUE
NIAGARA FALLS, NIAGARA COUNTY, NEW YORK
SITE NO. C932157

SUBMITTED TO:

THE NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

Prepared for:

BRIGHTFIELDS, Inc.
333 Ganson Street
Buffalo, New York 14203

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Project 3410130921
May 2014

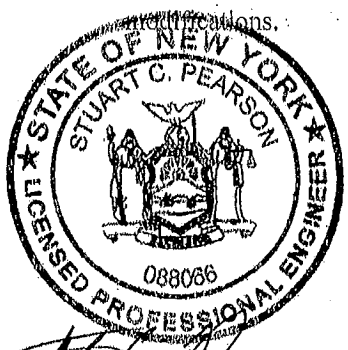
ALTERNATIVES ANALYSIS REPORT

TRACT I SITE
3123 HIGHLAND AVENUE
NIAGARA FALLS, NIAGARA COUNTY, NEW YORK
SITE NO. C932157

Prepared for:
BRIGHTFIELDS, Inc.
333 Ganson Street
Buffalo, New York 14203

Robert E. Crowley
Senior Principal Scientist

I certify that I am currently a New York State registered professional engineer as defined in 6 NYCRR Part 375 and that this Alternatives Analysis Report, was prepared in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



Stuart C. Pearson, P.E.
Principal Engineer (Mactec Engineering and Consulting, P.C.)
May 19, 2014

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ACRONYMS

AAR	Alternatives Analysis Report
ACL	Allowable Constituent Levels
Amec	Amec Environment & Infrastructure, Inc.
BCP	Brownfield Cleanup Program
Brightfields	Brightfields, Inc.
City	City of Niagara Falls, New York
CRIR	Consolidated Remedial Investigation Report
EA	EA Engineering, P.C.
E&E	Ecology & Environment, Inc.
ERP	Environmental Restoration Program
FER	Final Engineering Report
ft/ft	Feet per foot
ft-amsl	Feet above mean sea level
ft/sec	Feet per second
ft^2	Square feet
IRM	Interim Remedial Measure
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
NYSDEC	New York State Department of Environmental Conservation
NYWQS	New York Water Quality Standard
OSC	Ontario Specialty Contracting, Inc.
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCW	Power City Warehouse
PID	Photo Ionization Detector
ppm	Parts per million
PRR	Periodic Review Report
ROD	Record of Decision
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
SI	Site Investigation
Site	Tract I Site
SRI	Supplemental Remedial Investigation
SRIR	Supplemental Remedial Investigation Report
SRIWP	Supplemental Remedial Investigation Work Plan
SVOCs	Semi volatile Organic Compounds
TCE	Trichloroethene

TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TENORM	Technologically Enhanced Naturally Occurring Radioactive Material
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
WP	Work Plan

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (Amec) has prepared this Alternatives Analysis Report (AAR) on behalf of Brightfields, Inc. (Brightfields) for the Tract I Site (Site) located at 3123 Highland Avenue, in the City of Niagara Falls (City), Niagara County, New York. The Site has been designated as site number C932157 by the New York State Department of Environmental Conservation (NYSDEC). A Site location map is shown on **Figure 1** and a plan view overlain on an aerial photograph is shown on **Figure 2**. The NYSDEC Fact Sheet for the Site has been included as **Appendix A**. Adjacent to the Site, to the south and east, is the Tract II property, which is being addressed under the State of New York Inactive Hazardous Waste Site program (site ID No. 932136).

The local community and the City have endeavored to redevelop both the Site and the Tract II property since closure of the industrial facilities in the early 1970's. In order to support a viable redevelopment on the Tract II property, Brightfields s elected to remediate and redevelop the Site (Tract I property) under the New York State Brownfield Cleanup Program (BCP). Brightfields intends to redevelop the Site for commercial use. The economic feasibility of the project is directly linked to achieving a cost-effective remedy, capable of meeting the Site remedial objectives.

This document summarizes the current Site conditions to develop and evaluate potential remedial alternatives relative to the established remedial objectives and the threshold and primary balancing criteria, as defined in NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10). The AAR recommends the remedy that best achieves protectiveness and balances public acceptance, technical practicability, and cost. The remediation is intended to foster Site redevelopment, and components of the redevelopment could potentially satisfy some of the remedial objectives.

During 2012 and working through 2013, Brightfields demolished the abandoned and deteriorated Site buildings. Exposed areas on the Site containing soil with pollutants exceeding the NYSDEC commercial use Soil Cleanup Objectives (SCOs) were remediated under Interim Remedial Measures (IRMs). The Site soil currently meets the Part 375 SCOs for commercial use, and portions of the Site also meet the restricted residential SCOs.

1.1 LOCATION AND HISTORY

The Site was the location of a former lead/acid battery plant from 1910 to the late 1980s, at which time it was abandoned. Brightfields purchased the Site from the City of Niagara Falls in 2012.

The Site soil and groundwater were characterized in four field characterization phases, which were completed between 1999 and 2013 by the NYSDEC and Amec. Between 2009 and 2010, an emergency removal action was conducted by the United States Environmental Protection Agency (USEPA) to remove accessible hazardous materials from inside the abandoned building.

The Site is located in a multi-use area of the City comprised of industrial, commercial, and residential properties, and consists of approximately 5.9 acres located east of Highland Avenue, north and west of the Tract II site, and south of the active Tulip Corporation property (shown in insert). The Site was first developed in approximately 1910 as the Power City Warehouse (PCW), a battery manufacturing facility for U.S. Light and Heat Co., and later Autolite Co. The facility was acquired by Prestolite Co. in the 1960s for the manufacture of hard rubber battery cases along with battery filling and charging. Battery assembly activities ceased in the 1970s and the Site was used as a warehouse and automotive body shop until the 1980s. By the late 1980s, the Site had been abandoned and various portions were in disrepair. At that time, the City acquired the property via tax foreclosure.

Site Layout on Aerial Photograph

The former PCW building was a three-story masonry structure with a small basement area beneath one portion of the building. The building footprint covered approximately 3.3 acres of the Site. The majority of the structure was constructed on concrete floors approximately six-inches thick. The concrete floors were in good condition with no major cracking or deterioration (EA Engineering, P.C. [EA], 2009); however, the building was apparently constructed in successive progression to the east, and the eastern portion was constructed on fill material. Several areas of the PCW concrete floor were overlain with brick, with drains and sumps identified throughout the building.

A second, smaller, one-story building (approximately 462 square feet [ft^2]) was located in the northeast corner of the Site. The smaller building was constructed of brick with a concrete floor. This building may have been used for chemical storage (Ecology & Environment Inc. [E&E], 2000). All of the Tract I buildings have been demolished.

1.2 REGULATORY HISTORY

During 1999, the City initiated environmental investigations at the Site under the New York State Environmental Restoration Program (ERP) to facilitate redevelopment of the property and was assigned the site number B00160. In May 1999, the initial remedial investigation (RI) was conducted on the Site by E&E for the City under a grant from the NYSDEC. Results from this phase of the RI were presented in a May 2000 Site investigation report (E&E, 2000). During 2007, the NYSDEC contracted EA to perform the second phase of the RI. Results of that phase of the RI were presented in a May 2009 report (EA, 2009). Upon completion of the remedial investigation, the City withdrew the Site from the ERP.

In late 2009 and in 2010, at the request of the NYSDEC, the USEPA conducted a removal action at the Site. These activities included fencing the Site, removal/cleanup and disposal of lead contaminated debris including process drain sediments and sludge from within the PCW building, removal and disposal of non-hazardous debris, and removal and disposal of some asbestos containing building materials. Additionally, paint-related materials, polychlorinated biphenyl (PCB) light ballasts, batteries, mercury switches, and piping located on the Site were removed and disposed of by the USEPA.

In July 2011, Brightfields implemented a NYSDEC-approved Pre-Design Study Work Plan (Mactec, 2011). This study was performed to refine the extent of lead identified in surface soil on the Site. The results of the Tract I portion of the pre-design study investigation were incorporated into the Consolidated Remedial Investigation Report (CRIR; Amec, May 2012), which was prepared as a comprehensive report of the Tract I investigations to that time. The CRIR identified several data gaps in the remedial investigation.

In December 2011, Brightfields submitted an application to the NYSDEC to redevelop the Site under the BCP. The BCP application was submitted concurrently with a draft of the Interim Remedial Measures Work Plan (IRM WP; Amec, December 2011) for the demolition and decontamination of the building. As part of the Site redevelopment process, the NYSDEC requested a Supplemental Remedial Investigation Work Plan (SRIWP) be prepared and implemented to fill data gaps identified in the CRIR. The identified data gaps were as follows:

- The unknown physical and chemical characteristics of debris/sediment in the eastern portion of the PCW building;
- The limited data to characterize on-Site groundwater;
- The unknown horizontal extent of PAHs and PCBs in surface soil on the eastern portion of the property; and
- The unknown extent of lead pollution in soil beneath the PCW building slab.

In July and August 2012 and February 2013, Amec implemented the NYSDEC-approved SRIWP to address the data gaps. Results of the Supplemental Remedial Investigation (SRI) were presented in the Supplemental Remedial Investigation Report (SRIR; Amec, May 2013). The remaining debris located in the eastern portion of the PCW building was characterized and disposed of by Ontario Specialty Contracting, Inc. (OSC). Characterization of groundwater did yield results above their respective Class GA Groundwater Standards; however, the NYSDEC concluded (in the Tract II SCR and the 2003 ROD) that groundwater in the vicinity of the Site is not a source of potable water, nor is it likely to become one in the future. Furthermore, a local ordinance (Niagara Falls Local Law No. 4 for the year 2010; **Appendix A**) prohibits the potable use of groundwater in the City. As such, no on-site groundwater remediation is necessary.

The SRI also defined the nature and extent of the impacted soil and debris on the Site. The majority of the impacted soil was located on the exterior of the former PCW building footprint. This area contained lead and other metals, PAHs, and PCBs, in soil in concentrations above their respective Commercial SCOs. An area of soil containing similar constituents exceeding their respective Commercial SCOs also existed under the northern portion of the former PCW slab. Approximately 42 percent of the lead-impacted soil contained lead at concentrations that also exceeded the Toxicity Characteristic Leaching Procedure (TCLP) standard of 5 milligrams per liter (mg/L). An isolated area underlying the southeastern portion of the slab also contained concentrations of chromium above its Commercial SCO.

In addition to the impacts to Site soil, evaluation of historical documents from the Site indicated that underground storage tanks (USTs) may have been present on the southeastern corner of the building. Subsequent investigation confirmed the presence of the USTs; the removal of which was incorporated into the IRM.

1.3 SUMMARY OF REMEDIAL OBJECTIVES

The goals of the NYSDEC remedial program are to meet the SCOs, and be protective of human health and the environment. At a minimum, "the remedy must eliminate or mitigate all significant threats to public health and the environment presented by the hazardous substance and hazardous waste disposed at the Site through the proper application of scientific and engineering principles" (NYSDEC, 2010).

The proposed future use of the Site includes educational and commercial facilities, both of which are consistent with the commercial use Standards, Criteria, and Guidance (SCGs). Commercial uses are defined in the NYSDEC Technical Guidance DER-10, and are among the most restrictive site uses described in the land-use hierarchy.

In May through December 2013, OSC, under the oversight of Amec, implemented IRMs in accordance with the NYSDEC-approved IRM Work Plan (Amec, August 2013) and its Addenda. These IRMs included:

- Excavation and off-Site disposal of soils, debris and brick bedding material containing constituents that exceeded the Commercial SCOs;
- Excavation, treatment, and off-Site disposal of soils exceeding the TCLP lead standard of 5 mg/L;
- Removal, formal closure, and off-Site disposal of four USTs; and
- Excavation and off-Site disposal of Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) identified in two areas of the Site.

These IRMs are further described in **Section 2.4** of this report. A more detailed description of the specific types and volumes of materials excavated and disposed of under the IRMs will be provided in the Final Engineering Report (FER), which will be prepared and submitted subsequent to the approval of this AAR and the implementation of any necessary remedial measures.

2.0 SITE DESCRIPTION AND HISTORY

This section provides a summary of the characterization of the Site and incorporates the available data collected in the various phases of the Site investigation. A summary of the data used in the development of this AAR were provided in the CRIR (Amec, May 2012) and SRIR (Amec, May 2013).

2.1 EXISTING CONDITIONS

The Site currently consists of a vacant lot with portions covered with engineered backfill composed of crushed brick and concrete, and other areas covered with imported soil. The PCW and ancillary buildings have been demolished. Extensive soil excavation and subsequent backfilling have occurred to remove soil, debris, and demolition materials containing concentrations of hazardous substances exceeding Commercial SCOs.

2.2 GEOLOGY AND HYDROGEOLOGY

The Geologic Map of New York, Niagara Sheet published by the University of the State of New York, indicates that the Site lies within the Silurian-aged (~444 to 416 million years ago) Lockport Group. The Lockport Group consists of Geulph, Oak Orchard, Eramosa, and Goat Island Dolostones and the Gasport Limestone. As a reference, the adjacent site (Tract II) investigation identified bedrock between 12.5 and 24.5 feet below ground surface (ft-bgs; Amec, March 2012). The unconsolidated material at the Site consists of various fill materials at the surface, underlain by silty clay that grades into a till unit. Dolostone bedrock is present below the till.

A groundwater characterization study conducted by Amec in 2012 through 2013 (Amec, May 2013) indicated that a water bearing zone was present at the Site. Monitoring wells installed at the Site in the overburden soils and fill above the bedrock indicate that groundwater is at an elevation of approximately 575 to 580 feet above mean sea level (ft-amsl). The observed water bearing zone is likely perched and does not represent a continuous surficial aquifer. A theoretical groundwater flow was mapped to be toward the southwest at a calculated hydraulic gradient of 0.01 feet per foot (ft/ft); however, groundwater studies on the adjacent Tract II property indicate that the theoretical groundwater flow in that area appears to be to the southeast, toward the Niagara River. Slug testing of the Site monitoring wells indicated that the hydraulic conductivity of the silty clay ranged from a low of 8.8×10^{-6} feet per second (ft/sec) to 8.5×10^{-5} ft/sec. The calculated hydraulic conductivity, (the ability of water to flow through the soil), is indicative of a very low permeability soil, which results in the perched water system.

Groundwater in the vicinity of Site is not a source of potable water, nor is it likely to become one in the future. The NYSDEC Record of Decision for the adjacent Tract II property states that there is no significant groundwater aquifer in the overburden soils and fill above the bedrock, and that a public drinking water supply system is available throughout the area. Furthermore, a local ordinance (Niagara Falls Local Law No. 4 for the year 2010) prohibits the use of groundwater as a potable water supply in the City, and the hydraulic conductivity is such that extracting groundwater for other uses would be infeasible.

2.3 SUMMARY OF REMEDIAL INVESTIGATIONS

The Site was investigated in four phases between 1999 and 2013. These included the 1999 E&E Site investigation, the 2007 - 2008 EA Engineering, P.C. and its affiliate EA Science and Technology Site characterization, the July 2011 Amec pre-design study, and the 2012-2013 Amec SRI. Field activities and results from the first three phases of investigations are detailed in the CRIR (Amec, May 2012) and results from the SRI are detailed within the SRIR (Amec, May 2013). A brief summary of each event is provided below.

2.3.1 Site Investigation/Remediation History

In May 1999, the initial investigation was conducted by E&E. The E&E investigation included the collection of samples from soil outside of the eastern end of the building, debris within the building, and process drain sediment/sludge in the building. Results from this investigation indicated that lead, PAHs, and PCBs were detected in Site media exceeding the applicable SCOs. The E&E report concluded that additional sampling would be necessary to delineate the extent of these constituents.

In late 2007, the NYSDEC contracted EA to perform another phase of Site characterization. The EA investigation focused on debris inside of the building. Results of that investigation indicated that lead, arsenic, mercury, zinc, and PAHs were present in the building in concentrations exceeding the applicable SCOs. Additionally, lead was present in the debris in concentrations exceeding the TCLP limit of 5 mg/L in the TCLP extract.

In July 2011, Amec implemented a NYSDEC-approved Pre-Design Study Work Plan (Mactec, 2011). This study was performed to refine the extent of lead identified in surface soil at the Site and to obtain additional engineering data to support the anticipated interim remedial measures for the cleanup. Results of Pre-Design Study confirmed the presence of elevated concentrations of lead in the soil around the perimeter of the PCW building. The results of the investigation were presented in the CRIR (Amec, May 2012).

In July and August 2012 and February 2013, Amec implemented the NYSDEC-approved SRIWP to address data gaps identified in the CRIR. The results of the SRI concluded that lead, PAHs, PCBs, and other metals were present in surface, subsurface, and subslab soils exceeding their respective Commercial SCOs. TCLP analyses also confirmed soil containing lead above the TCLP standard of 5 mg/l. The SRI also addressed demolition materials and debris in the former PCW building. These materials were found to also contain elevated levels of lead, PAHs and PCBs. Two USTs were also identified and evaluated during the SRI. The USTs were found to contain water; however, petroleum hydrocarbons were identified in the soil in close proximity to the tanks. The results of the SRI were presented in the SRIR (Amec, May 2013).

The Tract I Site was surveyed for the presence of TENORM Slag; however, the material was not identified prior to demolition. A radiological survey was performed during demolition as the foundation slab was removed. Two areas were indentified that contained TENORM Slag with activities exceeding the TENORM Slag cleanup value on a 2 inch x 2 inch sodium iodide (NaI) detector, as identified in the approved Radiological Addendum to the Tract II Remedial Design Work Plan. These areas are shown on **Figure 3**.

The planned future use of the Tract I Site includes restriction of the Site to commercial and industrial uses only. As a result, the Site is required to meet the Commercial SCOs, and any backfill imported onto the Site is required to meet the Allowable Constituent Levels for Imported Fill or Soil (ACLs; **Appendix B** of DER-10) for commercial use sites. The soil, debris, and demolition materials that contained constituents exceeding the applicable SCOs were identified in the IRM Work Plan Addendum. The areas that required remedial action are shown on **Figure 4**.

2.4 SUMMARY OF INTERIM REMEDIAL MEASURES

The data collected in the investigations was used to develop an IRM Work Plan Addendum (Amec, 2013) for remediation at the Site. Remediation was conducted between May and December 2013. A high percentage of Site soils that contained PAHs, PCBs and non-lead metals were co-located with soil that contained elevated levels of lead. The remedial approach for Site soil focused on elevated lead concentrations; however, areas that contained only PAHs, PCBs, or other metals were also addressed. The following subsections summarize the IRMs implemented on the Site. **Figure 5** shows the completed limits of excavation and **Figure 6** shows the reference numbers for each excavation. **Figures 7 through 11** present the current Site conditions for soil; only detected pollutants are shown.

2.4.1 Former Power City Warehouse Demolition Debris and Concrete Pad

The initial effort under the IRM was the demolition of the abandoned PCW ruins and associated concrete slab. Prior to demolition, asbestos containing materials (ACM) were removed and/or

separated from the demolition materials. The ACM was appropriately packaged and disposed of at an off-Site landfill. The debris, process drain sediment, and sludge that remained in the building subsequent to the USEPA removal action was containerized and sampled for off-Site disposal. Scrap metal, including building structural members, rebar, etc., was separated and sent off-Site for recycling. The remaining demolition debris, including brick and concrete, was staged, crushed, and sampled for reuse on the Site. Seven debris and 13 concrete stockpiles were staged and subsequently sampled. The sample results were compared to the Allowable Constituent Levels for Imported Fill or Soil (ACLs; **Appendix B** of DER-10) as well as to the applicable SCOs. Materials represented by samples containing results below their respective Commercial SCOs were approved for on-site reuse as backfill; those below their respective Restricted Residential ACL were approved for reuse without restriction on the Tract II site; and those below the Restricted Commercial ACL, but above the Restricted Residential ACL were approved for reuse only on the designated Commercial Areas of Tract II.

One of the debris stockpiles contained PCBs exceeding the Commercial SCO, but below the TSCA disposal limit of 50 milligrams per kilogram (mg/kg), and was shipped off-Site for disposal as non-hazardous waste. Sample results from the remaining debris stockpiles contained constituent concentrations below their respective ACLs and applicable SCOs; as such, these stockpiles were used as engineered fill material on the Site and the Tract II site.

Four of the concrete stockpiles contained concentrations of semi volatile organic compounds (SVOCs), PCBs, or lead above their respective Commercial SCOs. These concrete stockpiles were shipped off-Site for disposal as non-hazardous waste. One of the concrete stockpiles contained a detection of acetone above its respective Restricted Commercial ACL, but well below the Restricted Commercial SCO. This stockpile was restricted to reuse as backfill on Tract I only since it does not meet the ACL for imported fill (if "imported" to Tract II). One of the concrete stockpiles contained SVOCs above the Restricted Residential ACL and SCO; this stockpile was restricted to reuse as backfill on Tract I and within the designated commercial areas of Tract II. The sample results from the remaining concrete stockpiles contained constituent concentrations below their applicable SCOs or ACLs, and were reused as backfill on Tract I without restriction.

2.4.2 Foundation Brick Bedding Material

Two areas of brick bedding material in the floor of the PCW contained concentrations of PCBs exceeding the Commercial SCOs. The bedding in these areas was removed and disposed of off-Site during the IRM. One area of approximately 3,800 ft^2 was disposed of off-Site as non-hazardous. The second area, consisting of approximately 100 ft^2 was disposed of off-Site as hazardous.

2.4.3 Radiological Material

Materials exhibiting characteristics similar to the TENORM Slag on the Tract II site were scanned to determine if the Site also contained TENORM. Two areas, shown on **Figure 3**, contained TENROM Slag with readings on the 2 inch x 2 inch NaI detector above the TENORM Slag cleanup criterion value of 13,400 counts per minute (CPM) as provided in the approved Radiological Addendum. One area consisted of friable TENORM interbedded with silty-clay soils (~100 cubic yards) and the second consisted of gravel-sized TENORM Slag beneath the concrete slab (~400 cubic yards). Both materials were excavated and disposed of off-Site as non-hazardous waste. Small amounts of TENORM Slag were embedded in the concrete slab as it was removed. However, the embedded Slag and the concrete met the TENORM cleanup criterion. This material was sampled for chemical constituents, the results of which met all applicable ACLs and SCOs. As a result, this material was reused on the Site and the adjacent Tract II site as engineered backfill.

2.4.4 Asphalt Material

During removal of the PCW slab, a black, asphalt-like material was observed to have been used as a sub base underlying the southern portion of the slab. This material was chemically characterized at the request of the NYSDEC and did not contain concentrations of suspect constituents (PAHs, PCBs or metals) exceeding their respective Commercial SCOs. However, at the request of the NYSDEC, this material was removed and disposed of off-Site as non-hazardous "nuisance material".

2.4.5 Underground Storage Tanks

Two USTs were identified during the SRI; these tanks were located at the southeastern corner of the PCW slab and were constructed of riveted steel. The tanks were approximately 33 feet long and nine feet in diameter (approximately 15,700 gallons). Both of these tanks contained water, which was characterized and discharged to the City of Niagara Falls' sanitary sewer. The tanks were removed, cleaned, and properly decommissioned for off-Site disposal in accordance with Section 5.5 of DER-10. The resulting excavation was approximately 595 cubic yards in volume with an aerial extent of approximately 5,340 ft^2. Confirmatory sidewall and base samples were collected, and the results, with the exception of cadmium and some PAHs, met the Commercial SCOs. Additional material was removed along the southwestern sidewall of the excavation until the cadmium and PAHs met their respective Commercial SCOs. **Figure 12** shows the approximate limits of the Tract I UST excavations.

During the demolition of the ancillary brick building in the northeastern portion of the Site, two additional USTs were uncovered beneath the concrete slab. These tanks were constructed of steel and were approximately four feet in diameter by five feet long (approximately 470 gallons). The

contents of these tanks were characterized and determined to be petroleum-based products. The product was pumped from the tanks and sampled for disposal. The contents of one tank (2 drums) were non-hazardous and were disposed of off-Site. Contents of the second tank (10 drums) were characteristically hazardous due to ignitability, and were also disposed of off-Site at a facility licensed to accept the hazardous waste material. The additional two USTs were then removed, cleaned, and properly decommissioned for off-Site disposal. Stained soils and a petroleum odor were observed on the eastern excavation wall following removal. This soil was excavated until the confirmatory samples indicated that the Commercial SCOs had been met. The resulting excavation was approximately 20 cubic yards in volume with an aerial extent of approximately 250 ft^2. **Figure 12** shows the approximate limits of the Tract I UST excavations.

2.4.6 Lead Impacted Soil Excavations

The IRM Work Plan identified four areas of soil containing lead exceeding the Commercial SCO. Some of the soil in these areas also exceeded TCLP Standard for lead. Additionally, during the removal of the PCW slab, a fifth area (Excavation Area 10) was identified containing elevated lead concentrations. Soils containing lead exceeding the Commercial SCO was sampled for TCLP lead either in-situ or following excavation. Soils found to meet the TCLP Standard for lead were shipped off-Site as non-hazardous. Soil that exceeded the TCLP standard was treated via the application and homogenization of five percent Portland cement. This soil was then re-sampled, for TCLP lead, and, once it met the standard, was shipped off-Site as non-hazardous waste. Confirmatory sidewall and base samples were collected to ensure each excavation area met the applicable Commercial SCOs. Several of the excavation areas were expanded beyond the limits defined in the IRM Work Plan Addendum; however, all of the excavation area confirmatory samples met the applicable SCOs upon completion. The following subsections provide details of the excavation in each of the five areas; additional excavation details will be provided in the FER.

2.4.6.1 Lead Excavation Area 1

Lead excavation Area 1 was located along the southern and eastern perimeter of the former PCW (**Figure 7**). In addition to lead, portions of this area also contained select SVOCs, PCBs, and metals in concentrations exceeding their respective SCOs. Confirmatory samples collected in this area were analyzed for the list of compounds identified in the IRM Work Plan Addendum.

The resulting excavation was approximately 11,000 cubic yards in volume with an aerial extent of approximately 81,575 ft^2. The portion of the excavation that contained metals in addition to lead exceeding their respective Commercial SCOs was approximately 2,980 cubic yards in volume with an aerial extent of 40,270 ft^2. The portion of the excavation that contained SVOCs exceeding their respective Commercial SCOs was approximately 5,370 cubic yards in volume

with an aerial extent of approximately 72,500 ft^2. The portion that contained PCBs exceeding their respective Commercial SCOs was approximately 210 cubic yards in volume with an aerial extent of 1,900 ft^2.

The excavation was expanded in several areas due to confirmatory sample results exceeding the respective Commercial SCOs. The excavation was extended laterally in several locations in the northern and southern portions due to the presence of lead and SVOCs and deeper in the south-central portion due to SVOCs. Samples collected along the northern and eastern property boundaries contained concentrations of SVOCs and lead above their respective Commercial SCOs.

Excavation Area 1, located around the southern, eastern, and northeastern perimeter of the PCW building, was completed in several phases during the IRM. Each phase was identified with a separate excavation area number for field tracking. Excavation Areas 6, 7, 8, and 9 encompass all of the original Excavation Area 1, and the confirmatory sample numbers reflect these area names.

2.4.6.2 Lead Excavation Area 2

Lead Excavation Area 2 was located in the north-central portion of the Site, east of Lead Excavation Area 4. In addition to the soil not meeting the Commercial SCO and TCLP standard for lead, portions of this excavation area also did not meet the Commercial SCO for PCBs. The final limits were approximately 700 cubic yards in volume with an aerial extent of approximately 6,740 ft^2. The portion of the excavation that contained PCBs exceeding the Commercial SCO was approximately 50 cubic yards in volume with an aerial extent of approximately 655 ft^2. Additional soil was removed in the eastern portion of the excavation due to a confirmatory sample containing lead above the Commercial SCO.

2.4.6.3 Lead Excavation Area 3

Lead Excavation Area 3 was located in the western portion of the Site. The final limits were approximately 450 cubic yards in volume with an aerial extent of approximately 10,500 ft^2. Additional soil was removed in the eastern portion of the excavation due to a confirmatory sample containing lead exceeding the Commercial SCO.

2.4.6.4 Lead Excavation Area 4

Lead Excavation Area 4 was located in the north-central portion of the Site, west of Lead Excavation Area 2. In addition to the soil not meeting the Commercial SCO and TCLP standard for lead, portions of this excavation area also did not meet respective Commercial SCO for SVOCs and PCBs. The final limits of the excavation were approximately 270 cubic yards in volume with an aerial extent of approximately 2,280 ft^2. The portion of the excavation

determined to contain SVOCs and PCBs above the Commercial SCO was approximately 100 cubic yards in volume with an aerial extent of approximately 680 ft^2. It was not necessary to remove additional soil based on the results of the confirmatory samples.

2.4.6.5 Additional Lead Excavation Area (Excavation Area 10)

During removal of the northwestern portion of the PCW slab, stained soil with a mild petroleum odor was observed underlying the slab. This soil registered less than 1 part per million (ppm) on a photoionization detector (PID), but was elevated from background readings. Due to the staining and PID results, the NYSDEC requested that the stained soil be excavated, stockpiled, and a composite characterization sample collected for VOCs, SVOCs, pesticides, PCBs, and metals. The composite sample was biased toward more heavily stained material. Lead was the only constituent detected above its respective Commercial SCO, and, given the magnitude of the detection, was assumed to also exceed the TCLP standard. As a result, confirmatory sidewall and base samples were collected to document that soil containing concentrations of lead exceeding the Commercial SCO was removed. None of the confirmatory samples contained lead at a concentration above the Commercial SCO. The excavated soil was treated as discussed in **Section 2.4.6** prior to disposal off-Site as non-hazardous waste. The final limits of the excavation were approximately 120 cubic yards with an aerial extent of approximately 810 ft^2.

2.4.7 Chromium Target Excavation (Excavation Area 5)

The IRM Work Plan Addendum identified an area of soil containing concentrations of chromium above its respective Commercial SCO. This area is shown on **Figure 11**. The final limits of the excavation were approximately 46 cubic yards in volume with an aerial extent of approximately 625 ft^2. The excavated soil was shipped off-Site for disposal as non-hazardous waste.

3.0 REMEDIAL GOALS AND REMEDIAL ACTION OBJECTIVES

The majority of the soil exceeding the Commercial SCOs was located on the exterior of the former PCW building footprint. This area contained concentrations of lead and other constituents (PAHs, PCBs, and other metals) in soil above their respective SCOs. Additional areas of soil containing concentrations of these same constituents above their respective Commercial SCOs were present under the northern portion of the former PCW foundation slab. In addition, an isolated area underlying the southeastern portion of the foundation slab contained concentrations of chromium above its respective Commercial SCO.

The goals of the NYSDEC remedial program are to meet the SCOs, and be protective of human health and the environment. At a minimum, "the remedy must eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous substance and hazardous waste disposed at the Site through the proper application of scientific and engineering principles" (NYSDEC, 2010). All material, including soil, identified to contain concentrations above applicable Commercial SCOs was removed from the Site during IRMs.

The proposed future use of the Site includes a commercial facility, which is consistent with the commercial SCGs. Commercial uses are defined in the NYSDEC Technical Guidance DER-10, and are among the most restrictive site uses described in the land-use hierarchy.
The following were the remedial objectives that were proposed in the IRM Work Plan and Addendum:

- Excavation and offsite disposal of soils above the respective Commercial SCOs; and
- Treatment, excavation, and offsite disposal of soils exceeding the TCLP lead standard of 5 mg/L.

These objectives were met upon completion of the IRMs.

The remedial objectives applicable to the AAR include:

- Development and evaluation of potential remedial alternatives that are protective of human health and the environment; and

- Comparison of the potential remedial alternatives relative to the Threshold Criteria, Primary Balancing Criteria and the Modifying Criteria to aid in the selection of the most appropriate final remedial alternative for Site.

4.0 DEVELOPMENT OF REMEDIAL ALTERNATIVES

4.1 ASSEMBLY OF POTENTIAL REMEDIAL ALTERNATIVES

This Section provides the potential remedial actions applicable to the Site. The remedial actions presented are generally consistent with those identified in previous remedial alternative evaluations, including those presented in *"Presumptive Remedy for Metals in Soil Sites"*, EPA 540-F-98-054 (USEPA, 1999), and those presented in NYSDEC DER-15 *"Presumptive/Proven Remedial Technologies"* (NYSDEC, February 27, 2007).

As previously stated, the remaining concentrations of constituents in soil meet the Commercial SCOs. The proposed use of the Site as an educational incubator and/or as commercial or light industrial space is consistent with or exceeds the requirements of the use of the Commercial standard under DER-10. The evaluation of alternatives will be limited to determining if the proposed remedy meets the stated remedial objectives for current and future use. Each remedy is presented with a brief description and a qualitative analysis of projected costs to implement.

4.1.1 Alternative 1 – No Action

The No Action Alternative (Alternative 1) is evaluated as a procedural requirement and as a basis for comparison. This alternative would leave the Site in its present condition with no additional action or remedial effort, and no additional costs would be incurred to implement Alternative 1.

4.1.2 Alternative 2 – Implementation and Monitoring of Institutional Controls

As with Alternative 1, no additional remediation would be undertaken as part of Alternative 2. The Site would be left in its present condition. However, institutional controls would be emplaced in the form of deed restrictions that prevent the future use of the property for residential or unrestricted (e.g. agricultural, high contact recreation, etc.) purposes. Additionally, a Site Management Plan and Environmental Easement would be prepared and implemented to ensure enforcement of the deed restrictions. The Site would meet the Commercial SCOs and would remain protective of human health into the future. Alternative 2 would require legal support to prepare and record the deed restrictions. In addition, the Site will be monitored on an annual basis to ensure the institutional controls remain effective. Monitoring will be documented through submission of a Periodic Review Report (PRR) prepared in accordance with Section 6.3(b) of DER-10. A reduction in the frequency of monitoring may be requested based on the status of Site development and project review. The following table provides the anticipated costs associated with Alternative 2, assuming that the monitoring would consist of performing a Site

inspection annually and submission of associated PRR to verify the Site is used in accordance with the deed restrictions.

Alternative 2	
Recording of Deed Restriction	$15,000
Site Management Plan	$10,000
Annual Monitoring and Associated PRR NPV (30 Years)	$50,000
Total NPV:	$75,000

The cost of the deed restrictions is based on the estimated legal support to write and record the restrictions with the County. This effort generally includes preparation of the deed language from example text, preparation of a meets and bounds for the property and review and comment from the NYSDEC. Note that the meets and bounds was completed as part of the investigation and IRM implementation. The monitoring costs assume that a simple inspection f the site and letter to the NYSDEC will suffice to document compliance.

4.1.3 Alternative 3 – Excavation and Off-Site Disposal of Soils to Meet Unrestricted Use Soil Clean Up Objectives

Alternative 3 would consist of excavating all of the soil exceeding the applicable Unrestricted Use SCOs. Additional Site characterization would be required to delineate soils above the Unrestricted Use SCOs. No restrictions for the protection of public health, groundwater, or ecological resources would be required following implementation of this alternative. In addition, no institutional controls or deed restrictions would be required. The following table provides the anticipated costs associated with Alternative 3, assuming that the Site would require additional investigation, excavation, and disposal of 16,133 cubic yards (5 acres times an additional 2 feet of excavation) of non-hazardous waste, confirmatory sampling, and backfilling of the excavation. The engineering design is assumed to be approximately 10% of the total remedial costs. A net present value was not calculated since the activities are all assumed to take place within a relatively short time frame. Due to the uncertainty associated with required excavation limits, there is significant uncertainty in the Alternative 3 cost estimate.

Alternative 3	
Additional Investigation	$40,000
Excavation and off-Site Disposal	$1,200,000
Confirmatory Sampling	$30,000
Backfill	$160,000
Engineering/Design	$130,000
Total:	$1,560,000

5.0 DETAILED ANALYSIS OF ALTERNATIVES

5.1 INDIVIDUAL ANALYSIS OF ALTERNATIVES

This section provides an evaluation of all of the alternatives relative to the evaluation criteria set forth in DER-10. The Alternatives are first compared to the Threshold Criteria. Alternatives that meet the Threshold Criteria are further evaluated relative to the Primary Balancing Criteria; Alternatives that do not meet the Threshold Criteria are dropped from further analysis. Additionally, the alternatives are evaluated relative to the redevelopment potential and sustainability as well as the Remedial Goals and Remedial Action Objectives.

5.2 THRESHOLD CRITERIA

The initial evaluation criteria are Threshold Criteria. The Threshold Criteria must be satisfied in order for the remedial alternative to be considered for selection. The following subsections provide an evaluation of the remedial alternatives relative to the Threshold Criteria.

5.2.1 Overall Protection of Human Health and the Environment

The first criterion is the overall protectiveness of human health and the environment. In addition to health protectiveness, this criterion would include protection of groundwater and protection of ecological receptors that may be present on the Site. Alternatives 2 and 3 meet the overall protectiveness criterion for human health and the environment. Alternative 1 does not entirely meet the overall protectiveness of human health criterion for the current Site conditions because it does not ensure that potential future exposures will be limited to those under a commercial use scenario. Alternative 1 will be eliminated from any further evaluation.

5.2.2 Compliance with Standards, Criteria and Guidance

Alternative 2 would meet the SCGs, as the Site currently meets the Commercial SCOs. Alternative 3 would enable the Site to meet the Unrestricted Use SCOs.

5.3 PRIMARY BALANCING CRITERIA

The next six criteria are Primary Balancing Criteria. The Primary Balancing Criteria are used to compare the positive and negative aspects of each alternative that meets the Threshold Criteria. Each of the remaining Alternatives will be considered with respect to the Primary Balancing Criteria. The following subsections provide an evaluation of the remedial alternatives relative to the Primary Balancing Criteria.

5.3.1 Long-Term Effectiveness and Permanence

Alternatives 2 and 3 have long-term effectiveness to meet the stated remedial goals. Alternative 2 has permanence assuming that the remedy is properly maintained and that the institutional controls are enforced in the future. Alternative 3 would be effective in the long term as the Site would meet the Unrestricted Use SCOs and would thus not require any deed restrictions or future monitoring.

5.3.2 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 2 does not propose additional reduction of impacted soil. Alternative 3 would further reduce both mobility and volume of the primary constituent of concern (lead) on site by removing soil to meet the Unrestricted Use SCOs; however, no physical or chemical treatment occurs unless the soil is treated at the off-site disposal facility.

5.3.3 Short-Term Effectiveness

Alternative 2 would have sufficient short-term effectiveness to be protective of human health and the environment as they can be implemented immediately. Alternative 3 would require additional time to implement due to additional remedial efforts including excavation and off-Site disposal of soil not meeting the Unrestricted Use SCOs. Furthermore, Alternative 3 would provide lower protectiveness in the short term due to the inherent hazards associated with construction and the increased traffic and disruption to the neighborhood. Alternative 1 does not satisfy the overall protection of human health and the environment due to the lack of deed restrictions and is thus not effective in the short-term.

5.3.4 Implementability

Proven technologies currently exist to implement all of the Alternatives. However, in order to reach the Unrestricted Use SCOs (Alternative 3), additional remedial efforts would need to be implemented. The proposed soil excavation and off-site disposal methods of Alternative 3 have been implemented successfully on numerous sites throughout the State of New York and within the United States.

5.3.5 Cost

No additional costs are anticipated for the implementation of Alternative 1. The net present value of anticipated future costs associated with Alternative 2 is estimated to be $75,000. An estimated cost of $1.56 million is anticipated for the implementation of Alternative 3. The additional cost associated with Alternative 3 is the result of extensive soil excavation and off-Site disposal to meet the Unrestricted Use SCOs. In addition, the estimated costs of Alternative 3 would

negatively impact the economic viability of the future Brownfield commercial redevelopment project.

5.3.6 Land Use

The proposed land use is educational and commercial facilities, which require soil to meet the Commercial SCOs. Alternative 2 meets the proposed land use, assuming that deed restrictions are in place. Alternative 3 meets the proposed land use without deed restrictions and future monitoring. Alternative 1 does not ensure that the property use will be limited to commercial or industrial, consistent with the cleanup criteria attained.

5.3.7 Sustainability

Alternatives 1 and 2 do not require additional remedial actions. Alternative 3 requires additional remedial action that would include earth moving activities with an additional carbon footprint.

5.4 MODIFYING CRITERIA

The final evaluation criterion is a Modifying Criterion. The Modifying Criterion is based on public acceptance of the remedial plan, and is evaluated after the completion of the public comment period for the AAR.

5.5 COMPARATIVE ANALYSIS OF ALTERNATIVES

This section compares the various remedial alternatives to each other with respect to the Threshold and Primary Balancing Criteria. Each subsection then identifies the remedial alternative(s) that best meet each criterion.

5.5.1 Overall Protection of Human Health and the Environment

Alternative 1 would not meet the Threshold Criterion requirement for protection of human health and the environment as land use restrictions would not be implemented. Alternative 2 would mitigate exposure to human and ecological receptors through implementation of land use restrictions and future monitoring. Alternative 3 would mitigate exposure by removing soil that does not meet the Unrestricted Use SCOs. As stated in the remedial goals and remedial action objective section, the proposed land use is a commercial facility. As such, Alternatives 2 and 3 are equally suited for overall protection of human health and the environment at the Site.

5.5.2 Compliance with Standards, Criteria, and Guidance

Each of the Alternatives meets the SCGs outlined in the remedial goals and remedial action objectives. However, the future use of the Site is proposed to be for educational and commercial facilities. As such, each of the Alternatives satisfies compliance with SCGs equally.

5.5.3 Long-Term Effectiveness and Permanence

Alternative 1 does not have long term effectiveness or permanence due to the lack of deed restrictions and a future monitoring program. Alternative 2 would be effective long term and permanence due to deed restrictions and monitoring. Alternative 3 would also have long term effectiveness and permanence as no restrictions or monitoring program would need to be implemented. Because the future use of the Site is proposed to be for educational and commercial facilities, Alternatives 2 and 3 equally satisfy long term effectiveness and permanence. Alternative 1 does not meet the criterion.

5.5.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives 1 and 2 would not reduce toxicity, mobility, or volume of the primary constituent of concern (lead), because no additional remedial measures are proposed in these alternatives. Alternative 3 would be effective in reducing mobility and volume on site by excavating soil to meet the Unrestricted Use SCOs; however, no physical or chemical treatment occurs unless the soil is treated at the off-site disposal facility. As such, although Alternative 3 is the most effective option for reducing the volume and mass of contaminant on site, the reduction of toxicity, mobility, and volume of the primary constituent of concern (lead) is the same for all three alternatives unless the soil is treated at the off-site disposal facility under Alternative 3..

5.5.5 Short-Term Effectiveness

Alternative 2 can be implemented immediately. Alternative 3 would require additional time to remediate the Site to meet the Unrestricted Use SCOs and would create short-term hazards associated with excavating and transporting contaminated soil. Since the proposed use of the Site is educational and commercial facilities, each of the Alternative 2 is more suited to satisfy short-term effectiveness than Alternative 3. Alternative 1 is least suited to satisfy short-term effectiveness as it does not satisfy the overall protection of human health and the environment.

5.5.6 Implementability

Alternative 3 is the most challenging to implement as it requires additional remedial efforts. This alternative would require mobilization, additional soil excavation, and off-Site disposal. Alternative 2 would require minimal effort to implement as only a deed restrictions need prepared. Alternative 1 is the least challenging to implement as it requires no additional actions.

5.5.7 Cost

Alternative 3 would require approximately $1,485,000 more cost than Alternative 2 as additional remedial efforts would be required. The additional cost for Alternative 3 is approximately two orders of magnitude higher than for Alternative 2, but offers very little additional protection to the occupants of the Site. Furthermore, Alternative 3 could potentially require significant expenditures above those estimated if excavation is required beyond two feet deep. Alternative 2 would not likely vary significantly from the estimated costs to implement; both are expected to be minimal. As such, Alternatives 1 and 2 are much more economically viable; which is critical to the success of the redevelopment effort.

5.5.8 Sustainability

Alternative 2 would not require additional remedial actions and would thus not have a substantial carbon footprint. Alternative 3 would require additional earthwork during further remedial actions and would thus have an additional carbon footprint. As such, Alternative 2 is best suited to meet sustainability.

6.0 RECOMMENDATIONS

In order to ensure the protectiveness of the remedy into the future, the property should only be used for purposes that meet the definition of Commercial Use under DER-10. Therefore, the final remedial alternative for the Site should include an institutional control that prohibits the use of the property for less restrictive use scenarios. The institutional control should be in the form of a restriction recorded on the property deed, limiting the Site to commercial or industrial use unless the NYSDEC is notified and the soil concentrations can support a less restrictive use through further remediation.

The proposed Alternative 2 (Implementation and Monitoring of Institutional Controls) is the most effective remedy evaluated based upon the criteria discussed in Section 5 and is best suited to meet the remedial goals and remedial action objectives. This alternative is equally or best suited to satisfy compliance with overall protection of human health and the environment, SCGs, long-term effectiveness, reduction of toxicity, mobility, and volume, short-term effectiveness, cost, and sustainability. Alternative 2 involves the implementation of institutional controls in the form of deed restrictions and preparation of a Site Management Plan to ensure the deed restrictions continue to be effective.

Alternative 1 (No Action) was the best suited or equally best suited to satisfy compliance with SCGs, implementability, cost, and sustainability. However, it does not satisfy the overall protection of human health and the environment due to lack of institutional controls (deed restrictions/monitoring plans); as such, Alternative 1 was not selected.

Alternative 3 was best suited or equally best suited to satisfy overall protection of human health and the environment, compliance with SCGs, long term effectiveness, and the reduction of toxicity, mobility, and volume. However, Alternative 3 requires additional soil excavation beyond that required to meet the Commercial SCOs. The intended future use of the Site is for a commercial facility. As such, Alternative 3 was not selected as it requires unnecessary costs, logistical complications, additional time to implement, and would leave a substantial carbon footprint.

7.0 REFERENCES

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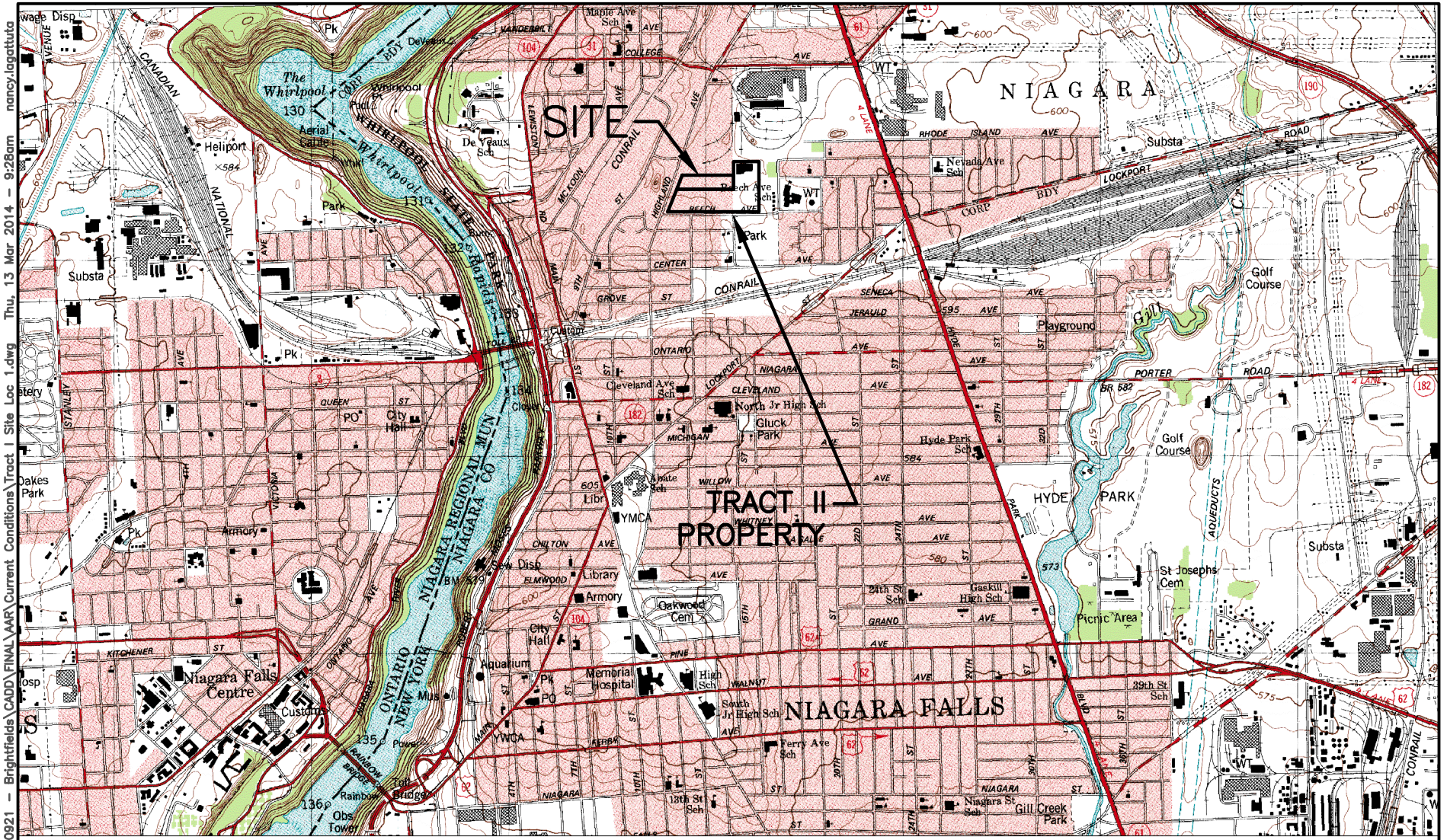
New York State Department of Environmental Conservation (NYSDEC), 2010, DER-10 Technical Guidance for Site Investigation and Remediation, DEC Program Policy

United States Environmental Protection Agency (USEPA), 1999, "Presumptive Remedy for Metals in Soil Sites", EPA 540-F-98-054.

FIGURES

DRAWN BY: NEL 2-6-2012 APPROVED BY: ESW 4-11-2012



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NIAGARA FALLS, NEW YORK

Project No.: 3410130921

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Carnegie, Pennsylvania 15106

SITE LOCATION MAP

Figure: 1

1

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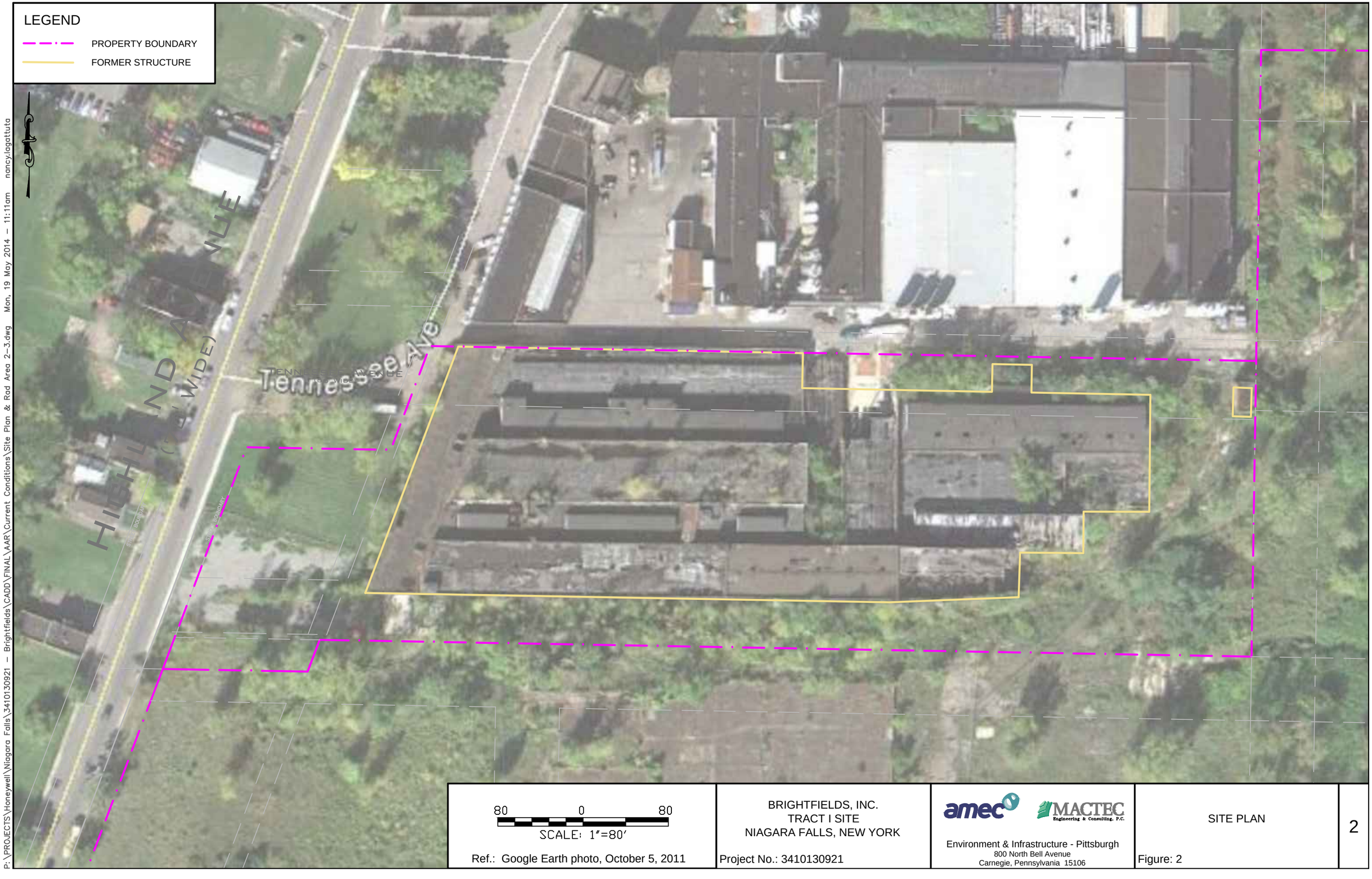
DRAWN BY: NEL 2-11-2014 APPROVED BY: SCC

LEGEND

PROPERTY BOUNDARY

FORMER STRUCTURE



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SCALE: 1"=80'

Ref.: Google Earth photo, October 5, 2011

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SITE PLAN

Figure: 2

2

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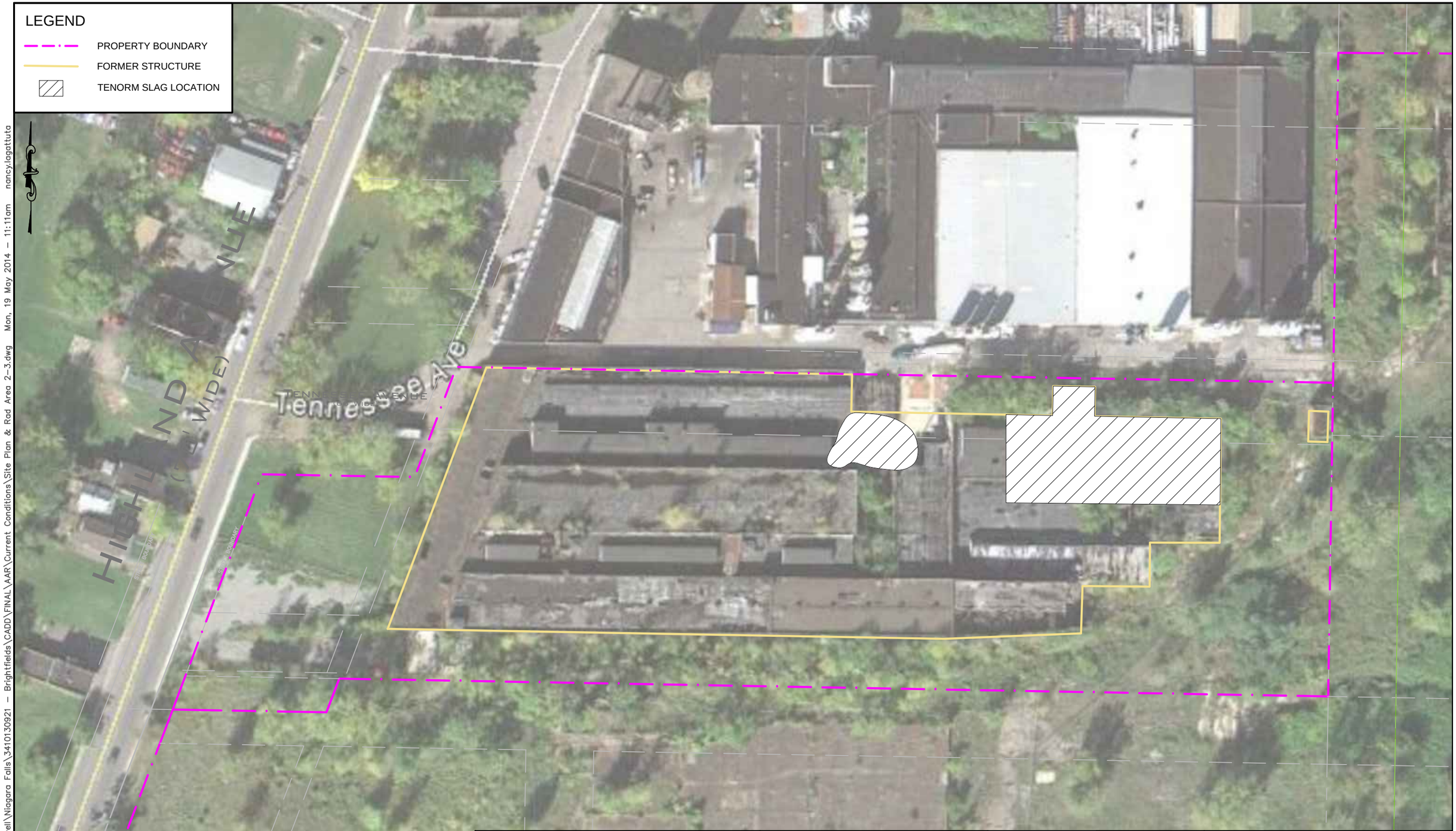
LEGEND

PROPERTY BOUNDARY

FORMER STRUCTURE

TENORM SLAG LOCATION



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LOCATIONS OF TENORM SLAG

Figure: 3

3

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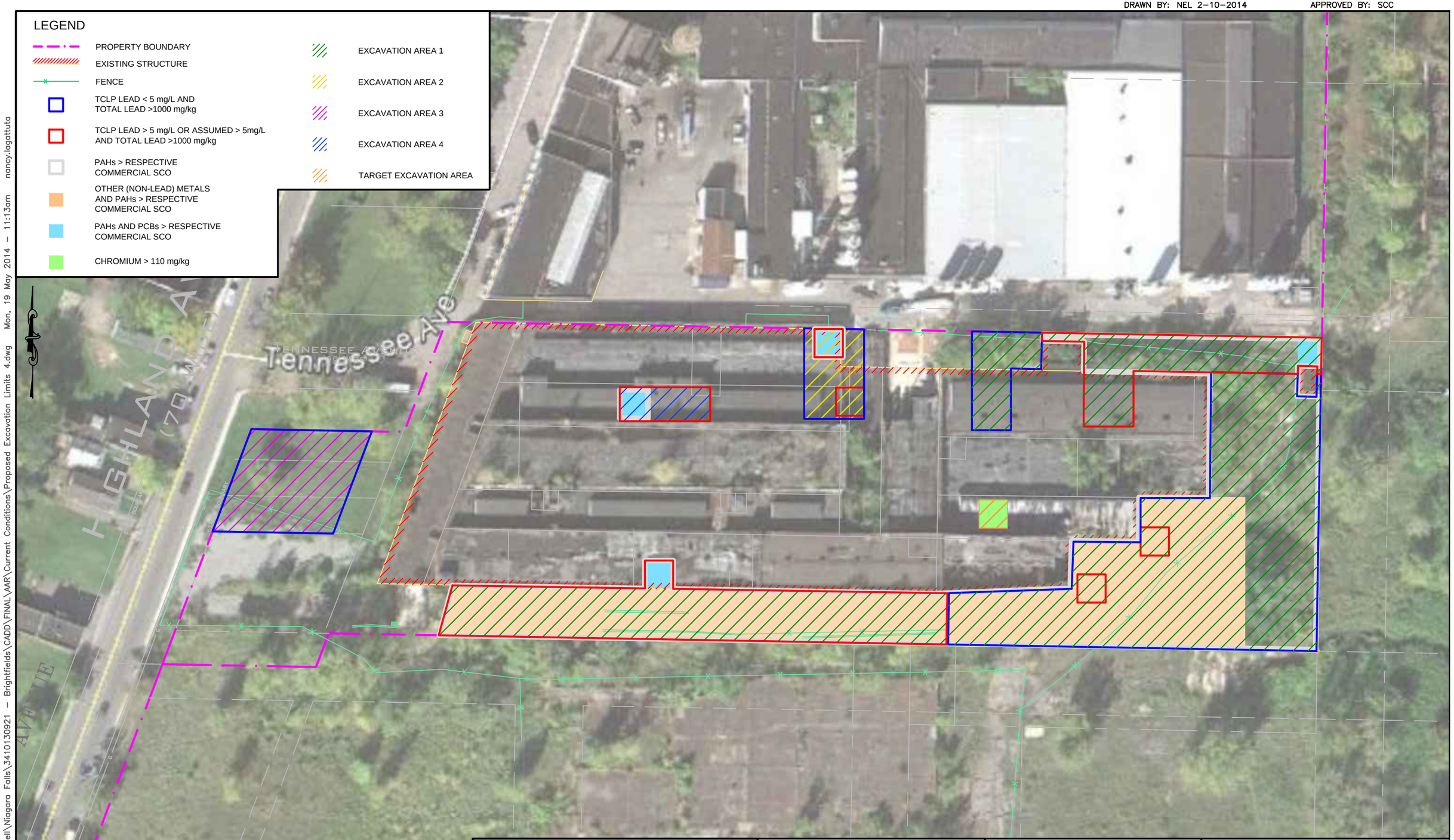
LEGEND

- PROPERTY BOUNDARY
- EXISTING STRUCTURE
- FENCE
- TCLP LEAD < 5 mg/L AND TOTAL LEAD >1000 mg/kg
- TCLP LEAD > 5 mg/L OR ASSUMED > 5mg/L AND TOTAL LEAD >1000 mg/kg
- PAHs > RESPECTIVE COMMERCIAL SCO
- OTHER (NON-LEAD) METALS AND PAHs > RESPECTIVE COMMERCIAL SCO
- PAHs AND PCBs > RESPECTIVE COMMERCIAL SCO
- CHROMIUM > 110 mg/kg
- EXCAVATION AREA 1
- EXCAVATION AREA 2
- EXCAVATION AREA 3
- EXCAVATION AREA 4
- TARGET EXCAVATION AREA



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SUMMARY OF
PROPOSED EXCAVATION AREAS
AS IDENTIFIED IN IRM WP

Figure: 4

4

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LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- Portion of excavation completed for PAHs
- Portion of excavation completed for PCBs/Pesticides
- Portion of excavation completed for Non-lead Metals
- Portion of excavation completed for USTs

80 0 80

SCALE: 1"=80'

Ref.: Google Earth photo, May 4, 2013

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LIMITS OF EXCAVATION

Figure: 5

5

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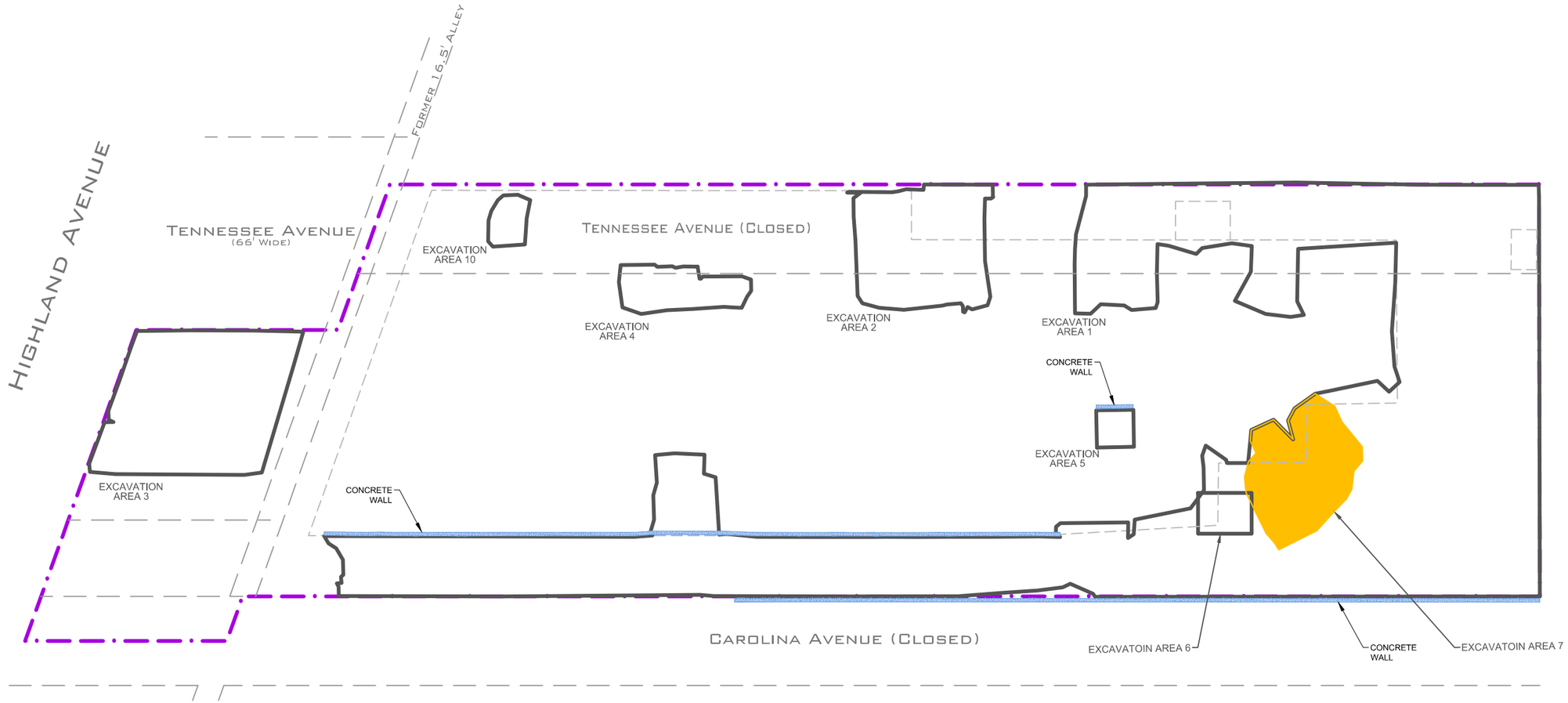

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Limits of Excavation
- Excavation Area 7

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SCALE: 1"=80'

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EXCAVATION AREA
REFERENCE NUMBER

Figure: 6

6

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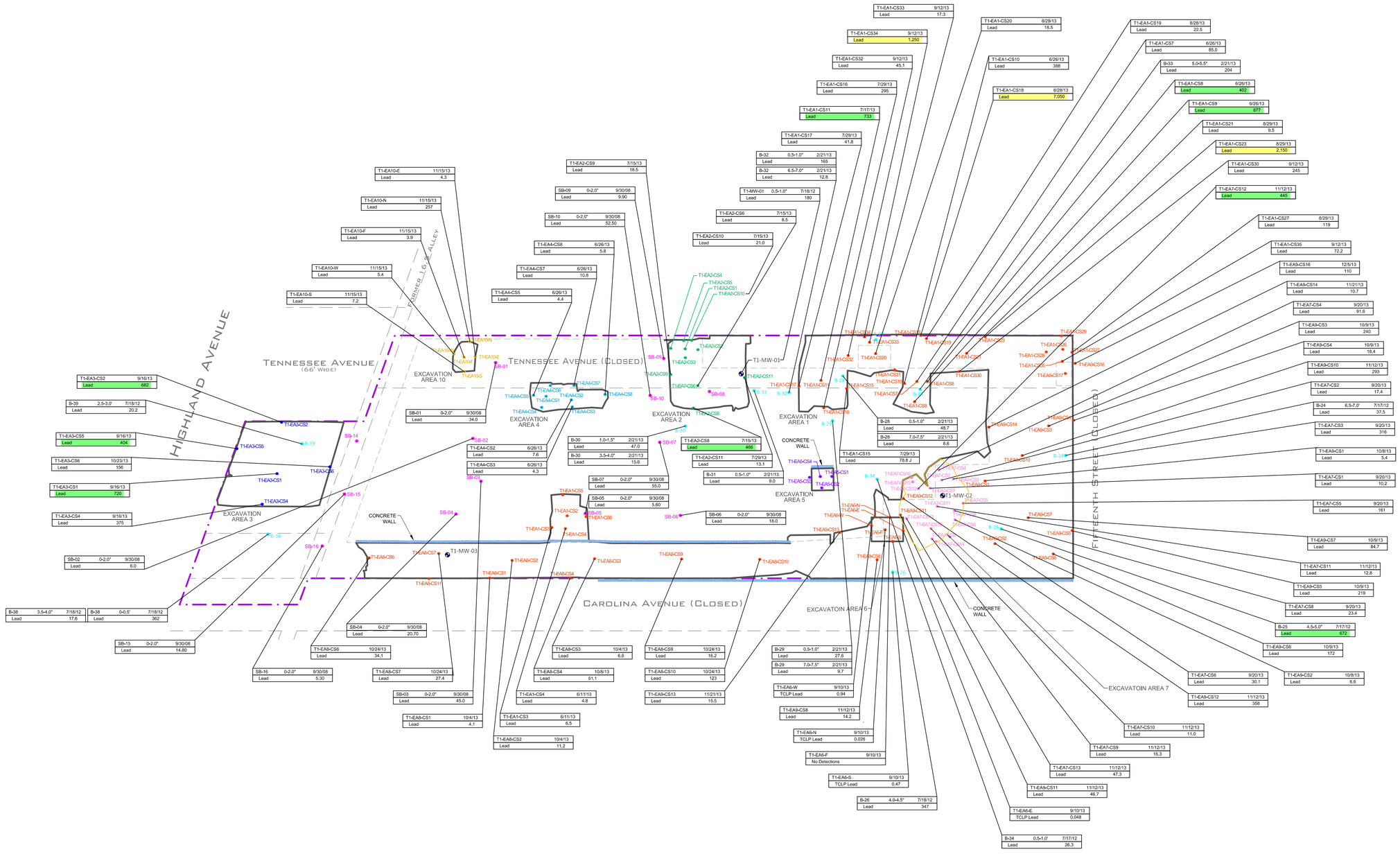

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- T1-MW-03 Monitoring Well Location
- T1-EA1-CS1 Excavation Area 1 Confirmatory Sample Location
- T1-EA2-CS1 Excavation Area 2 Confirmatory Sample Location
- T1-EA3-CS1 Excavation Area 3 Confirmatory Sample Location
- T1-EA4-CS1 Excavation Area 4 Confirmatory Sample Location
- T1-EA5-CS1 Excavation Area 5 Confirmatory Sample Location
- T1-EA7-CS1 Excavation Area 7 Confirmatory Sample Location
- T1-EA10-N Excavation Area 10 Confirmatory Sample Location
- B-30 AMEC Soil Boring Location, 2011-2013
- SB-15 EA Soil Boring Location, 2008

Soil Boring Sample Results Box

T1-EA9-CS6	10/9/13	Sample Name and Date
Lead	172	Soil Boring Sample Results
Lead	172	Concentration exceeds respective Restricted Commercial Soil Cleanup Objective.
Lead	172	Concentration exceeds respective Restricted Residential Soil Cleanup Objective .

J Denotes estimated concentration

NOTE

Lead results reported in mg/kg.
TCLP Lead results reported in mg/L.

SCALE: 1"=60' (60 0 60)

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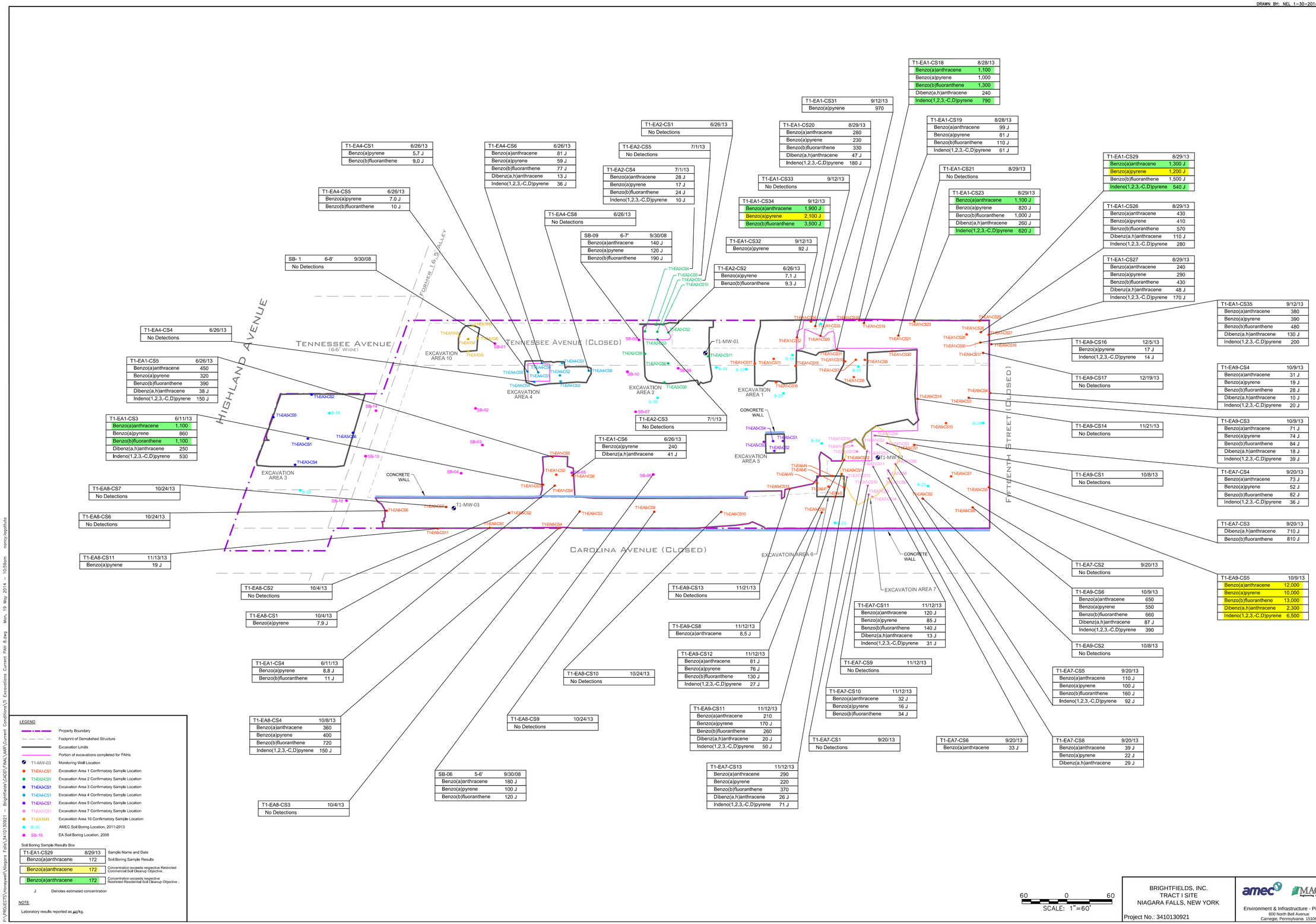
CURRENT LEAD CONDITIONS
Figure: 7

7

P:\PROJECTS\Honeywell\Widgens Fields\3410130921 - Brightfields\CAD\[FINAL\MXR\Current Conditions\T Excavations Current Lead 7.dwg Mon, 19 May 2014 - 10:58am nancy.bigelifulle

DRAWN BY: NEL 1-30-2014 APPROVED BY: SCC



T1-EA1-CS1	6/26/13
Benzo(a)pyrene	5,7 J
Benzo(b)fluoranthene	9,0 J

T1-EA4-CS5	6/26/13
Benzo(a)pyrene	7.0 J
Benzo(b)fluoranthene	10 J

T1-EA4-CS4	6/26/13
No Detections	

T1-EA1-CS5	6/26/13
Benzo(a)anthracene	450
Benzo(a)pyrene	320
Benzo(b)fluoranthene	390
Dibenz(a,h)anthracene	38 J
Indeno(1,2,3,-C,D)pyrene	150 J

T1-EA1-CS3	6/11/13
Benzo(a)anthracene	1,100
Benzo(a)pyrene	860
Benzo(b)fluoranthene	1,100
Dibenz(a,h)anthracene	250
Indeno(1,2,3,-C,D)pyrene	530

T1-EA8-CS7	10/24/13
No Detections	

T1-EA8-CS6	10/24/13
No Detections	

T1-EA8-CS11	11/13/13
Benzo(a)pyrene	19 J

T1-EA4-CS6	6/26/13
Benzo(a)anthracene	81 J
Benzo(a)pyrene	59 J
Benzo(b)fluoranthene	77 J
Dibenz(a,h)anthracene	13 J
Indeno(1,2,3,-C,D)pyrene	36 J

SB- 1	6-8'	9/30/08
No Detections		

T1-EA4-CS8	6/26/13
No Detections	

SB-09	6-7'	9/30/08
Benzo(a)anthracene		140 J
Benzo(a)pyrene		120 J
Benzo(b)fluoranthene		190 J

T1-EA2-CS1	6/26/13
No Detections	

T1-EA2-CS5	7/1/13
No Detections	

T1-EA2-CS4	7/1/13
Benzo(a)anthracene	28 J
Benzo(a)pyrene	17 J
Benzo(b)fluoranthene	24 J
Indeno(1,2,3,-C,D)pyrene	10 J

T1-EA2-CS2	6/26/13
Benzo(a)pyrene	7,1 J
Benzo(b)fluoranthene	9,3 J

T1-EA1-CS6	6/26/13
Benzo(a)pyrene	240
Dibenz(a,h)anthracene	41 J

T1-EA2-CS3	7/1/13
No Detections	

T1-EA1-CS32	9/12/13
Benzo(a)pyrene	92 J

T1-EA1-CS34	9/12/13
Benzo(a)anthracene	1,900 J
Benzo(a)pyrene	2,100 J
Benzo(b)fluoranthene	3,500 J

T1-EA1-CS33	9/12/13
No Detections	

T1-EA1-CS31	9/12/13
Benzo(a)pyrene	970

T1-EA1-CS20	8/29/13
Benzo(a)anthracene	280
Benzo(a)pyrene	230
Benzo(b)fluoranthene	330
Dibenz(a,h)anthracene	47 J
Indeno(1,2,3,-C,D)pyrene	180 J

T1-EA1-CS18	8/28/13
Benzo(a)anthracene	1,100
Benzo(a)pyrene	1,000
Benzo(b)fluoranthene	1,300
Dibenz(a,h)anthracene	240
Indeno(1,2,3,-C,D)pyrene	790

T1-EA1-CS19	8/28/13
Benzo(a)anthracene	99 J
Benzo(a)pyrene	81 J
Benzo(b)fluoranthene	110 J
Indeno(1,2,3,-C,D)pyrene	61 J

T1-EA1-CS21	8/29/13
No Detections	

T1-EA1-CS23	8/29/13
Benzo(a)anthracene	1,100 J
Benzo(a)pyrene	820 J
Benzo(b)fluoranthene	1,000 J
Dibenz(a,h)anthracene	260 J
Indeno(1,2,3,-C,D)pyrene	620 J

T1-EA1-CS29	8/29/13
Benzo(a)anthracene	1,300 J
Benzo(a)pyrene	1,200 J
Benzo(b)fluoranthene	1,500 J
Indeno(1,2,3,-C,D)pyrene	540 J

T1-EA1-CS26	8/29/13
Benzo(a)anthracene	430
Benzo(a)pyrene	410
Benzo(b)fluoranthene	570
Dibenz(a,h)anthracene	110 J
Indeno(1,2,3,-C,D)pyrene	280

T1-EA1-CS27	8/29/13
Benzo(a)anthracene	240
Benzo(a)pyrene	290
Benzo(b)fluoranthene	430
Dibenz(a,h)anthracene	48 J
Indeno(1,2,3,-C,D)pyrene	170 J

T1-EA1-CS35	9/12/13
Benzo(a)anthracene	380
Benzo(a)pyrene	390
Benzo(b)fluoranthene	480
Dibenz(a,h)anthracene	130 J
Indeno(1,2,3,-C,D)pyrene	200

T1-EA9-CS16	12/5/13
Benzo(a)pyrene	17 J
Indeno(1,2,3,-C,D)pyrene	14 J

T1-EA9-CS17	12/19/13
No Detections	

T1-EA9-CS4	10/9/13
Benzo(a)anthracene	31 J
Benzo(a)pyrene	19 J
Benzo(b)fluoranthene	28 J
Dibenz(a,h)anthracene	10 J
Indeno(1,2,3,-C,D)pyrene	20 J

T1-EA9-CS14	11/21/13
No Detections	

T1-EA9-CS3	10/9/13
Benzo(a)anthracene	71 J
Benzo(a)pyrene	74 J
Benzo(b)fluoranthene	84 J
Dibenz(a,h)anthracene	18 J
Indeno(1,2,3,-C,D)pyrene	39 J

T1-EA9-CS1	10/8/13
No Detections	

T1-EA7-CS4	9/20/13
Benzo(a)anthracene	73 J
Benzo(a)pyrene	52 J
Benzo(b)fluoranthene	82 J
Indeno(1,2,3,-C,D)pyrene	36 J

T1-EA7-CS3	9/20/13
Dibenz(a,h)anthracene	710 J
Benzo(b)fluoranthene	810 J

T1-EA9-CS5	10/9/13
Benzo(a)anthracene	12,000
Benzo(a)pyrene	10,000
Benzo(b)fluoranthene	13,000
Dibenz(a,h)anthracene	2,300
Indeno(1,2,3,-C,D)pyrene	6,500

T1-EA7-CS2	9/20/13
No Detections	

T1-EA9-CS6	10/9/13
Benzo(a)anthracene	650
Benzo(a)pyrene	550
Benzo(b)fluoranthene	660
Dibenz(a,h)anthracene	87 J
Indeno(1,2,3,-C,D)pyrene	390

T1-EA9-CS2	10/8/13
No Detections	

T1-EA8-CS2	10/4/13
No Detections	

T1-EA8-CS1	10/4/13
Benzo(a)pyrene	7.9 J

T1-EA1-CS4	6/11/13
Benzo(a)pyrene	8,8 J
Benzo(b)fluoranthene	11 J

T1-EA8-CS4	10/8/13
Benzo(a)anthracene	360
Benzo(a)pyrene	400
Benzo(b)fluoranthene	720
Indeno(1,2,3,-C,D)pyrene	150 J

T1-EA8-CS3	10/4/13
No Detections	

T1-EA9-CS13	11/21/13
No Detections	

T1-EA9-CS8	11/12/13
Benzo(a)anthracene	8,5 J

T1-EA9-CS12	11/12/13
Benzo(a)anthracene	81 J
Benzo(a)pyrene	76 J
Benzo(b)fluoranthene	130 J
Indeno(1,2,3,-C,D)pyrene	27 J

T1-EA8-CS10	10/24/13
No Detections	

T1-EA8-CS9	10/24/13
No Detections	

T1-EA9-CS11	11/12/13
Benzo(a)anthracene	210
Benzo(a)pyrene	170 J
Benzo(b)fluoranthene	260
Dibenz(a,h)anthracene	20 J
Indeno(1,2,3,-C,D)pyrene	50 J

SB-06	5-6'	9/30/08
Benzo(a)anthracene		180 J
Benzo(a)pyrene		100 J
Benzo(b)fluoranthene		120 J

T1-EA7-CS13	11/12/13
Benzo(a)anthracene	290
Benzo(a)pyrene	220
Benzo(b)fluoranthene	370
Dibenz(a,h)anthracene	26 J
Indeno(1,2,3,-C,D)pyrene	71 J

T1-EA7-CS11	11/12/13
Benzo(a)anthracene	120 J
Benzo(a)pyrene	85 J
Benzo(b)fluoranthene	140 J
Dibenz(a,h)anthracene	13 J
Indeno(1,2,3,-C,D)pyrene	31 J

T1-EA7-CS9	11/12/13
No Detections	

T1-EA7-CS10	11/12/13
Benzo(a)anthracene	32 J
Benzo(a)pyrene	16 J
Benzo(b)fluoranthene	34 J

T1-EA7-CS1	9/20/13
No Detections	

T1-EA7-CS6	9/20/13
Benzo(a)anthracene	33 J

T1-EA7-CS5	9/20/13
Benzo(a)anthracene	110 J
Benzo(a)pyrene	100 J
Benzo(b)fluoranthene	160 J
Indeno(1,2,3,-C,D)pyrene	92 J

T1-EA7-CS8	9/20/13
Benzo(a)anthracene	39 J
Benzo(a)pyrene	22 J
Dibenz(a,h)anthracene	29 J

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- Portion of excavations completed for PAHs
- T1-MW-03 Monitoring Well Location
- T1-EA1-CS1 Excavation Area 1 Confirmatory Sample Location
- T1-EA2-CS1 Excavation Area 2 Confirmatory Sample Location
- T1-EA3-CS1 Excavation Area 3 Confirmatory Sample Location
- T1-EA4-CS1 Excavation Area 4 Confirmatory Sample Location
- T1-EA5-CS1 Excavation Area 5 Confirmatory Sample Location
- T1-EA7-CS1 Excavation Area 7 Confirmatory Sample Location
- T1-EA10-N Excavation Area 10 Confirmatory Sample Location
- B-30 AMEC Soil Boring Location, 2011-2013
- SB-15 EA Soil Boring Location, 2008

Soil Boring Sample Results Box

T1-EA1-CS29	8/29/13	Sample Name and Date
Benzo(a)anthracene	172	Soil Boring Sample Results
Benzo(a)anthracene	172	Concentration exceeds respective Restricted Commercial Soil Cleanup Objective.
Benzo(a)anthracene	172	Concentration exceeds respective Restricted Residential Soil Cleanup Objective .

J Denotes estimated concentration

NOTE

Laboratory results reported as µg/kg.

60 0 60
SCALE: 1"=60'

BRIGHTFIELDS, INC.
TRACT I SITE
NIAGARA FALLS, NEW YORK
Project No.: 3410130921

amec MACTEC Engineering & Consulting, P.C.
Environment & Infrastructure - Pittsburgh
800 North Bell Avenue
Carnegie, Pennsylvania 15106

CURRENT PAH CONDITIONS
Figure: 8

8

D:\PROJECTS\Honeywell\Niagara Falls\341013092I - Brightfields\CAD\FINAL\ARR\Current Conditions\T1_ExcovationsCurrent PAH B.dwg Mon, 19 May 2014 - 10:59am nancy.bagatella

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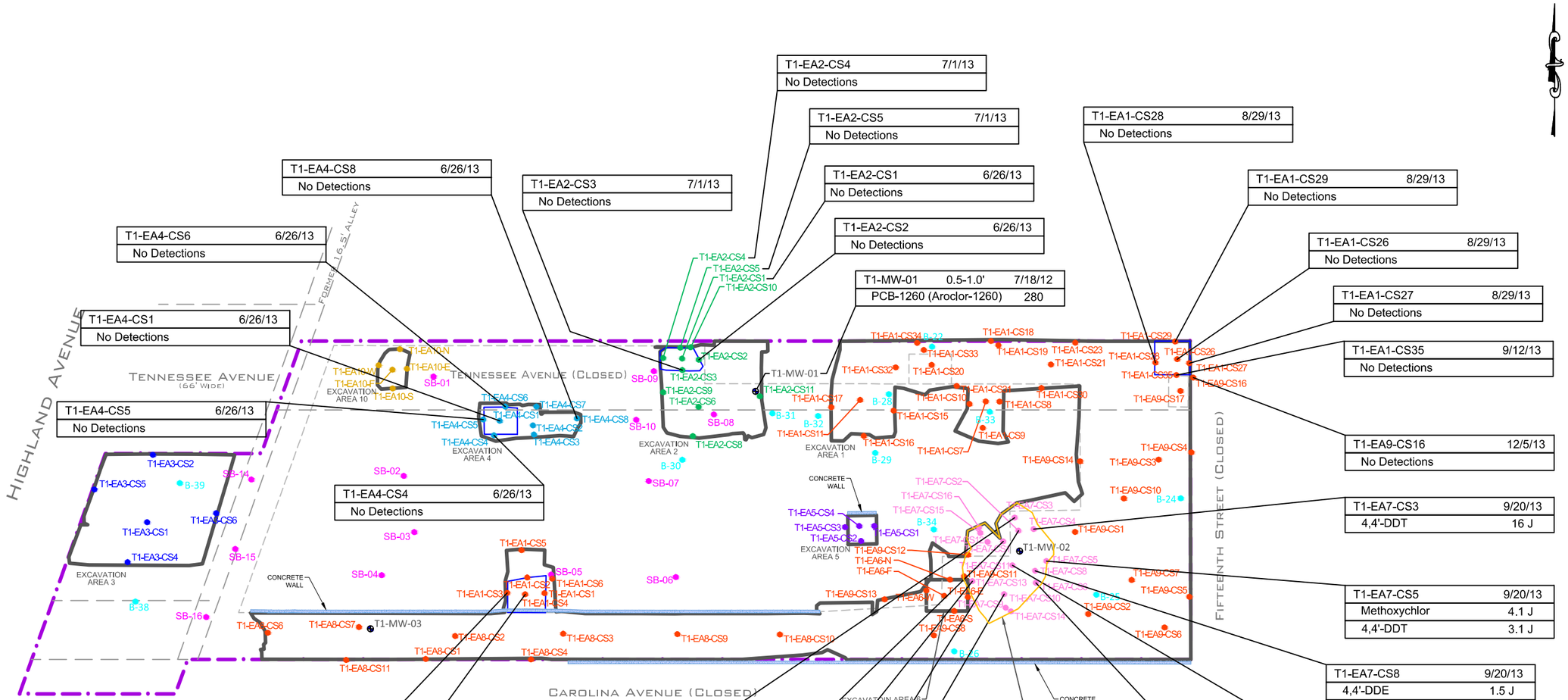

T1-EA4-CS8	6/26/13
No Detections	

T1-EA4-CS6	6/26/13
No Detections	

T1-EA4-CS1	6/26/13
No Detections	

T1-EA4-CS5	6/26/13
No Detections	

T1-EA4-CS4	6/26/13
No Detections	

T1-EA2-CS3	7/1/13
No Detections	

T1-EA2-CS4	7/1/13
No Detections	

T1-EA2-CS5	7/1/13
No Detections	

T1-EA2-CS1	6/26/13
No Detections	

T1-EA2-CS2	6/26/13
No Detections	

T1-MW-01	0.5-1.0'	7/18/12
PCB-1260 (Aroclor-1260)	280	

T1-EA1-CS28	8/29/13
No Detections	

T1-EA1-CS29	8/29/13
No Detections	

T1-EA1-CS26	8/29/13
No Detections	

T1-EA1-CS27	8/29/13
No Detections	

T1-EA1-CS35	9/12/13
No Detections	

T1-EA9-CS16	12/5/13
No Detections	

T1-EA7-CS3	9/20/13
4,4'-DDT	16 J

T1-EA7-CS5	9/20/13
Methoxychlor	4.1 J
4,4'-DDT	3.1 J

T1-EA7-CS8	9/20/13
4,4'-DDE	1.5 J
4,4'-DDT	2.0 J

T1-EA7-CS11	11/12/13
gamma-BHC (Lindane)	0.36 J
4,4'-DDE	0.49 J
4,4'-DDT	0.88 J

T1-EA7-CS6	9/20/13
delta-BHC	0.37 J,B
gamma-Chlordane	0.91 J
4,4'-DDT	0.47 J,B

T1-EA1-CS3	6/11/13
No Detections	

T1-EA1-CS4	6/11/13
No Detections	

T1-EA7-CS4	9/20/13
gamma-BHC (Lindane)	1.4 J
4,4'-DDE	1.6 J
4,4'-DDT	2.1 J

T1-EA7-CS1	9/20/13
4,4'-DDE	1.7 J
4,4'-DDT	1.9 J

T1-EA7-CS13	11/12/13
4,4'-DDT	4.6 J

T1-EA7-CS10	11/12/13
No Detections	

T1-EA7-CS2	9/20/13
No Detections	

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- Portion of excavation completed for PCBs
- T1-MW-03 Monitoring Well Location
- T1-EA1-CS1 Excavation Area 1 Confirmatory Sample Location
- T1-EA2-CS1 Excavation Area 2 Confirmatory Sample Location
- T1-EA3-CS1 Excavation Area 3 Confirmatory Sample Location
- T1-EA4-CS1 Excavation Area 4 Confirmatory Sample Location
- T1-EA5-CS1 Excavation Area 5 Confirmatory Sample Location
- T1-EA7-CS1 Excavation Area 7 Confirmatory Sample Location
- T1-EA10-N Excavation Area 10 Confirmatory Sample Location
- B-30 AMEC Soil Boring Location, 2011-2013
- SB-15 EA Soil Boring Location, 2008

Soil Boring Sample Results Box

T1-EA1-CS29	8/29/13	Sample Name and Date
Benzo(a)anthracene	172	Soil Boring Sample Results

J Denotes estimated concentration

B Denotes that compound was also detected in method blank.

NOTE

Laboratory results reported as µg/kg.

100 0 100

SCALE: 1"=100'

BRIGHTFIELDS, INC.
TRACT I SITE
NIAGARA FALLS, NEW YORK

Project No.: 3410130921

amec MACTEC Engineering & Consulting, P.C.

Environment & Infrastructure - Pittsburgh
800 North Bell Avenue
Carnegie, Pennsylvania 15106

CURRENT PCB/PESTICIDES CONDITIONS

Figure: 9

9

DRAWN BY: NEL 1-31-2014 APPROVED BY: SCC

SB-01	6.0-8.0'	9/30/08
n-Butylbenzene		20 J
sec-Butylbenzene		4.6 J
1,2,4-Trimethylbenzene		100 J
1,3,5-Trimethylbenzene		74 J
m,p-Xylene		5.3 J
Xylene (Total)		5.3 J

SB-06	5.0-6.0'	9/30/08
Acetone		150 J
2-Butanone		28 J
n-Butylbenzene		22
sec-Butylbenzene		5.3 J
Isopropylbenzene		10 J
Naphthalene		48
n-Propylbenzene		13
1,2,4-Trimethylbenzene		100
1,3,5-Trimethylbenzene		62

SB-09	6.0-7.0'	9/30/08
Acetone		48 J
n-Butylbenzene		17
sec-Butylbenzene		8.1
Isopropylbenzene		3.7 J
Naphthalene		6.3
n-Propylbenzene		4.8 J
Toluene		5.5 J
Trichloroethene		12
1,2,4-Trimethylbenzene		83

T1-MW-01	4.5-5.0'	7/18/12
Acetone		100
Cyclohexane		13
Isopropylbenzene		6.8
Methyl Ethyl Ketone (MEK)		33
Methylcyclohexane		46
Toluene		0.48 J
Xylenes (Total)		3.2 J

T1-MW-01	8.5-9.0'	7/18/12
Acetone		22 J
Cyclohexane		61
Isopropylbenzene		31
Methyl Ethyl Ketone (MEK)		4.5 J
Methylcyclohexane		200
Tetrachloroethylene (PCE)		1.1 J

B-22	9.5-10.0'	7/17/12
Acetone		34
Cyclohexane		34
Methyl Ethyl Ketone (MEK)		4.4 J
Methylcyclohexane		64 J

T1-EA9-CS16	12/5/13
Acetone	63

T1-EA7-CS4	9/20/13
Acetone	16 J

T1-EA7-CS3	9/20/13
Acetone	91
Cyclohexane	27
Methyl Ethyl Ketone (MEK)	32
Methylcyclohexane	80
Xylenes (Total)	8.0 J

T1-EA7-CS2	9/20/13
Isopropylbenzene	4.5

T1-EA7-CS5	9/20/13
Acetone	26

T1-MW-02	5.0-6.0	8/1/12
No Detections		

T1-EA7-CS1	9/20/13
Acetone	17 J

T1-EA7-CS13	11/12/13
No Detections	

T1-EA7-CS11	11/12/13
Isopropylbenzene	3.6 J
Methylcyclohexane	14

T1-EA7-CS10	11/12/13
Acetone	10 J

T1-EA7-CS6	9/20/13
No Detections	

T1-EA7-CS8	9/20/13
Acetone	12 J

HIGHLAND AVENUE
TENNESSEE AVENUE (66' WIDE)
TENNESSEE AVENUE (CLOSED)
FORMER 16 1/2' ALLEY
FIFTEENTH STREET (CLOSED)
CAROLINA AVENUE (CLOSED)
EXCAVATION AREA 1
EXCAVATION AREA 2
EXCAVATION AREA 3
EXCAVATION AREA 4
EXCAVATION AREA 5
EXCAVATION AREA 10
EXCAVATOIN AREA 6
EXCAVATOIN AREA 7
CONCRETE WALL
T1-MW-01
T1-MW-02
T1-MW-03

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- T1-MW-03 Monitoring Well Location
- T1-EA1-CS1 Excavation Area 1 Confirmatory Sample Location
- T1-EA2-CS1 Excavation Area 2 Confirmatory Sample Location
- T1-EA3-CS1 Excavation Area 3 Confirmatory Sample Location
- T1-EA4-CS1 Excavation Area 4 Confirmatory Sample Location
- T1-EA5-CS1 Excavation Area 5 Confirmatory Sample Location
- T1-EA7-CS1 Excavation Area 7 Confirmatory Sample Location
- T1-EA10-N Excavation Area 10 Confirmatory Sample Location
- B-30 AMEC Soil Boring Location, 2011-2013
- SB-15 EA Soil Boring Location, 2008

Soil Boring Sample Results Box

T1-EA1-CS29	8/29/13	Sample Name and Date
Benzo(a)anthracene	172	Soil Boring Sample Results

J Denotes estimated concentration

NOTE

Laboratory results reported as µg/kg.

100 0 100
SCALE: 1"=100'

BRIGHTFIELDS, INC.
TRACT I SITE
NIAGARA FALLS, NEW YORK

Project No.: 3410130921

amec MACTEC Engineering & Consulting, P.C.

Environment & Infrastructure - Pittsburgh
800 North Bell Avenue
Carnegie, Pennsylvania 15106

CURRENT VOCs CONDITIONS

Figure: 10

10

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DRAWN BY: NEL 2-6-2014 APPROVED BY: SCC

SB-02	0.0-2.0'	9/30/08
Aluminium		11,100 J
Arsenic		3.3 J
Barium		90.8 J
Beryllium		0.5 J
Cadmium		0.13 J
Calcium		66,000
Chromium		16.3 J
Cobalt		8.8 J
Copper		19.3
Iron		27,100
Magnesium		9,090 J
Manganese		652 J
Nickel		19.9 J
Potassium		1,710 J
Sodium		137 J
Vanadium		20.7 J
Zinc		39 J

SB-01	0.0-2.0'	9/30/08
Aluminium		14,500 J
Arsenic		4.6 J
Barium		110 J
Beryllium		0.75 J
Cadmium		0.21 J
Calcium		74,200
Chromium		22.6 J
Cobalt		26.4 J
Copper		27.6
Iron		31,900
Magnesium		11,200 J
Manganese		606 J
Nickel		25.90 J
Potassium		2,620 J
Sodium		161 J
Vanadium		30.6 J
Zinc		52.5 J

SB-07	0.0-2.0'	9/30/08
Aluminium		13,500 J
Arsenic		5.4 J
Barium		141 J
Beryllium		0.6 J
Cadmium		0.29 J
Calcium		43,800
Chromium		32.2 J
Cobalt		8.3 J
Copper		28.3
Iron		25,100
Magnesium		7,930 J
Manganese		597 J
Nickel		19.7 J
Potassium		2,480 J
Sodium		131 J
Vanadium		23.5 J
Zinc		74.7 J

SB-10	0.0-2.0'	9/30/08
Aluminium		18,700 J
Antimony		2.2 J
Arsenic		4.9 J
Barium		151 J
Beryllium		0.92 J
Cadmium		0.24 J
Calcium		63,600
Chromium		28.3 J
Cobalt		12.4 J
Copper		27.4
Iron		38,000
Magnesium		11,400 J
Manganese		556 J
Mercury		0.094
Nickel		31.3 J
Potassium		4,040 J
Sodium		159 J
Vanadium		36.5 J
Zinc		65.4 J

SB-09	0.0-2.0'	9/30/08
Aluminium		18,200 J
Arsenic		5 J
Barium		133 J
Beryllium		1 J
Cadmium		0.13 J
Calcium		3,100
Chromium		24.7 J
Cobalt		11 J
Copper		27.2
Iron		34,600
Magnesium		5,840 J
Manganese		470 J
Nickel		28.3 J
Potassium		1,770 J
Sodium		96.1 J
Vanadium		33.9 J
Zinc		59.6 J

T1-MW-01	0.5-1.0'	7/18/12
Aluminium		17,500
Arsenic		6.1
Barium		281
Beryllium		1.1
Cadmium		0.46
Calcium		33,500
Chromium		20.4
Cobalt		13.1
Copper		28.1
Iron		25,200
Magnesium		7,900
Manganese		795
Mercury		0.037
Nickel		25.1
Potassium		2,470
Sodium		247
Vanadium		19.9
Zinc		211

T1-EA9-CS12	11/12/13
Arsenic	2.2
Barium	90.4
Copper	17.4

T1-EA5-CS1	6/11/13
Chromium	79.8

T1-EA5-CS4	6/11/13
Chromium	33.4

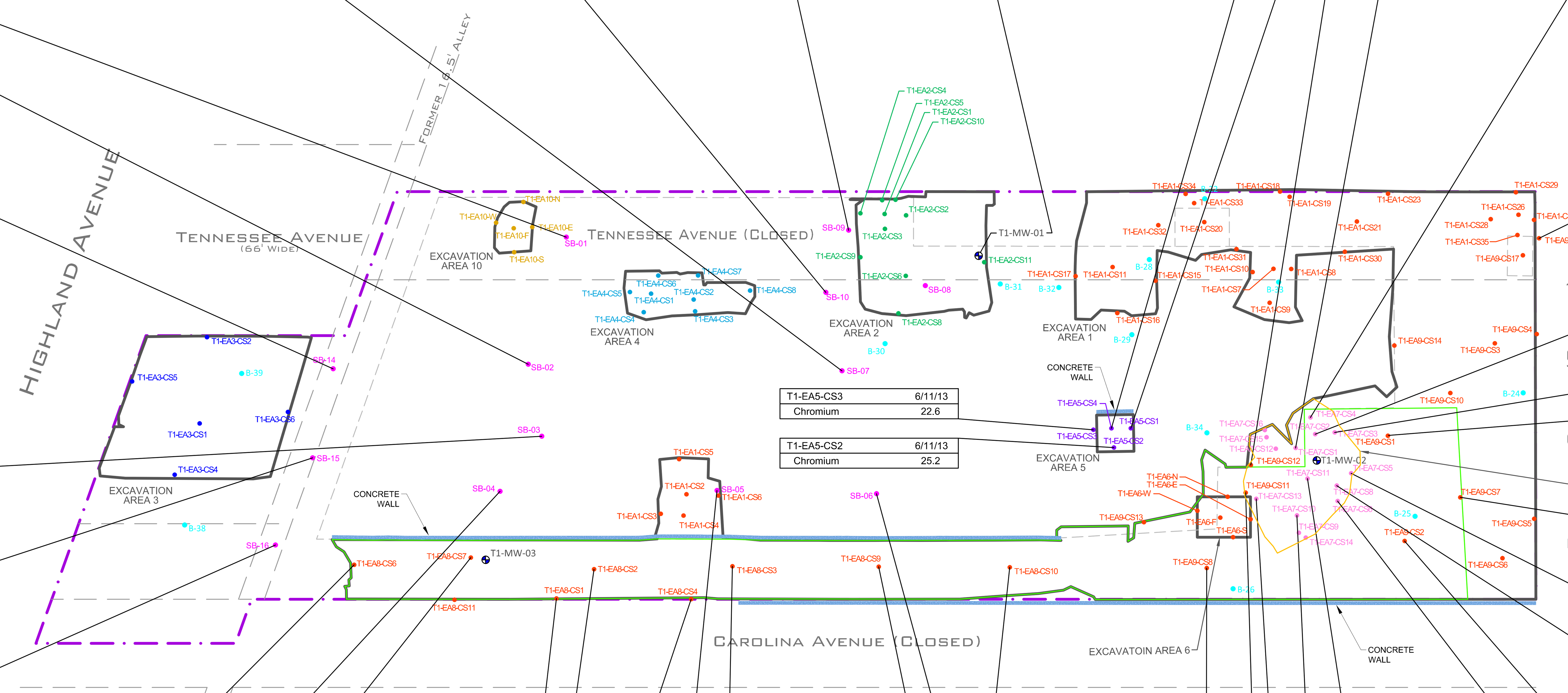
T1-EA7-CS1	9/20/13
Aluminium	14,200
Arsenic	3.6
Barium	104
Beryllium	0.68
Cadmium	0.44
Calcium	53,200
Chromium	19.9
Cobalt	12
Copper	22.6
Iron	22,400 J
Magnesium	10,400
Manganese	644
Nickel	28.6
Potassium	2,500
Sodium	243
Vanadium	24.4
Zinc	187

T1-EA7-CS4	9/20/13
Aluminium	12,000
Arsenic	4.5
Barium	83.4
Beryllium	0.60
Cadmium	0.27
Calcium	50,600
Chromium	16.4
Cobalt	9.8
Copper	27.7
Iron	21,000 J
Magnesium	11,400
Manganese	540
Nickel	24.1
Potassium	2,150
Sodium	255
Vanadium	21.8
Zinc	88.1

T1-EA9-CS16	12/5/13
Aluminium	15,300
Arsenic	4.9
Barium	160
Beryllium	0.75
Cadmium	0.61
Calcium	12,100
Chromium	16.5
Cobalt	5.7
Copper	37.7
Iron	14,000
Magnesium	3140
Manganese	158
Nickel	17.2
Potassium	1,370
Vanadium	19.3
Zinc	149
Mercury	0.13

SB-14	0.0-2.0'	9/30/08
Aluminium		24,500 J
Arsenic		5.9 J
Barium		174 J
Beryllium		1.8 J
Cadmium		0.26
Calcium		2,790
Chromium		32.2 J
Cobalt		15.5 J
Copper		36.5
Iron		46,200
Magnesium		7,960 J
Manganese		601 J
Nickel		38 J
Potassium		2,860 J
Sodium		77.9 J
Vanadium		40.6 J
Zinc		86.9 J

SB-03	0.0-2.0'	9/30/08
Aluminium		9,430 J
Arsenic		3.3 J
Barium		63.6 J
Beryllium		0.44 J
Cadmium		0.13 J
Calcium		55,500
Chromium		12.9 J
Cobalt		9 J
Copper		33.9
Iron		23,400
Magnesium		9,130 J
Manganese		682 J
Mercury		0.015 J
Nickel		17.7 J
Potassium		1,480 J
Sodium		125 J
Vanadium		19.4 J
Zinc		39.2 J



T1-EA5-CS3	6/11/13
Chromium	22.6

T1-EA5-CS2	6/11/13
Chromium	25.2

T1-EA7-CS2	9/20/13
Aluminium	6,660
Barium	58
Beryllium	0.34
Cadmium	0.4
Calcium	110,000
Chromium	9.3
Cobalt	4.7
Copper	191
Iron	14,000 J
Magnesium	29,000
Manganese	853
Nickel	13.6
Potassium	1,500
Vanadium	14.8
Zinc	117

T1-EA7-CS3	9/20/13
Aluminium	13,700
Arsenic	6.1
Barium	124
Beryllium	0.71
Cadmium	0.89
Calcium	44,200
Chromium	19.2
Cobalt	11.1
Copper	40.4
Iron	26,500 J
Magnesium	9,390
Manganese	537
Nickel	27.4
Potassium	2,600
Sodium	687
Vanadium	25.2
Zinc	197
Mercury	0.079 J

T1-EA9-CS1	10/8/13
Arsenic	4.7
Barium	64.8
Copper	17.8

EXCAVATOIN AREA 7

T1-EA9-CS7	10/9/13
Arsenic	3.1
Barium	131
Copper	44.1

T1-EA7-CS5	9/20/13
Aluminium	12,800
Arsenic	5.3
Barium	85.5
Beryllium	0.72
Cadmium	0.32
Calcium	51,400
Chromium	17.6
Cobalt	12.6
Copper	25.7
Iron	22,600 J
Magnesium	8,410
Manganese	528
Nickel	27.8
Potassium	2,340
Sodium	183
Vanadium	27.2
Zinc	103
Mercury	0.046 J

SB-15	0.0-2.0'	9/30/08
Aluminium		22,300
Arsenic		2.4
Barium		72.4
Beryllium		0.9
Calcium		31,400
Chromium		28.3
Cobalt		8 J
Copper		24.1
Iron		32,400
Magnesium		12,500
Manganese		311 J
Nickel		25.8
Potassium		3,700 J
Sodium		230
Vanadium		33.6
Zinc		60.3 J

SB16	0.0-2.0'	9/30/08
Aluminium		11,300
Arsenic		5.40
Barium		70.1
Beryllium		0.49
Calcium		55,500
Chromium		15.1
Cobalt		9.6 J
Copper		22.2
Iron		24,500
Magnesium		8,620
Manganese		859
Nickel		20.9 J
Potassium		2,000
Sodium		140
Vanadium		22.4
Zinc		42.3 J

T1-EA8-CS6	10/24/13
Arsenic	3.9
Barium	110
Copper	25.9

T1-EA8-CS7	10/24/13
Arsenic	8
Barium	112
Copper	24.1

T1-EA8-CS10	10/24/13
Arsenic	6.1
Barium	166
Copper	27.8

T1-EA8-CS1	10/4/13
Arsenic	4.5
Barium	52.3
Copper	18.5

T1-EA8-CS3	10/4/13
Arsenic	5.2
Barium	99.5
Copper	22.4

T1-EA9-CS8	11/12/13
Arsenic	4.3
Barium	125
Copper	22.8

T1-EA8-CS2	10/4/13
Arsenic	3.9
Barium	110
Copper	25.5

T1-EA8-CS9	10/24/13
Arsenic	4.8
Barium	131
Copper	22.9

T1-EA9-CS11	11/12/13
Arsenic	3.1
Barium	36.6
Copper	27.9

T1-EA8-CS4	10/8/13
Arsenic	6
Barium	121
Copper	28.5

SB-04	0.0-2.0'	9/30/08
Aluminium		15,200 J
Arsenic		4.7 J
Barium		102 J
Beryllium		0.74 J
Cadmium		0.18 J
Calcium		77,700
Chromium		21.5 J
Cobalt		8.9 J
Copper		28.7
Iron		29,000
Magnesium		11,200 J
Manganese		449 J
Nickel		22.2 J
Potassium		2,530 J
Sodium		168 J
Vanadium		30.8 J
Zinc		48.2 J

T1-EA7-CS6	9/20/13
Aluminium	23,800
Arsenic	3.8
Barium	246
Beryllium	1.1
Calcium	7,470
Chromium	28.8
Cobalt	12.8
Copper	25.8
Iron	27,400 J
Magnesium	7,670
Manganese	356
Nickel	36.9
Potassium	2,510
Vanadium	32.3
Zinc	71.8

T1-EA9-CS2	10/8/13
Arsenic	3.5
Barium	87.8
Copper	15.4

T1-EA7-CS8	9/20/13
Aluminium	16,900
Arsenic	7.5
Barium	161
Beryllium	0.91
Cadmium	5.3
Calcium	31,400
Chromium	21.8
Cobalt	12.5
Copper	29
Iron	29,700 J
Magnesium	8,770
Manganese	531
Nickel	31.4
Potassium	3,090
Vanadium	32.4
Zinc	706

T1-EA7-C11	11/12/13
Aluminium	11,800
Arsenic	4.7
Barium	83.7
Beryllium	0.75
Cadmium	0.88
Calcium	45,100
Chromium	18.1
Cobalt	8.9
Copper	22.7
Iron	20,400
Magnesium	8,840
Manganese	488
Nickel	21.6
Potassium	1,670
Vanadium	23.6
Zinc	173

SB-05	0.0-2.0'	9/30/08
Aluminium		9,460 J
Arsenic		4.4 J
Barium		61.40 J
Beryllium		0.48 J
Cadmium		0.13 J
Calcium		3,340
Chromium		13.4 J
Cobalt		10.2 J
Copper		20.8
Iron		22,400
Magnesium		4,540 J
Manganese		976 J
Nickel		21.4 J
Potassium		1,090 J
Sodium		91 J
Vanadium		19.9 J
Zinc		44.4 J

SB-06	0.0-2.0'	9/30/08
Aluminium		16,800
Arsenic		4.1 J
Barium		94.9 J
Beryllium		0.720 J
Cadmium		0.250
Calcium		45,500
Chromium		20.5 J
Cobalt		11.7 J
Copper		24.3
Iron		29,000
Magnesium		10,200 J
Manganese		661 J
Nickel		23.8 J
Potassium		2,280 J
Sodium		155 J
Vanadium		28.9 J
Zinc		65.8 J

T1-EA7-CS13	11/12/13
Aluminium	6,190
Arsenic	4.5
Barium	55.7
Beryllium	0.53
Calcium	34,700
Chromium	9.6
Copper	24.1
Iron	13,800
Magnesium	6,730
Manganese	579
Nickel	12.5
Potassium	1,060
Vanadium	15.4
Zinc	38.4

T1-EA7-CS10	11/12/13
Aluminium	14,600
Arsenic	2.8
Barium	110
Beryllium	1
Cadmium	6.4
Calcium	5,080
Chromium	20.2
Cobalt	9.1
Copper	33.5
Iron	21,900
Magnesium	6,270
Manganese	198
Nickel	25.8
Potassium	823
Vanadium	23.8
Zinc	3,220

LEGEND

- Property Boundary
- Footprint of Demolished Structure
- Excavation Limits
- Portion of excavation completed for Non-Lead Metals
- T1-MW-03 — Monitoring Well Location
- T1-EA1-CS1 — Excavation Area 1 Confirmatory Sample Location
- T1-EA2-CS1 — Excavation Area 2 Confirmatory Sample Location
- T1-EA3-CS1 — Excavation Area 3 Confirmatory Sample Location
- T1-EA4-CS1 — Excavation Area 4 Confirmatory Sample Location
- T1-EA5-CS1 — Excavation Area 5 Confirmatory Sample Location
- T1-EA7-CS1 — Excavation Area 7 Confirmatory Sample Location
- T1-EA10-N — Excavation Area 10 Confirmatory Sample Location
- B-30 — AMEC Soil Boring Location, 2011-2013
- SB-15 — EA Soil Boring Location, 2008

Soil Boring Sample Results Box

T1-EA1-CS29	8/29/13	Sample Name and Date
Benzo(a)anthracene	172	Soil Boring Sample Results
Benzo(a)anthracene	172	Concentration exceeds respective Restricted Residential Soil Cleanup Objective .

J — Denotes estimated concentration

NOTE

Laboratory results reported as mg/kg.

60 0 60
SCALE: 1"=60'

BRIGHTFIELDS, INC.
TRACT I SITE
NIAGARA FALLS, NEW YORK

Project No.: 3410130921

amec MACTEC Engineering & Consulting, P.C.

Environment & Infrastructure - Pittsburgh
800 North Bell Avenue
Carnegie, Pennsylvania 15106

NON-LEAD METALS
CURRENT CONDITIONS

Figure: 11

11

P:\PROJECTS\Honeywell\Niagara Falls\3410130921 – Brightfields\CADD\FINAL\AAR\Current Conditions\T1 Excavations Current Metals 11.dwg Mon, 19 May 2014 – 11:00am nancy.lagattuta

DRAWN BY: NEL 3-4-2014 APPROVED BY: SCC

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HIGHLAND AVENUE

FORMER 16.5' ALLEY

TENNESSEE AVENUE (66' WIDE)

TENNESSEE AVENUE (CLOSED)

FIFTEENTH STREET (CLOSED)

CAROLINA AVENUE (CLOSED)

EXCAVATION AREA 1

EXCAVATION AREA 2

EXCAVATION AREA 3

EXCAVATION AREA 4

EXCAVATION AREA 5

EXCAVATOIN AREA 6

EXCAVATOIN AREA 7

EXCAVATION AREA 10

CONCRETE WALL

CONCRETE WALL

CONCRETE WALL

T1-MW-01

T1-MW-02

T1-MW-03

T1-EA10-N T1-EA10-W T1-EA10-E T1-EA10-F T1-EA10-S

T1-EA2-CS4 T1-EA2-CS5 T1-EA2-CS1 T1-EA2-CS10 T1-EA2-CS2 T1-EA2-CS3 T1-EA2-CS9 T1-EA2-CS6 T1-EA2-CS11 T1-EA2-CS8

T1-EA4-CS7 T1-EA4-CS6 T1-EA4-CS5 T1-EA4-CS2 T1-EA4-CS8 T1-EA4-CS1 T1-EA4-CS4 T1-EA4-CS3

T1-EA3-CS2 T1-EA3-CS5 T1-EA3-CS6 T1-EA3-CS1 T1-EA3-CS4

T1-EA1-CS5 T1-EA1-CS2 T1-EA1-CS6 T1-EA1-CS3 T1-EA1-CS4

T1-EA8-CS6 T1-EA8-CS7 T1-EA8-CS2 T1-EA8-CS3 T1-EA8-CS9 T1-EA8-CS10 T1-EA8-CS1 T1-EA8-CS4 T1-EA8-CS11

T1-EA5-CS4 T1-EA5-CS1 T1-EA5-CS3 T1-EA5-CS2

T1-EA1-CS34 T1-EA1-CS33 T1-EA1-CS18 T1-EA1-CS19 T1-EA1-CS23 T1-EA1-CS32 T1-EA1-CS20 T1-EA1-CS21 T1-EA1-CS31 T1-EA1-CS10 T1-EA1-CS30 T1-EA1-CS17 T1-EA1-CS11 T1-EA1-CS15 T1-EA1-CS8 T1-EA1-CS7 T1-EA1-CS9 T1-EA1-CS16 T1-EA1-CS29 T1-EA1-CS26 T1-EA1-CS27 T1-EA1-CS28 T1-EA1-CS35 T1-EA9-CS16 T1-EA9-CS17

T1-EA9-CS4 T1-EA9-CS3 T1-EA9-CS14 T1-EA9-CS10

T1-EA7-CS4 T1-EA7-CS2 T1-EA7-CS3 T1-EA7-CS16 T1-EA7-CS15 T1-EA7-CS12 T1-EA9-CS1 T1-EA9-CS12 T1-EA7-CS11 T1-EA7-CS5 T1-EA7-CS13 T1-EA7-CS8 T1-EA7-CS10 T1-EA7-CS6 T1-EA7-CS9 T1-EA7-CS14 T1-EA9-CS7 T1-EA9-CS5 T1-EA9-CS2 T1-EA9-CS6

T1-EA6-N T1-EA6-E T1-EA6-W T1-EA9-CS13 T1-EA6-F T1-EA6-S T1-EA9-CS11 T1-EA9-CS8

B-22 B-28 B-31 B-32 B-33 B-29 B-30 B-34 B-24 B-25 B-26 B-39 B-38

SB-01 SB-02 SB-03 SB-04 SB-05 SB-06 SB-07 SB-08 SB-09 SB-10 SB-14 SB-15 SB-16

LEGEND

	Property Boundary
	Footprint of Demolished Structure
	Excavation Limits
	Portion of excavation completed for UST Removal
T1-MW-03	Monitoring Well Location
T1-EA1-CS1	Excavation Area 1 Confirmatory Sample Location
T1-EA2-CS1	Excavation Area 2 Confirmatory Sample Location
T1-EA3-CS1	Excavation Area 3 Confirmatory Sample Location
T1-EA4-CS1	Excavation Area 4 Confirmatory Sample Location
T1-EA5-CS1	Excavation Area 5 Confirmatory Sample Location
T1-EA7-CS1	Excavation Area 7 Confirmatory Sample Location
T1-EA10-N	Excavation Area 10 Confirmatory Sample Location
B-30	AMEC Soil Boring Location, 2011-2013
SB-15	EA Soil Boring Location, 2008

80 0 80

SCALE: 1"=80'

BRIGHTFIELDS, INC.
TRACT I SITE
NIAGARA FALLS, NEW YORK

Project No.: 3410130921

amec MACTEC Engineering & Consulting, P.C.

Environment & Infrastructure - Pittsburgh
800 North Bell Avenue
Carnegie, Pennsylvania 15106

UST EXCAVATION LIMITS

Figure: 12

12

APPENDIX A
TRACT I NYSDEC FACT SHEET

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Disclaimer

The New York State Department of Environmental Conservation has added a link to a translation service developed by Microsoft Inc., entitled Bing Translator, as a convenience to visitors to the DEC website who speak languages other than English.

Additional information can be found at DEC's Language Assistance Page.

Tract I Highland Avenue BCP Site

Site Number C932157

Fact Sheet - August 2013

Tract I Update: Status of Cleanup Actions at the Tract I Brownfield Site

See also **Tract II - Highland Avenue State Superfund Site** (Site Number 932136).

Clean-up Action is continuing at the site to address the contamination related to the Tract I Highland Avenue site ("site") located at 3123 Highland Avenue, Niagara Falls, Niagara County under New York State's Brownfield Cleanup Program (BCP). Please see the map for the **Site Location**.

Aerial view of Tract I site

Documents related to the cleanup of this site can be found at the locations identified below under **Where to Find Information**.

The cleanup activities are being performed by the Brightfields Corporation with oversight provided by New York State Department of Environmental Conservation (DEC).

Cleanup Activity Highlights

The goal of the cleanup action for the site is to achieve cleanup levels that protect public health and the environment.

Work Completed to Date Includes:

- Installation of security fencing around the perimeter of the site,
- Delivery and set-up of personnel trailer and equipment,
- Removal of the hazardous substances and site debris,
- Asbestos abatement within building structures; and
- Demolition of the former Power City Warehouse Building to grade including the removal of concrete floors and foundations, including filling in the basement area with clean backfill.

On-Going Work/Yet to Be Completed:

- Excavation and staging of the remaining contaminated soils in preparations for off-site disposal;
- Removal of Underground Storage tanks discovered on the site; and
- Final site grading.

Cleanup activities began in the Fall of 2012 and are expected to be completed this Fall.

Next Steps

After Brightfields completes the cleanup activities, they will prepare a Final Engineering Report (FER) and submit it to DEC. The FER will describe the cleanup activities completed and certify that cleanup requirements have been achieved or will be achieved.

When DEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the FER. DEC will then issue a Certificate of Completion (COC) to the applicant.

The applicant would be able to redevelop the site after receiving a COC. In addition, the applicant:

- Would have no liability to the State for contamination at or coming from the site, subject to certain conditions; and
- Would be eligible for tax credits to offset the costs of performing cleanup activities and for redevelopment of the site.

A fact sheet that describes the content of the FER will be sent to the site contact list. The fact sheet will identify any institutional controls (for example, deed restrictions) or engineering controls (for example, a site cap) necessary at the site in relation to the issuance of the COC.

Background

Location: The Tract I site is located in a mixed light industrial, commercial and residential area at 3123 Highland Ave in the City of Niagara Falls in Niagara County. It is approximately 5.90 acres and is bounded by Highland Ave to the west, the Tulip Corporation, a plastic recycling company to the north, a 60 foot wide National Grid Corp. utility right-of-way to the east and the Tract II Highland Avenue State Superfund Site (DEC Site Number 932136) to the south and east. Several commercial establishments and the Niagara Falls Alternative School are located to the west of the Property. Residential areas are located approximately 400 feet south and 700 feet east of the site.

Site Features: The site was mostly covered (approximately 3.3 acres) by the former Power City Warehouse Building, a three-story masonry building, which was in various levels of disrepair (the building has been demolished, as noted above). A small one-story building (approximately 462 square feet) is located in the northeast corner of the site. Roughly 30 percent of the site was grass and concrete surface, 15 percent wooded and undergrowth, and approximately 55 percent building structures. The western portion of the site consisted of a grassy area and a gravel drive to the loading dock area.

Historical Uses: The Power City Warehouse was formerly a battery manufacturing facility. Sometime around 1910, U.S. Light and Hest Co., and later Autolite Co., began automobile, truck, and tractor battery manufacturing. Prestolite Co. acquired the facility in the 1960s and retooled operations for manufacturing of hard rubber battery cases, filling of batteries with sulfuric acid, and battery charging. Operations at the facility ceased in the mid-1970s and relocated to 3001 Highland Avenue. After battery manufacturing ended in the mid-1970s, the site was used as an automotive body shop and a warehouse. The site has been vacant since the late 1980s. In 1990, the city of Niagara Falls retained

ownership of the site due to tax foreclosure. Due to historical operations at the site, there were environmental concerns about potential residual impacts associated with the battery manufacturing processes.

Brownfield Cleanup Program: In December 2011, Brightfields Corporation submitted a BCP application to further evaluate the contamination at the site, and to evaluate remedial alternatives to address this contamination. This site was accepted into the BCP in March 2012. A Brownfield Cleanup Agreement between the applicant and DEC was executed in April 2012. The applicant submitted an IRM work plan for building demolition, a Data summary report and a RI WP which have been approved by DEC.

Additional site details, including environmental and health assessment summaries, are available on DEC's website.

Air Monitoring Data

Six real-time air monitoring stations continually monitor dust and weather during demolition and cleanup activities. These monitors contain alarms to indicate if dust is exceeding limits set by governmental regulatory agencies. In the event any limit is exceeded, work will immediately cease, a thorough evaluation will be performed, and corrective measures will be taken prior to work resuming. All air monitoring results are available for public review by clicking on the air monitoring link in the right hand margin.

All air monitoring results are available for public review at the project document depository located in the **Doris Jones Family Resource Center**.

Brownfield Cleanup Program

New York's BCP encourages the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and redeveloped. These uses include recreation, housing, business or other uses. A brownfield is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination.

Where to Find Information

Project documents are available at the following locations to help the public stay informed.

Doris W. Jones Family Resource Center
3001 9th Street
Niagara Falls, NY 14305
716-285-5374

DEC Region 9 Office
270 Michigan Avenue
Buffalo, NY 14203
716-851-7220

Who to Contact

Comments and questions are always welcome and should be directed as follows:

Project Related Questions
Timothy Dieffenbach
Department of Environmental Conservation

Division of Environmental Remediation
270 Michigan Ave
Buffalo, NY 14203
716-851-7220

Site-Related Health Questions
Matthew Forcucci
New York State Department of Health
584 Delaware Avenue
Buffalo, NY 14202
716-847-4501
beei@health.state.ny.us

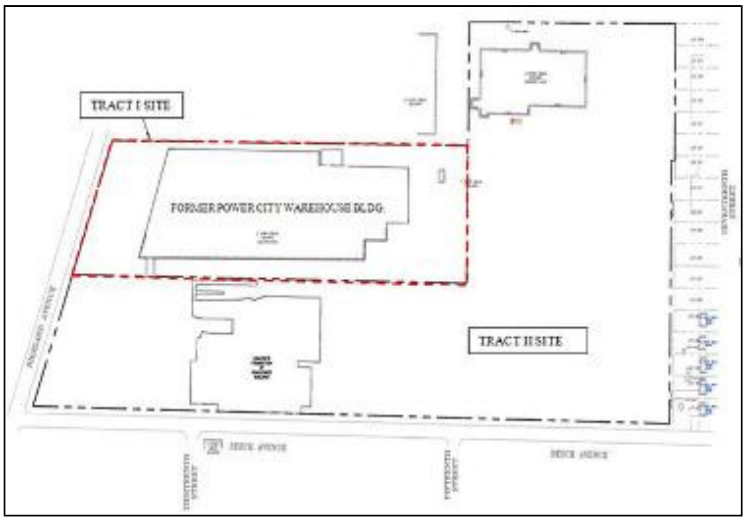
For More Information

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

***Receive Site Fact Sheets by Email**

Have site information such as this fact sheet sent right to your email inbox. DEC invites you to sign up with one or more contaminated sites county email listservs available. It's *quick*, it's *free*, and it will help keep you *better informed*.

Site Location



Tract I Brownfield site (in red) in relation to the Tract II Superfund site

APPENDIX B
CITY OF NIAGARA FALLS GROUNDWATER USE ORDINANCE

I hereby certify that the following Local Law was adopted at a meeting of the City Council held on October 4, 2010.

NIAGARA FALLS LOCAL LAW NO. 4 FOR THE YEAR 2010

A Local Law to amend the Niagara Falls City Charter as amended, by adopting a local law relative to prohibiting the use of groundwater as a potable water supply or for other purposes by the installation or use of water supply wells.

BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF NIAGARA FALLS, NEW YORK, as follows:

Section 1. The Niagara Falls City Charter, as amended, is hereby amended by adopting a Local Law relative to prohibiting the use of groundwater as a potable water supply or for other purposes by the installation or use of water supply wells to read as follows:

Section 1. Intent, Purpose and Findings.

A. Certain properties in the City of Niagara Falls, New York ("City") have been used over several decades for commercial/industrial purposes. Because of said use, concentrations of certain chemical constituents in the groundwater beneath certain areas of the City are known or may exceed groundwater quality standards as set forth in 6 New York Codes, Rules, and Regulations ("NYCRR") Part 703. The use of wells to supply groundwater for any purpose may cause or influence the migration of chemical constituents within groundwater located within the City.,

B. The use of wells to supply groundwater may have a deleterious effect on those persons exposed to contaminated groundwater pumped from such wells.

C. Groundwater remediation systems are designed to address groundwater and have been installed at numerous properties within the City to remediate and control contaminated groundwater. The effectiveness of the groundwater remediation systems in the City may be significantly impacted by the uncontrolled extraction of groundwater. Any reduction of the effectiveness of groundwater remediation systems in the City would impact the health, safety, and general welfare of the current and future residents of the City.

D. The City desires to limit potential threats to human health while facilitating the redevelopment and productive use of properties that are impacted by groundwater contamination within the City. The ramifications to the public health, safety, and welfare from potential exposure to contaminated groundwater and the potential impacts to groundwater remediation systems far outweigh the benefit of allowing the use of wells to supply groundwater for commercial, industrial, agricultural, residential, and other purposes in certain areas of the City.

E. The purpose of this Local Law is to protect the health, safety, and general welfare of the current and future residents of the City of Niagara Falls. It is also the purpose of this Local Law to prevent the extraction and use of well water within the City for any non-remedial purpose.

Section Two. Water Production Wells Within the City.

1. Scope. The provisions of this section shall apply to all water production wells located in the City of Niagara Falls, other than remediation wells installed and operated as part of an engineered remedial program approved by the New York State Department of Environmental Conservation and/or the United States Environmental Protection Agency or monitoring wells used solely for monitoring in connection with the investigation of soil and groundwater contamination ("Remediation Wells").

2. New Water Production Wells Prohibited. No person shall commence construction of or operate a new water production well within the City of Niagara Falls after the effective date of the ordinance codified by this section. This prohibition shall not apply to Remediation Wells.

3. Registration of Pre-Existing Water Production Wells. Any person, corporation, partnership or other entity which owns property in the City, which has a water production well in operation as of the effective date of this Local Law, other than a Remediation Well, shall register said well with the City and the Niagara Falls Water Board. Registration shall include, but not be limited to, exact location of the well, well history, well specifications, monthly operating information, and an assessment of the well's vulnerability to contaminants. Upon registration of a water production well, the City and the Niagara Falls Water Board shall have the right, upon reasonable notice, to inspect any water production well. The well registration must be renewed every five (5) years from the date of the last valid registration until the City and the Niagara Falls Water Board have received written notice that the water production well has been properly plugged and sealed in accordance with New York State Department of Environmental Conservation Regulations. If ownership of a property in the City with a water production well changes, the new owner must re-register the well within thirty (30) days of the transfer. Any pre-existing water production well, other than a Remediation Well as defined above, shall, upon discontinuance of use, be plugged and sealed in accordance with the New York State Department of Environmental Conservation regulations at the owner's cost.

4. Termination of Right to Operate Water Production Wells. If a pre-existing water production well is not used for a period of six (6) consecutive months, then the well shall no longer be considered a pre-existing water production well and the well shall be plugged and sealed within 90 days in accordance with New York State Department of Environmental Conservation regulations at the owner's cost. The owner shall notify the City and the Niagara Falls Water Board in writing that the water production well has been plugged and sealed.

Section Three. Penalty.

Any person who shall violate a provision of this section or who shall fail to comply with any of the requirements thereof shall be subject to a civil penalty of $5,000.00 for each violation. Each day that a violation is allowed to continue shall constitute a separate and distinct violation.

Section Four. Repealer.

All ordinances or parts of ordinances in conflict with this section are hereby repealed insofar as they are in conflict with this section.

Section Five. Severability

If any provision of this Local Law or its application to any person or under any circumstances should be adjudged invalid, such adjudication shall not affect the validity of the Local Law as a whole or of any portion not adjudged invalid.

Section 2. This Local Law shall take effect as provided in the Municipal Home Rule Law.

Witness my hand and seal this
5th day of October, 2010.

Carol A. Antonucci
City Clerk

MAYOR'S APPROVAL Paul A. Dyster

MAYOR'S VETO _____

DATE 10/14/10