ALTERNATIVE ANALYSIS REPORT & REMEDIAL ACTION WORK PLAN

FORMER HAIGHT /AMERICAN HIDE
125 BATH STREET
BALLSTON SPA, NEW YORK
BCP Site # C546055-10-12

PREPARED FOR:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
OFFICE OF ENVIRONMENTAL QUALITY REGION 5
1115 ROUTE 86 - PO BOX 296
RAY BROOK, NEW YORK 12977
AND
JJB 125 Bath. LLC
BALLSTON SPA, NY 12020

PREPARED BY:

NORTHEASTERN ENGINEERING TECHNOLOGIES PLLC
P.O. BOX 2167
BALLSTON SPA, NEW YORK 12020

DATED:

AUGUST 12, 2019

"….. providing integrated geo-environmental, engineering and geotechnical services ….."

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LIST OF ACRONYMS

AMSL	**Above Mean Sea Level**
Angelica	**RFID Textile Services, Inc. (f/k/a Angelica Textile Services, Inc.)**
AST	**Above Ground Storage Tank**
BCA	**Brownfield Cleanup Agreement**
BCP	**Brownfield Cleanup Program**
BGS	**Below Ground Surface**
CAMP	**Community Air Monitoring Plan**
CBD	**Commercial Business District**
CCR	**Construction Completion Report**
COC	**Compounds of Concern**
DUSR	**Data Usability Summary Report**
ECI	**Environmental Compliance, Inc.**
EM	**Electromagnetic Conductivity**
ESA	**Environmental Site Assessment**
ESMI	**Environmental Soil Management Inc.**
GTS	**Galloway Technical Services**
HASP	**Health and Safety Plan**
IRM	**Interim Remedial Measures**
KOMAN	**KOMAN Government Solutions, LLC**
NAPL	**Non-aqueous Phase Liquids**
NET	**Northeastern Engineering Technologies, PLLC**
NETC	**Northeastern Environmental Technologies Corporation**
NYDOH	**New York State Department of Health**
NYSDEC	**New York State Department of Environmental Conservation**
PBS	**Petroleum Bulk Storage**
PCB	**Polychlorinated Biphenyl**
PCS	**Petroleum Contaminated Soil**
PEL	**Phoenix Environmental Laboratories, Inc.**
PID	**Photoionization Detector**
PPM	**Parts Per Million**
QA/QC	**Quality Assurance/Quality Control**
REC	**Recognized Environmental Condition**
RI	**Remedial Investigation**
SCOs	**Soil Cleanup Objectives**
SRI	**Supplemental Remedial Investigation**
SSA	**Sole Source Aquifers**
SVOC	**Semi-Volatile Organic Compound**
USDA	**United States Department of Agriculture**
UST	**Underground Storage Tank**
VOC	**Volatile Organic Compound**

ENGINEERING CERTIFICATION

I, Keith D. Rupert, P.E. , certify that I am currently a NYS registered professional engineer and that this Alternative Analysis Report/ Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-1O).

Keith D. Rupert, P.E. License No. 066843-1

1.0 INTRODUCTION

On behalf of the owner and Brownfields Cleanup Program (BCP) applicant JJB 125 Bath LLC; Northeastern Engineering Technologies, PLLC (NET) has prepared this Remedial Alternative Analysis Report / Remedial Action Work Plan (RAAR / RAWP) detailing potential remedial alternatives as well as providing an remedial action work plan for the selected remedy for the Former Haight/American Hide Tannery Site located at 125 Bath Street, Ballston Spa, Saratoga County, New York and New York State Department of Environmental Conservation (NYSDEC) BCP Site No. C546055. Hereinafter, this property will be referred to as the "Site".

The protocols used in the preparation of this RAAR / RAWP for the Former Haight/American Hide Tannery Site are in general accordance with requirements pursuant to Title 6 of the New York Codes, Rules, and Regulations (6NYCRR) Part 375 Environmental Remediation Programs Subpart 375.3 Brownfield Cleanup Program as well as applicable guidance documents including NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation issued May 2010 (DER-10), CP-51 Soil Cleanup Guidance issued October 2010, and New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York issued October 2006 as updated May 2017 (Guidance Documents).

The remedial alternatives presented in this RAAR / RAWP were evaluated on information developed during various pre-BCP activities as well as the soil, vapor and groundwater quality data presented in the March 2014 remedial investigation (RI) report as updated June 2014 prepared by Environmental Compliance, Inc. (ECI) and the July 2019 supplemental remedial investigation (SRI) report prepared by NET. This RAAR and RAWP summarizes the findings of the RI and SRI for the Site; however, the RI and SRI reports should be referenced for greater details. The remedial alternatives presented herein have been developed in response to the findings of the RI and SRI reports and have been developed in conjunction with the NYSDEC and NYSDOH Guidance Documents referenced above. Based on the use of the surrounding area and the going forward contemplated mixed commercial/residential use of the Site, appropriate remedial alternatives are recommended for implementation. The RAWP details the specific actions necessary to implement the recommended remedial alternative for the contemplated mixed commercial/residential use of the Site.

1.1 Site Description

The Site; a single 6.35 acre commercial business district (CBD) zoned parcel of land (see **Appendix A**, for zoning code), is located in the Town of Milton, Village of Ballston Spa, Saratoga County, New York (see **Appendix B**, **Figure 1**). The Site, located at 125 Bath Street immediately north of Gordon Creek and the intersection of Bath Street and Hamilton Avenue is identified by the Village of Ballston Spa as Tax Map No. 216.32 – 1- 96.2. A mixture of single family and multi-family residential properties exist north, south, and east of the Site. Unimproved wooded land, a bike path of the Village of Ballston Spa and the Saratoga County Fairgrounds exist west of the Site. A tributary of the Kayaderosseras Creek (i.e., Gordon Creek) boarders the southern property line of the Site. The Porter's Auto Body Shop is located south of Gordon Creek. The Site is situated in a low valley at an approximate elevation of 244 feet above mean sea level (AMSL). Half a mile north and south of the Site, elevations increase by approximately 100 feet.

Improvements at the Site include a ± 80,000 square foot vacant commercial manufacturing structure most recently operated by Angelica which is located along the Bath Street road frontage of the property; as well as a series of foundation ruins historically used by the Former Haight/American Hide Tannery manufacturing facility that are located along the southern and western portions of the Site. With the exception of the southwest and northwest portions of the Site, areas not occupied by the above noted structures are improved by asphalt, concrete and gravel surfaces or exist as landscaped green space.

1.2 Site History

Historic records document industrial development of the Site beginning in ± 1881. Tannery operations of the *Haight and Company, American Hide & Leather,* and *Howes Leather* which were the focus of the IRM, reportedly occurred during the period from 1887 to 1960. The most recent owner / operator of the Site was Angelica, which acquired the Site and the business entity, Linen Systems for Hospitals, Inc. ("Linen Systems") in 1977 and officially changed Linen Systems name to Angelica on or about 1984. Linen Systems acquired title to the Site in 1977. The deed remains in the name of Linen Systems for Hospitals, Inc. (Ref. Exhibit B of the BCP application, including the deed). Linen Systems and later Angelica performed laundering of garments with detergents on the Site and warehoused linens from approximately 1977 through 2011 without the use of dry cleaning chemicals. Angelica has ceased operations on Site.

Environmental contamination associated with the Angelica Site was first discovered in July 2010 following an extended rain fall event, in the vicinity of a former 100,000 gallon No. 6 oil above ground storage tank (AST) historically located northeast of the 2017 demolition interim remedial measures (IRM) work zone. Upon discovery, the NYSDEC assigned Spill No. 1004405 to the release (Ref. Exhibit K of the BCA application). Site investigation work conducted by ECI sufficiently demonstrated that the nature and extent of the contaminants warranted the inclusion of the Site into the NYSDEC Brownfields Cleanup Program (BCP). The Site was accepted in the BCP on January 31, 2013.

At the peak of the Former Haight/American Hide Tannery operations the manufacturing facilities and its related improvements used to support processing and storage of hides covered the majority of the Site (see **Appendix C**). Demolition IRM work performed in 2017 was undertaken to facilitate SRI work in areas occupied by the series of former condemned manufacturing structures, a large smoke stack and foundational ruins historically utilized by the Former Haight/American Hide Tannery manufacturing facility. The IRM work included the closure of abandoned fuel storage systems and undocumented vessels found to exist in the manufacturing structures. The ± 80,000 square foot commercial manufacturing structure (most recently operated by Angelica) located along the eastern road frontage of the Site was excluded from the IRM work and was to remain at the Site. The IRM work zone comprised a footprint of ± 2.5 acres. There are currently no environmental permits associated with Site.

2.0 PRIOR INVESTIGATIONS, INTERIM REMEDIAL MEASURES AND RESULTS

Previous Investigations conducted at the Former Haight/American Hide Tannery manufacturing facility include a June 2008 Phase I Environmental Site Assessment (ESA) prepared by Gaia Tech; a 1993 Underground Storage Tank (UST) Removal Investigation; a July 2010 Site Investigation and Sampling Program conducted by ECI; a February 2012 Phase I Addendum Report prepared by Gaia Tech; a March 2014 RI report updated June 2014 prepared by ECI; an Interim Remedial Measures Construction Completion Report Demolition of Site Buildings .

2.1 Phase I Environmental Site Assessment (ESA)

A Phase I ESA E-1527-05 (ASTM-05) was performed by Gaia Tech in June 2008 to facilitate the environmental due diligence requirements involving a real property financial transaction and the Site. The Phase I ESA Report concluded that Angelica's use of the Site to launder garments did not create recognized environmental conditions (RECs), but prior tannery operations by Haight and Company Tannery from 1881 to 1899, American Hide & Leather from 1899 to 1955, and Howes Leather Company, Inc., from 1956 to 1960may have caused RECs.

The Phase I ESA Report describes the Haight Tannery's operations as including a bark mill, a leach house, an engine room, and finishing areas. The Site's central area included a "vat yard." Several tanning liquor tanks, and a rail spur, were present on the western portion of the Site by the late 1890s. *See* Sanborn Maps attached to the Phase I Report.

Subsequently, American Hide & Leather was present from 1899 to 1955. By 1904, the Tannery contained 15 buildings. *See* Exhibit N of the BCP application. A 1924 map reveals the presence of "waste tanks" added to the main Tannery building. Additionally, a sewage disposal and a chlorine plant were present along Gordon Creek. A large area of empty barrels appeared to be present in the Site's northeast portion at this time. By 1942, a 100,000 gallon fuel oil AST and 100,000 gallon water AST were present on the Site's northern portion. The Tannery discharged water containing lime, salt, tanning liquors, and lactic acid into Gordon Creek; the effluent was highly colored.

In 1945, the current Site building was constructed on the south and east portions of the Site to replace a former building. By 1950, the Tannery was expanded to include a fuel handling building, coal silos, ash silos, additional fuel oil tanks, and paint shed. *See* 1950 Sanborn Map in Phase I. According to the updated Phase I February 2012 Addendum, for one year the Site was owned by General American Industries, Inc. from 1955 to 1956. *See* Exhibit N of the BCP application. General American sold the Site to Howes Leather Company, Inc., which continued to operate the tannery from 1956 to 1960 when Tannery operations apparently ceased. The Site was vacant from 1960 until 1970 when laundering of linens began by a company named Northern Hospital Linen Service, Inc. Laundering of lines continued at the Site until 2011.

According to the Phase I Report, there are no USTs currently at the Site. A single UST was installed in 1973 and removed in 1993; this stored 4,000 gallons of diesel fuel. No spills, leaks, or indications of product release were reported. The tank was allegedly removed in accordance with DEC regulatory requirements, and soil tests beneath the tank performed by the DEC found no impact. One 5,000 gallon fuel oil AST that stores back up fuel when natural gas is unavailable was on-Site from November 2000 until July 2012. *See* Exhibit D of the BCP application Site Layout and Area Map. [NOTE: This AST was present west of the Site building, but was permanently closed on or about July 18, 2012.] Additionally, two water ASTs located in the boiler room did not represent a REC. Angelica formerly stored laundering chemicals in state registered plastic ASTs, but changed to using portable totes and drums early in the 2000's; these ASTs also did not represent a REC in the Phase I ESA Report.

According to the Phase I, Angelica did not generate or dispose of hazardous waste and no waste disposal occurs on Site. Sanitary wastewater was discharged to the municipal sewer system by Angelica. Wash water was discharged through a network of grate drains equipped with lint filters to a concrete sump/wastewater pit in the boiler room, which pH adjusted the water prior to discharge to the sewer system. The sump/wastewater was inspected and pumped out every 3 to 5 years. However, the Phase I did not contain any data confirming no impacts from the sump. Two natural gas-fired boilers were identified as the Site's only combustion emissions, but were not deemed as posing a physical impact to the Site in the Phase I Report. The Report also concluded the Site's transformers did not appear to pose a polychlorinated biphenyl (PCB) hazard.

The Phase I ESA Report also evaluated if there was any potential environmental impact to the Site from surrounding properties. The most significant adjacent former use was located across the channelized creek to the South, and was known as the former Ballston Spa Electric Light & Power Company, which was present southwest of the Site from 1892 to 1911, and may have been a manufactured gas plant Site. However, other than this historic use, which is separated by the Site via the creek, there were no other former adjacent uses noted of any environmental significance. See Exhibit I of the BCP application - Adjacent Property Owner Map.

There have been release incidents on adjacent or nearby Sites, which were identified and are summarized below:

A. *Old Village Garage, Thompson Street.* This Site, which is approximately 350 feet north-northeast, is down-gradient from the Site, and reported a leaking gasoline UST in 1998. NYSDEC has not apparently issued a closure letter, but this spill is listed as "corrective action taken", and therefore, was not deemed as having a potential impact on the Site in the Phase I Report.

B. Vicinity Oil Spills. Four spills with minimal potential for hazard have been closed after corrective action was taken in the vicinity, and were not deemed to represent a potential impact concern in the Phase I Report. These were all within 650 feet of the Site, and included: a diesel fuel spill south-southeast of the Site in 1998, an oil and gas spill in 1993 at a commercial business east-southeast, a gasoline spill at Cumberland Farms east-northeast in 1988, and a water spill at a dentist office south of the Site in 1993.

C. *Herbicides and Pesticides Spill.* Herbicides and pesticides were released by an Agway store that burned down in 1977, 750 feet south of the Site. This Site is allegedly under continued DEC monitoring, although materials are buried and leachate is allegedly being controlled. Because of this Site's status, it cross-gradient relationship to the Site, and distance from the Site, the Agway Site was not deemed to pose an impact on this Site in the Phase I Report.

2.2 UST Removal Investigation

In 1993, Angelica removed a 4,000 gallon diesel fuel UST and associated distribution pump equipment from behind the vacant ± 80,000 square foot commercial manufacturing structure. An investigation of the soils in 1993 beneath the excavated UST did not detect contamination. The tank registration lists this tank as closed as of August 1, 1993.

2.3 Surface Soil Petroleum Incident Data

Environmental contamination associated with this Site was first discovered in July 2010 in the vicinity of a former 100,000 gallon former fuel oil AST in the northwest corner of the Site during an unusual release of No.6 fuel oil from under the ground to the surface due to what was believed to be saturated soil conditions from extensive rain events that had occurred at this time. Observations of the oil release were reported to the NYSDEC upon discovery. NYSDEC Spill #1004405 was assigned to this release. *See* Exhibit K of the BCP application. A subsequent Site investigation and sampling program performed

by ECI confirmed the presence of petroleum contamination in the vicinity of the former AST. Leather waste and ash solid waste materials associated with the former tannery were later discovered to be buried in the vicinity of the base of the former AST during remediation of the petroleum spill. Additional areas of tannery related contamination were slated for investigation during implementation of the RIWP. No reports were generated in relation to the petroleum spill remediation and excavation work but the data investigation results were shared with the Department and are summarized below:

On September 29, 2010, excavation work was performed in and around the area of the discovered petroleum. Approximately 102.07 tons of petroleum contaminated soil (PCS) was removed and sent to Environmental Soil Management Inc. (ESMI) for incineration. ECI's subcontractor Galloway Technical Services (GTS) had to cease excavation on or about October
1, 2010 due to wet weather issues. On October 18, 2010, further excavation was performed until October 21, 2010. PCS was stockpiled on-Site for disposal.

On November 28th through December 13th, 2010, further excavation was performed in an attempt to fully determine the nature and extent of the PCS. Approximately 270.7 tons of additional PCS was removed from the Site and sent to the Colonie Landfill and 14,933 gallons of groundwater was sent to a the Schenectady wastewater treatment facility located in Schenectady, New York as was all groundwater removed from the Site. The 270.7 tons of PCS sent to the landfill represented PCS that had been excavated from the pit (EP1) since October 2010.

Before the remnants of the vertical steel tank and concrete pad could be uncovered and removed, first the soil deposition and tree growth had to be removed. Since some of the trees were 30 to 40 feet tall, a third party, Donavan Tree Service, was called in to remove eight (8) of the largest trees in early December 2010.

On May 21, 2011 through June 17, 2011, further excavation was performed with the goal of removing the remaining soil, trees and the tank bottom and additional contaminated soil. The tank was estimated to be about 25 feet in diameter; this would estimate the height of the tank to be about 27 to 30 feet tall in order to contain 100,000 gallons. What remained of the bottom portion of the tank was the bottom and about 7 feet of a collapsed vertical section of the sidewall of the steel tank. The remnants of the tank bottom and collapsed side wall were filled with ash and soil backfill. GTS removed the contents of the tank bottom and then cut up the remaining portion of the steel. The condition of the above ground vertical petroleum tank indicated it had previously undergone demolition.

The vertical tank sat on a heavily reinforced concrete pad that was supported by a number of piers that were in the ground. The piers are still in place and the depth of the piers has not yet been determined at that time.

GTS removed an additional 379.26 tons of PCS, which was sent to the Fulton County Landfill, and 54,112 gallons of groundwater was sent to the Schenectady wastewater treatment facility. The remnants of the vertical steel wall and bottom of the tank and concrete pad was cut up and sent for recycling and disposal. The location of this tank bottom corresponds to the location of a former 100,000 gallon AST vertical steel tank and structural support pad shown on historic Sanborn maps. On or about June 17, 2011, leather scraps were unearthed, and the excavation was halted. As of June 2013 there was a stock pile(s) of petroleum contaminated leather scrap on-Site. The Baker 20,000 gallon tank used to store ground water from the excavation was cleaned on October 23rd, 2012 and removed from the Site on October 24th, 2012. At that time another 1,477 gallons of ground water and rinse water extracted from the Baker tank was sent to the Schenectady wastewater treatment facility.

In addition, a 5,000 gallon above ground diesel tank was permanently closed on July 18, 2012 as reflected in the NYSDEC's Petroleum Bulk Storage (PBS) registration documentation.

All of the above excavation started at the location of the initial test pit and moved in an outward direction from the initial point in an attempt to delineate the contaminated area. Despite several rounds of excavation, the full extent of the PCS was not determined during the completion of this first phase of work because tannery related solid waste leather material was uncovered. An IRM was planned to address this area.

The soil samples were collected so that approvals from either the thermal treatment or landfill disposal companies would accept the soils for treatment/disposal off-Site. The soil analytical parameters that were tested during this time period were mostly TLCP related. The groundwater samples were collected so that the wastewater treatment facility (i.e., located in Schenectady, New York) would accept the groundwater for treatment and disposal. The data results from the collected soil and groundwater samples confirmed that No. 6 fuel oil (Diesel Range Organics mostly identified as a match to Lube Oil based on laboratory analysis/comparison) was present in the ground/excavation area. Additionally, soils contain multiple semi-volatile organic compounds (SVOC), including acenapthhene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i) perylene, benzo(k)fluoranthene, chrysene, 2-methylnapthalene, dibenz(a,h) anthracene, fluoranthene, fluorene, indeno(1,2,3-cd) pyrene, phenanthyrene, and pyrene. The VOCs m,p-xylene and o-xylene were also detected, but only in one sample and at levels slightly above non-detect levels. Low levels of heavy metals, including but not limited to, arsenic, barium, chromium, and lead were also detected, with barium identified in most samples. All barium sample results were below the Industrial soil clean-up objectives (SCOs). In addition, the testing for metals during this time period indicated that the metals were not present at hazardous waste levels.

2.4 Phase I Addendum Report

The Phase I consultant GaiaTech received DEC FOIL documents, which it summarized in its updated February 2012 Phase I Addendum Report. In addition, since the initial Phase I Report did not contain any data confirming there were no impacts from Angelica's own operations to the sump, GaiaTech asked Angelica for its past data for analysis.

Based on updated information and data provided by Angelica, and documented in the February 2012 Phase I Addendum Report dated May 2009, analysis of sludge from the sump pit (located inside the main building and boiler room), was analyzed for pH, solids, SVOCs, acids, halocarbons, aromatics, ketones, carbon disulfide and vinyl acetate. The analysis was performed so that sludge, if present, could be characterized for disposal. The data indicated that the pH was slightly basic, barium was detected at 1.79 micrograms per kilogram (µg/kg), toluene was detected at 19.6 µg/kg, acetone was detected at 1,350 µg/kg, 2-butanone was identified at 142 µg/kg, and carbon disulfide was identified at 224 µg/kg. GaiaTech concluded the sump pit did not receive discharges of oils, solvents or other unauthorized materials while in use and all detections were below the respective unrestricted use cleanup standards in 6 NYCRR 375-6.8(a), which are 0.7 parts per million (ppm) for toluene; and 350 ppm for barium. Acetone exceeded the 0.05 ppm unrestricted use cleanup standards in 6 NYCRR 375-6.8(a) but was well under the 4.8 ppm standard acetone for restricted residential use pursuant to 6 NYCRR 375-6.8(b). Acetone is also a frequent lab contaminant. While there are no regulatory standards for 2-butanone and carbon disulfide, the catch all residential cleanup guidance standard in NYSDEC CP-51 is 100 ppm for each of these substances. Given the nature of material laundered and detergents used, lack of staining or indications of releases to the wastewater system observed in 2008, and the results of sludge sampling in 2009, the potential for significant impact to the Site as a result of unauthorized releases to the wastewater system appeared low to the Phase I consultant in this Addendum Report. *See* Exhibit P of the BCP application– Sump Pit Data.

2.5 Remedial Investigation Report

In the summer of 2013 ECI, on behalf of Angelica Textile Services, Inc., implemented a NYSDEC approved interim remedial measures (IRM) and RI program for the Former Haight / American Hide Tannery Site. The purpose of the IRM and RI work was to further remove grossly contaminated soils based upon visual observations from areas adjacent to and downgradient of the 2010 & 2011 soil removal zone (i.e., EP1), dispose of stock piled petroleum contaminated leather scrap previously generated during the initial remedial excavation of EP1 as well as to delineate the nature and extent of sub-surface contamination, if any, at the Site.

The implementation of the IRM work occurred during the period from June 2013 through August 2013. During that period an additional 1,697 tons of PCS and leather scrap solid waste material was removed from the excavation pit area and transported to the Fulton County Landfill for offsite disposal. To facilitate the excavation work, approximately 57,000 gallons of groundwater was removed from the excavation on an as needed basis and sent to the Schenectady, New York wastewater treatment plant for disposal. Upon completion of the of the IRM PCS removal work the excavation was completed with approximately 2,130 cubic yards of clean backfill.

Upon the conclusion of the IRM PCS removal work (5) endpoint soil samples (i.e., CS1-West-10, CS2-East-10, CS3-South-10, CS4-Bottom-12 and CS6-North-10) were selected to characterize the conditions remaining in the EP1 PCS removal zone. Soil quality condition that remained in the EP1soil removal zone generally conformed to the Commercial Use SCOs with only two (2) metals, Barium and Copper, being reported at concentrations above their respective Commercial Use SCOs for two (2) samples: CS2-East-10 and CS6-North-10.

Only sample CS6-North-10 contained sample results that were are above their respective Commercial Use SCOs for SVOCs: Benzo (b) fluoranthene, Benzo (a) anthracene and Dibenz (a,h) anthracene. Endpoint sample CS6-North-10 was also reported to contain the SVOC Benzo(a)pyrene at a concentration above its Industrial Use SCOs. Based upon the elevated concentration of Benzo(a)pyrene additional soil removal efforts were pursued in the area of endpoint soil sample CS6-North-10. An additional endpoint soil sample, CS7-North-10, was collected and analyzed for the SVOC Benzo(a)pyrene. CS7-Noth-10 was reported to contain the SVOC at a concentration below the Commercial Use SCOs. Thus, only three SVOCs: Benzo (b) fluoranthene, Benzo (a) anthracene and Dibenz (a,h) anthracene remain above their respective Commercial Use SCOs (see **Table 1**).

Table 1
Restricted Residential Use Soil Cleanup Objective Exceedances
EPI Excavation Area

Sample ID	Chemical Parameter	Result	NYS 375 Restricted Residential Use	NYS 375 Commercial Use
CS6-North-10	Barium	431	400	400
CS6-North-10	Copper	590	270	270
CS6-North-10	Benzo(b)flouranthene	6.76	1	5.6
CS6-North-10	Benzo (a) anthracene	5.91	1	5.6
CS6-North-10	Benzo (a) pyrene	7.05	1	1
CS6-North-10	Dibenz(a,h)anthracene	0.94	.330	0.560
CS6-North-10	Indeno (1,2,3-cd) pyrene	4.28	0.5	5.6
CS2-East-10	Barium	8590	400	400
CS2-East-10	Copper	513	270	270

Note: All units on Table 1 are in parts per million (ppm or mg/Kg).

The RI work consisted of a geophysical survey; the installation of (20) soil borings and (5) monitoring wells; the collection and analysis of (80) soil and (5) groundwater samples; the collection and analysis of (2) sub-slab soil vapor samples; and the collection and analysis of (1) sediment/sludge sample.

The geophysical survey was conducted using electromagnetic conductivity (EM) and magnetometer methods. The EM consisted of establishing survey grids with 20-foot by 20-foot dimensions and 5-foot data node spacing at each well and boring location. Due to the prevalence of concrete with steel reinforcement (rebar) from former foundations still present both above ground and underground as well as other metal scrap material at the Site, numerous geophysical anomalies were identified. However, no geophysical anomaly signatures indicative of spherical metal objects such as underground tanks or buried drums were identified in the geophysical survey areas.

The results from the geophysical survey were utilized to strategically position the soil boring and monitoring well installations. Drilling locations were selected at a point within each survey grid that demonstrated a low geophysical gradient in order to reduce the risk of hitting any buried metal objects.

Fill material consisting of sand, gravel, brick and coarse black ash were observed at (13) of the (20) soil boring locations to depths as great at 13 feet below grade, immediately behind the “main building”. Native deposits underlying the fill materials were identified to consist of glacially derived gravels, sands, silt and clay. A dense glacial till consisting of varying amounts of clay, silt, and fine to medium size, sub-angular gravel was identified to exist beneath the shallow surficial deposits.

Each subsurface soil sample was screened upon recovery for the presence of volatile organic compound (VOC) vapors using a handheld photoionization detector (PID). There were no PID responses observed above background conditions identified in any of the soil samples recovered from the Site. Subsurface soil samples were collected for laboratory analysis at each of the borings Sites. The analytical suite for the soil samples included the following:

1. VOCs - analyzed by EPA Method 8260B.
2. SVOCs - analyzed by EPA Method 8270C.
3. Target Analyte List Metals (ICP) – Aluminum, Antimony, Arsenic, Barium, Berylium, Cadmium, Calcium, Chromium (total), Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc - analyzed by EPA Method 6010C
4. Mercury – analyzed by EPA Method 7471B
5. Hexavalent Chromium – Method SW7196
6. Pesticides - analyzed by EPA Method 8081B.
7. PCBs - analyzed by EPA Method 8082A.
8. Cyanide – analyzed by Method SW9014

A total of 80 soil samples were submitted for chemical analysis and were analyzed for approximately 82 different analytes. Of the 80 soil samples, only 24 were reported to contain analyte(s) above their respective Commercial Use SOC. Specific analytes identified above their respective Commercial Use SCOs are listed on **Tables 2A**, **2B**, **2C** & **2D** for consideration.

Table 2A
Restricted Residential Use Soil Cleanup Objective Exceedances

Chemical Parameter	NYS 375 Restricted Residential Use	NYS 375 Commercial Use	Sample ID									
			DB3-1 (0'-2')	DB4-1 (0'-2')	DB4-2 (4'-6')	DB5-1-S Surface	DB5-2 (0'-2')	DB5-3 (2'-4')	DB7-1 (0'-2')	DB8-1 (0'-2')	DB8-2 (2'-4')	DB8-3 (4'-6')
Mercury	0.81	2.8	-----	-----	-----	-----	-----	-----	-----	-----	5.84	1.04
Arsenic	16	16	-----	-----	-----	-----	-----	-----	-----	42.3	74.9	-----
Barium	400	400	-----	891	1020	-----	449	591	-----	-----	1010	-----
Chromium	180	1500	957	522	680	-----	-----	-----	-----	470	4610	647
Manganese	2000	10000	-----	-----	-----	-----	-----	2020	-----	-----	-----	-----
Acenaphthene	100	500	-----	243	-----	-----	-----	-----	-----	-----	-----	-----
Anthracene	100	500	-----	479	-----	-----	-----	-----	-----	-----	-----	-----
Benzo(a)anthracene	1	5.6	-----	681	112	2.42	2.38	-----	-----	-----	-----	-----
Benzo(a)pyrene	1	1	-----	599	94.9	2.39	2.28	-----	-----	-----	-----	-----
Benzo(b)fluoranthene	1	5.6	-----	541	84.8	2.57	3.82	-----	-----	-----	-----	-----
Benzo (g,h,i) perylene	100	500	-----	321	-----	-----	-----	-----	-----	-----	-----	-----
Benzo(k)fluoranthene	3.9	56	-----	368	62	-----	-----	-----	-----	-----	-----	-----
Chrysene	3.9	56	-----	605	98.9	-----	-----	-----	-----	-----	-----	-----
Dibenz(a,h)anthracene	0.33	0.56	-----	113	15.5	-----	-----	-----	-----	-----	-----	-----
Dibenzofuran	59	350	-----	199	-----	-----	-----	-----	-----	-----	-----	-----
Fluoranthene	100	500	-----	1370	211	-----	-----	-----	-----	-----	-----	-----
Fluorene	100	500	-----	308	-----	-----	-----	-----	-----	-----	-----	-----
Ideno(1,2,3-cd)pyrene	0.5	5.6	-----	395	70.7	1.71	1.8	-----	0.512	-----	-----	-----
Naphthalene	100	500	-----	459	-----	-----	-----	-----	-----	-----	-----	-----
Phenanthrene	100	500	-----	1410	198	-----	-----	-----	-----	-----	-----	-----
Pyrene	100	500	-----	1120	172	-----	-----	-----	-----	-----	-----	-----

Note: All units on Table 2A are in parts per million (ppm or mg/Kg). Concentrations identified below Restricted Residential use SCOs are and laboratory detection limits are listed in the table.

Table 2B
Restricted Residential Use Soil Cleanup Objective Exceedances

Chemical Parameter	NYS 375 Restricted Residential Use	NYS 375 Commercial Use	Sample ID									
			MW2-4 (8'-10')	MW2-6 (12-14')	MW4-1 (0'-2')	MW5-1 (0'-2')	MW5-2 (2'-4')	MW5-3 (4'-6')	SB1-S Surface	SB1-1 (0'-2')	SB2-1-S Surface	SB2-2 (0'-2')
Mercury	0.81	2.8	-----	-----	-----	-----	4.75	30.1	-----	7.86	0.811	-----
Arsenic	16	16	-----	17	-----	-----	-----	-----	-----	-----	-----	-----
Barium	400	400	-----	-----	-----	1670	-----	-----	-----	-----	-----	-----
Chromium	180	1500	-----	-----	226	-----	-----	-----	-----	-----	266	-----
Lead	400	1000	-----	-----	-----	-----	-----	-----	949	-----	-----	-----
Benzo(a)anthracene	1	5.6	1.5	-----	-----	19.1	-----	-----	1.01	-----	2.2	-----
Benzo(a)pyrene	1	1	1.64	-----	-----	17.2	-----	-----	-----	-----	2.19	-----
Benzo(b)fluoranthene	1	5.6	1.56	-----	-----	16.8	-----	-----	-----	-----	2.39	-----
Benzo(k)fluoranthene	3.9	56	-----	-----	-----	11	-----	-----	-----	-----	-----	-----
Chrysene	3.9	56	-----	-----	-----	17.9	-----	-----	-----	-----	-----	-----
Dibenz(a,h)anthracene	0.33	0.56	-----	-----	-----	2.56	-----	-----	-----	-----	0.507	-----
Ideno(1,2,3-cd)pyrene	0.5	5.6	1.41	-----	-----	11.8	-----	-----	0.759	-----	1.96	0.631

Table 2C
Restricted Residential Use Soil Cleanup Objective Exceedances

Chemical Parameter	NYS 375 Restricted Residential Use	NYS 375 Commercial Use	Sample ID									
			SB3-1-S Surface	SB3-2 (0'-2')	SB4-1 (0'-2')	SB4-2 (2'-4')	SB4-3 (4'-6')	SB4-4 (6'-8')	SB5-1-S Surface	SB5-2 (0'-2')	SB6-1-S Surface	SB6-2 (0'-2')
Mercury	0.81	2.8	-----	1.71	-----	5.81	8.9	6.94	1.1	0.904	1.19	0.924
Arsenic	16	16	-----	-----	-----	40.4	33.7	-----	-----	-----	-----	-----
Barium	400	400	-----	-----	702	1120	1220	-----	-----	553	-----	-----
Chromium	180	1500	-----	-----	254	3270	6800	1260	332	277	670	531
Benzo(a)anthracene	1	5.6	-----	-----	-----	-----	-----	-----	-----	-----	3.47	1.11
Benzo(a)pyrene	1	1	-----	-----	-----	-----	-----	-----	-----	-----	3.14	-----
Benzo(b)fluoranthene	1	5.6	-----	-----	-----	-----	-----	-----	-----	-----	3.14	1.06
Dibenz(a,h)anthracene	0.33	0.56	-----	-----	-----	-----	0.622	-----	-----	-----	0.493	-----
Ideno(1,2,3-cd)pyrene	0.5	5.6	0.599	-----	1.39	1.52	0.518	0.573	0.569	-----	2.16	0.834

Note: All units on Tables 2B and 2C are in parts per million (ppm or mg/Kg). Concentrations identified below commercial use SCOs are not listed in the table.

Table 2D
Restricted Residential Use Soil Cleanup Objective Exceedances

Chemical Parameter	NYS 375 Restricted Residential Use	NYS 375 Commercial Use	Sample ID								
			SB7-1-S Surface	SB7-2 (0'-2')	TP1-1 Surface	TP1-2 (0.5'-2')	TP2-1 Surface	TP2-2 (0.5'-2')	TP3-1 Surface	TP3-2 (0.5'-2')	IS1-1 Sediment
Mercury	0.81	2.8	1.21	0.968	-----	-----	-----	-----	-----	-----	61.2
Arsenic	16	16	17.8	72	25.3	120	42.5	47.4	30.6	33	-----
Barium	400	400	1530	3310	4550	2910	3910	3480	2110	3520	536
Cadmium	400	400	-----	-----	-----	-----	-----	-----	-----	-----	14.5
Chromium	180	1500	672	1580	566	1730	661	683	-----	258	1070
Copper	270	270	-----	285	-----	-----	-----	-----	347	-----	1580
Lead	400	1000	922	-----	-----	-----	-----	-----	-----	-----	-----
Nickel	310	310	-----	-----	-----	-----	-----	-----	-----	-----	832
Benzo(a)anthracene	1	5.6	3.51	4.12	-----	-----	-----	-----	-----	-----	-----
Benzo(a)pyrene	1	1	3.38	4.35	-----	-----	-----	-----	-----	-----	-----
Benzo(b)fluoranthene	1	5.6	2.96	4.67	-----	-----	-----	-----	-----	-----	-----
Chrysene	3.9	56	-----	4.58	-----	-----	-----	-----	-----	-----	-----
Dibenz(a,h)anthracene	0.33	0.56	0.601	0.717	-----	-----	-----	-----	-----	-----	-----
Ideno(1,2,3-cd)pyrene	0.5	5.6	2.61	3.5	-----	-----	-----	-----	-----	-----	-----

Note: All units on Table 2B are in parts per million (ppm or mg/Kg). Concentrations identified below commercial use SCOs are not listed in the table.

Five (5) monitoring wells (MW1, MW2, MW3, MW4, and MW6) were installed during the 2013 RI work. Groundwater elevations measured to the nearest 0.01 feet in each of the monitoring wells, by ECI on 6/30/13, identified groundwater flow beneath the Site to be primarily in an easterly direction towards Bath Street.

Each of the newly installed monitoring wells were sampled, via low flow conditions, and submitted for chemical analysis for the following parameters;

1. VOCs - analyzed by EPA Method 8260B.
2. SVOCs - analyzed by EPA Method 8270C.
3. Target Analyte List Metals (ICP) – Aluminum, Antimony, Arsenic, Barium, Berylium, Cadmium, Calcium, Chromium (total), Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc - analyzed by EPA Method 6010C
4. Mercury – analyzed by EPA Method 7471B
5. Hexavalent Chromium – analyzed by EPA Method 218.6
6. Pesticides - analyzed by EPA Method 8081.
7. PCBs - analyzed by EPA Method 8082.
8. Cyanide – analyzed by Method SM4500 –CN E

With the exception of iron, identified in groundwater samples MW1, MW2, MW3, MW4, and MW6 and manganese identified in groundwater samples MW1 and MW4 each chemical parameters were reported at concentrations below the applicable groundwater quality standards or reported at

concentrations below laboratory detection limits. However, it should be noted that a number of substances whose reported laboratory non-detect limits exceeded their respective allowable groundwater quality objective.

At the direction of the New York State Department of Health (NYSDOH), ECI collected two (2) sub-slab vapor samples (i.e., C1 and C2) from beneath the floor slab of the ± 80,000 square foot vacant manufacturing structure. Each sample was collected using EPA Method TO-15 VOC air sampling and analysis. The VOCs Trichloroethene, Carbon Tetrachloride, Tetrachloroethene, Methylene Chloride, and 1,1,1-Trichloroethane were identified in each of the sub-slab vapor samples at low level concentrations ranging from 1.1 – 19 ug/m³. No additional indoor air or sub-slab vapor samples were collected during the 2013 RI work.

Inside the ± 80,000 square foot vacant manufacturing structure the wastewater discharge system was sampled for sludge/sediment within a small above ground sump located in the former maintenance shop. The building had been shuttered and the sump that was originally designated for sampling (located below ground in the boiler room downstream of the maintenance shop) was not accessible and did not contain sufficient sludge/sediment for sample collection. The originally designated sump was the sump sampled by GaiaTech which it summarized the results in its updated February 2012 Phase I Addendum Report. The sludge/sediment sample was subjected to the same chemical parameters as conducted during the soil investigation work.

The location chosen for sampling was up stream/line of the original sump location and very little sediment was available for sampling (IS1). The results indicated that the metals mercury, barium, cadmium, copper and nickel were each reported at a concentration above Commercial Use SCOs. All remaining chemical parameters were reported to be at concentrations below Commercial Use SCOs.

Based upon the completed work the following conclusions were offered by ECI;

1. Groundwater was minimally impacted. Only iron and manganese results were greater than the allowable groundwater quality objective for all five (5) groundwater sample locations. All other groundwater results were below the allowable groundwater quality objective shown in Table 3 of Chapter X of the Division of Water, NYCRR Part 703.6. The area surrounding Ballston Spa, New York is known to contain high metals concentrations in the groundwater that were historically used as spa treatments. There were a number of substances whose reported laboratory non-detect limits exceeded their respective allowable groundwater quality objective. However, the allowable groundwater quality objectives are established for drinking water and there are no groundwater wells located anywhere near the Site (*see* Section 2.4). At this time there does not seem to be any Site related contamination in the groundwater from the aforementioned monitoring well locations. Therefore, groundwater remediation is not required.

2. The soil samples indicate there are only two (2) Site locations where multiple sample location results identified specific metal and SVOCs that were above the Industrial Use SCOs; these were in the southwest corner and north driveway areas of the Site. Based on soil sample results, which identify the presence of fill with SVOCs and metals, as well as the bore logs, and visual observations, portions of the fill contain fragments of coal, coal ash, and/or asphalt, specifically in the southwest corner of the Site. Coal, coal ash, and asphalt contain SVOCs and metals identified in the sample results located in the southwest corner of the Site and in the same range of their respective concentrations. The fact that there may be SVOCs below the detection limit in the north driveway area of the Site, the metals in this location may also be related to coal, coal ash, and asphalt. However, this is more inconclusive than in the southwest corner of the property where both SVOCs and metals exceeded the Industrial Use SCOs in Table 375- 6.8(b). Never the less there is strong evidence that the metals and SVOCs in both the north and southwest portions of the Site are

related to coal, coal ash, and asphalt fill that is visually present in both locations. While there are two fill areas that contain SVOCs and metals which exceed Industrial Use SCOs, there are a few other random locations identified throughout the Site where SVOCs and metals exceed Industrial Use SCOs. All of these other locations which contain fill seem to be relatively small and isolated areas. Specific to the two (2) Site locations where multiple sample location results identified specific metals and SVOCs that were above the Industrial Use SCOs, the southwest corner and north driveway areas of the Site have significantly different groundwater flow rates. The southwest corner has very little horizontal groundwater flow while the north driveway location has significant horizontal groundwater flow. It is likely that both have glacial till under their respective locations, which prevents vertical migration of potential compounds of concern (COC). Capping in either location will have minimal impact on horizontal groundwater flow in their respective locations. Thus, both areas may require only minimal capping because the glacial till prevents vertical migration of any potential COC, capping will have a minimal impact on horizontal migration of any potential COC, and the COC are stable in the soil matrix and are not impacting groundwater.

3. The inside wastewater discharge sludge/sediment sample results from the maintenance shop were below the Industrial Use SCOs in Table 375-6.8(b) with one (1) exception, mercury. The mercury sample result was 61.2 mg/Kg whereas the Industrial Use Cleanup Objectives is 5.7 mg/Kg. The mercury could have come from old paint or other material that was used in the building since its construction in the middle 1900s. This small above ground sump can easily be cleaned to remove any residual mercury.

4. Only low level VOCs were identified in the sub-slab vapor results, which did not warrant further investigation or mitigation.

2.6 IRM Demolition of Site Buildings

The demolition IRM work was conducted on behalf of RFID Textile Services, Inc. (f/k/a Angelica Textile Services, Inc.) in accordance with NET's May 2016 work plan approved by the NYSDEC BCP No. C546055-10-12. The 2017 demolition IRM work which included the demotion of (6) buildings and (1) smoke stack located at the Site, the disposal of asbestos containing building materials (ACM) and debris generated as a result of the demolition IRM work, the permanent closure of (2) aboveground storage tanks (AST) and the closure of a private water supply well.

The primary objective of the demolition IRM work was to gain access to the areas below each of the condemned the Former Haight/American Hide Tannery manufacturing structures via controlled demolition methods. This work also included beneficially reusing (whenever possible) non putrescible non ACM construction and demolition (C&D) debris on the Site, the proper disposal of all ACM C&D and related regulated waste generated as a result of the demolition work, as well as to recycling of ferrous and non-ferrous metal.

The demolition activities were completed as an asbestos project in accordance with New York State Department of Labor (NYSDOL) Industrial Code Rule 56. The programmatic purpose for the IRM activities was to facilitate supplemental remedial investigation (RI) work in select AOC below each structure as directed by the NYSDEC as a result of the Departments review of prior RI information submitted by ECI in 2013.

The following IRM objectives were established in advance of the work:

- Controlled demolition of condemned structures (with ACM in-place);
- Removal of above grade condemned structures;

- Backfill or partial backfill building foundations via beneficial reuse of non-ACM demolition debris (i.e., brick and concrete) generated in conjunction with the demolition work;
- Disposal of all regulated and non-regulated waste

ACM demolition and disposal IRM work occurred during the period from February 22, 2017 through July 14, 2017. A total of 2,346.15 tons of ACM demolition derived waste and debris were disposed of at the Albany County Landfill or Finch Waste Company facilities.

A total of (17) 55 gallon drums (i.e., ± 8,500 pounds) of No. 6 fuel oil tank bottoms and decontamination derived waste, generated during the AST closure work, was disposed of offsite at Veolia ES Technical Solutions, LLC. All recyclable metal generated from the AST closure work was transported to Plan It Waste & Recycling.

The primary objective of the IRM was to facilitate supplemental RI work at the Site which necessitated removal of the condemned structures and the disposal of ACM demolition materials and debris. At the conclusion of the IRM work; thermal pipe insulation (TPI) ACM located in a vault below the concrete floor of the former *Pump House* structure and a localized area of vermiculite contaminated brick C&D from the *Brick Building* was properly abandoned in place in accordance with the NYSDOL variance as amended on March 7, 2017 and June 7, 2017. The TPI and vermiculite impacted brick have been encapsulated using durra flow fill concrete or capped and covered using brick and concrete beneficial hard fill materials.

2.7 Supplemental Remedial Investigation Report

The SRI work which included the installation of (15) soil borings and (9) monitoring wells, the analysis of (18) soil samples and (5) groundwater samples was completed as part of the demolition IRM in 2017. One soil vapor intrusion (SVI) risk assessment sampling event was also complete in the vacant [former Angelica] 80,000 square foot building located along Bath Street during the winter heating season of 2019.

With the exception of (1) soil boring location, SW-1, improved concrete surfaces were confirmed below each of the Former Haight/American Hide Tannery manufacturing buildings razed as a result of the 2017 demolition IRM (see **Figure 2**). (Ref, Interim Remedial Measure Construction Completion Report Demolition of Site Buildings dated April 2018). The concrete surfaces below the manufacturing structure ranged in thickness from ± 3.0 – 6.0" and extend from the gravel covered parking surfaces located east of the 2017 demolition IRM work zone, to (in some cases) areas beyond the western property line. The concrete floor surfaces that exist along the southwest portion of the Site contain (4) abandoned concrete vaults and a network of drains. The apparent capacity of the vaults ranges from ± 1000 – 5000 gallons and the apparent depth of each vault ranges from ± 4 – 5 feet below the improved slab on grade concrete surface.

With the exception of soil boring SW-1, the cultural fill horizons encountered during the SRI work are in most cases covered by the concrete floor and foundations of the former manufacturing structures or are contained in the network of abandoned concrete vaults and drains. The cultural fills relative position to improved concrete surfaces suggest its existence on Site is relates to historic grading activities completed during the construction of the Former Haight/American Hide Tannery manufacturing buildings as well as material used to close the network of vaults and drains.

Cultural fill that resides in the concrete vaults and a horizon of organic detritus (i.e., < 0.5 ft.) that has accumulated above the concrete surfaces supports both primary and secondary vegetation growth, which include areas located west of the 2017 demolition IRM work zone.

With the exception of the samples of cultural fill collected from the concrete vaults (i.e., B2-1/S-1, B3-2/S-1 & B4-1/S-1), a floor drain (FD-4/S-1) and from below the concrete floor slab of the former manufacturing buildings (USB1/S-1), sediment samples collected from an abandoned drainage system that served the Site (FD-1 and G.Creek Stg Bld) and one near surface native unconsolidated deposit (MW-6/S-1); the (18) soil samples collected to document soil quality conditions in and below the Former Haight/American Hide Tannery manufacturing buildings AOC were found to be unaffected by the NYSDEC Restricted Residential Use SCOs. The reported soil quality exceedances for the cultural fill, sediment and soil samples are overall low in chemical concentration, limited to the heavy metals Arsenic, Barium, Cadmium, Chromium, Copper, Lead and Mercury, the semi-VOC Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)flouranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene and Ideno(1,2,3-cd)pyrene) and the detection of PCB-1254 (see **Table 3**).

Table 3
Table 375-6.8(b): Restricted Residential Use Soil Cleanup Objective Exceedances

Chemical Parameter	NYS 375 Restricted Residential Use	NYS 375 Commercial Use	Sample ID							
			B4-1 S-1 (0-4')	B3-2 S-1 (0-4')	B2-1 S-1 (0-4')	MW-6 S-1 (0-5')	FD-4 S-1 (0-3')	FD-1 (Surface Sediment)	USB-1/S-1 (0-5')	G. Creek Stg Bld. (Surface Sediment)
Arsenic	16	16	-----	-----	24.3	-----	-----	107	-----	-----
Barium	400	400	1240	1110	2770	-----	403	-----	-----	435
Cadmium	4.3	9.3	-----	-----	-----	-----	-----	6.26	-----	-----
Chromium	180	1500	2410	1090	1280	-----	2060	675	181	346
Copper	270	270	-----	-----	-----	-----	-----	3840	-----	-----
Lead	400	1000	-----	-----	-----	-----	-----	18700	-----	-----
Mercury	0.81	2.8	-----	-----	1.07	13.1	-----	1.22	-----	-----
PCB - 1254	1	1	-----	-----	1.2	-----	8.1	-----	-----	-----
Benz(a)anthracene	1	5.6	-----	1.3	15	-----	1.6	-----	-----	4.9
Benzo(a)pyrene	1	1	-----	1.3	14	-----	1.3	-----	-----	5.4
Benzo(b)flouranthene	1	5.6	-----	1.2	12	-----	1.1	-----	-----	6.4
Benzo(k)fluoranthene	3.9	56	-----	-----	12	-----	-----	-----	-----	3.9
Chrysene	3.9	56	-----	-----	15	-----	-----	-----	-----	7
Dibenz(a,h)anthracene	.330	0.560	-----	-----	1.6	-----	-----	-----	-----	.97
Ideno(1,2,3-cd)pyrene	.500	5.6	.740	.690	9.6	.530	.850	-----	-----	4.0

Note: All units on Table 3 are in parts per million (ppm or mg/Kg). Concentrations identified below Restricted Residential use SCOs and laboratory detection limits are not listed in the table.

Groundwater samples were collected from monitoring well locations BB-2, MW-6[1], NE-1, B4-1 and NW-1 on July 27, 28 & 3, 2017. Similarly, groundwater quality exceedances to the NYSDEC 6NYCRR PART 703 water quality standards are limited to metals, low concentration (i.e., < 1 ppb) semi-VOCs and the VOC Trichlorofluoromethane (i.e., 17ppb) at B4-1, only. The individual compounds identified at a concentration above the NYSDEC 6NYCRR Part 703 groundwater quality standards for the (6) groundwater samples are listed in **Table 4**;

Table 4
6NYCRR Part 703 Groundwater Quality Exceedances

Chemical Parameter	6NYCRR Part 703 GA Standards	Monitoring Well Location					
		BB-2	BB-2 DUP	MW-6	NE-1	B4-1	NW-1
Aluminum	100	-----	-----	52700	123000	2390	6710
Beryllium	3	-----	-----	-----	7	-----	-----
Cadmium	5	-----	-----	-----	6	-----	-----
Chromium	50	-----	-----	171	279	-----	-----
Copper	200	-----	-----	-----	221	-----	-----
Iron	300	2580	2620	82300	212000	3580	12700
Lead	25	-----	-----	1260	32	-----	-----
Magnesium	35000	-----	-----	58600	43100	-----	-----
Manganese	300	438	443	2220	2860	-----	695
Mercury	0.7	0.8	0.9	2.7	-----	-----	-----
Sodium	20000	23800	24100	97900	91800	590000	510000
Benz(a)anthracene	.002	0.02	-----	0.18	-----	-----	-----
Benzo(b)fluoranthene	.002	-----	-----	0.14	-----	-----	-----
Benzo(k)fluoranthene	.002	-----	-----	0.14	-----	-----	-----
Chrysene	.002	0.02	-----	0.16	-----	-----	-----
Ideno(1,2,3-cd)pyrene	.002	-----	-----	0.09	-----	-----	-----
Trichlorofluoromethane	5	-----	-----	-----	-----	17	-----

Note: All units on Table 4 are in parts per billion (ppb or ug/L). Concentrations identified below NYSDEC 6NYCRR Part 703 groundwater (GA) quality standards and laboratory detection limits are not listed in the table. Total matrix metal concentrations reported in the samples collected at monitoring wells MW-6, NE-1, NW-1 and B4-1 may reflect turbidity conditions in the samples.

The data developed as a result of the March 2019 "winter heating season" SVI sampling event demonstrates that cVOCs regulated under the NYSDOH CEH BEEI's SVI guidance document and detected during the sampling event were limited to Carbon Tetrachloride in indoor, outdoor and sub slab vapor samples. The detections of and Carbon Tetrachloride was reported at the "No Further Action" concentration thresholds listed in Air Matrix Table A of the NYSDOH CEH BEEI Guidance Document. Additional VOCs identified at concentrations above laboratory detection limits are depicted in **Table 5** below.

Table 5
Soil Vapor Intrusion T0-15 Laboratory Detection Results

Chemical Parameter	Sample ID			
	SS	IA	IA DUP	OA
Acetone	48	3.96	3.63	3.42
Carbon Tetrachloride	0.21	0.4	0.37	0.43
Chloromethane	-----	-----	-----	1.14
Dichlorodifluoromethane	3.99	2.14	2.02	2.07
Ethanol	241	2.35	2.28	7.55
Isopropylalcohol	7.12	-----	-----	1.03
Methyl Ethyl Ketone	2.62	-----	-----	-----
Toluene	1.33	-----	-----	-----
Trichlorofluoromethane	26.3	11.5	11.1	1.61

Note: All units on Table 6 are in micrograms per cubic meter (ug/m3). Concentrations identified below laboratory detection limits are not included in Table 5.

Based upon the completed SRI work NET concluded that the soil, vapor and groundwater quality data assimilated during the course of the SRI demonstrate chemical signatures and concentrations that are generally consistent with prior data developed in other areas of the site by ECI in 2013 and confirm that concrete surfaces exist over or isolate historic cultural fill from the environment below the Former Haight/American Hide Tannery manufacturing buildings AOC. The information developed during the course of this SRI and the results of the previous RI provide sufficient information for establishing remedial action objectives, evaluating remedial action alternatives, and selecting a remedy that is protective of human health and the environment that is consistent with the Site's CBD zoning.

3.0 REMEDIAL ACTION GOALS & OBJECTIVES

3.1 Remedial Action Goals

The objective of this RAAR / RAWP is to identify and evaluate remedial alternatives with the goal of developing an appropriate remedial action for contaminated media at the Site. According to 6 NYCRR Part 375-2.8, "The goal of the remedial program for a specific site is to restore that site to pre-disposal conditions, to the extent feasible. At a minimum, the remedy selected shall eliminate or mitigate all significant threats to the public health and to the environment presented by contaminants disposed at the site through the proper application of scientific and engineering principles and in a manner not inconsistent with the national oil and hazardous substances pollution contingency plan as set forth in section 105 of CERCLA, as amended by SARA." Similarly, Environmental Conservation Law (ECL) Article 27 Title 13, "The goal of any such remedial program shall be a complete cleanup of the site through the elimination of the significant threat to the environment posed by the disposal of hazardous wastes at the site and of the imminent danger of irreversible or irreparable damage to the environment caused by such disposal."

As outlined in DER - 10 Technical Guidance for Site Investigation and Remediation remedial alternatives are to be evaluated on the following criteria:

- Overall Protection of Human Health & the Environment - This criterion evaluates each of the remedial alternatives ability to eliminate, reduce or control exposure risks to human health and the environment.
- Compliance with Standards, Criteria, and Guidance (SCGs) - This criterion evaluates each of the remedial alternatives compliance with applicable SCGs, to the extent practicable.
- Long Term Effectiveness & Permanence - This criterion evaluates the long-term effectiveness and permanence of each remedial alternative or remedy post implementation.
- Reduction in Toxicity, Mobility & Volume - This criterion evaluates each of the remedial alternatives ability to reduce contaminant toxicity, mobility and volume.
- Short Term Effectiveness & Impacts - This criterion evaluates each of the remedial alternatives short-term adverse environmental impacts and human exposures during implementation.
- Implementability - This criterion evaluates each remedial alternative for technical and administrative feasibility of implementation.
- Cost effectiveness - This criterion evaluates the overall cost effectiveness of each remedial alternative.
- Land Use - This criterion is and evaluation of each remedial alternatives for current, intended, and reasonably anticipated future use of the site and its surroundings.

3.2 Current and Potential Use Scenarios

It is importation to take the Site's zoning, commercial business district (CBD), into consideration when developing potential future Site use scenarios for the evaluation of risk to public health and to the environment. In general CBD zoned areas are intended to include various types of non-residential buildings and property that the entire Village of Ballston Spa may benefit from. However, residential apartments above ground floor offices/retail space is permissible in these areas. Significant threat evaluations to public health and the environment were established based upon current land use and zoning, local populations, and a conceptual future land use (see **Figure 3**).

3.3 Remedial Action Objective Identification

Remedial action objectives (RAOs) presented in this RAAR / RAWP are intended to be protective of human health and the environment. The data generated during the RI and SRI work demonstrate select SVOCs and TAL metals to be the primary contaminates of concern which impact upon soil and groundwater located at the Site. Based on the results of the RI, SRI, as well as the current and potential future use of the Site and surrounding areas; the following general RAOs were developed to reduce, to the extent feasible:

- Potential ingestion, dermal contact, inhalation, and direct contact exposures of persons or workers at or around the Site to VOCs, SVOCs, TAL metals and PCBs in soil or groundwater; and
- Potential ingestion and inhalation exposures of persons or workers at or around the Site to SVOCs TAL metals and PCBs in dust (soil dust) that may migrate off-Site by wind.

These RAOs will be accomplished by implementation of a remedy for a Track 4 Restricted Residential Use that is protective of public health and the environment through:

- Removal, to the extent practicable, or capping of the potential impacted soil source areas;
- Creation of a barrier to prevent human contact with contaminated soils/historic fill; and
- Use of long term institutional controls (ICs) and engineering controls (ECs) to reduce long term potential exposure pathways to human receptors and the environment.

The screening and evaluation of remedial action technologies and alternatives will focus on the ability to achieve these general RAOs.

3.4 Remedial Action Objective Development

As discussed in the RI and SRI reports, select SVOCs and metals are the primary compounds of concern which exceed the Restricted Residential Use SCOs in surface soils and sub-surface soils at the Site. The extent of contamination at the Site appears to be due primarily to the historic fill material found throughout the Site and historic use of the Site as a commercial/industrial property for over 100 years.

3.4.1 On-Site Soil

As identified in Sections 2.5 and 2.7 the results of the RI and SRI work identify forty-seven (47) surface and subsurface soil, cultural fill and sediment samples, collected from areas across the Site, to contain select contaminates of concern at concentrations above established Restricted Residential Use SCOs. The primary contaminates of concern identified at concentrations above Restricted Residential Use SCOs in the Sites soils include select TAL metals and SVOCs as well as the PCB-1254, which was identified in two (2) cultural fill samples collected at the Site. Additionally, one (1) inside sediment sample, collected from a small wastewater sump/concrete basin, was also identified to contain selected TAL metals above the Restricted Residential Use SCOs.

Based upon the soil boring and sampling data developed during the RI and SRI work, to achieve the Restricted Residential Use Cleanup Objectives outlined in 6NYCRR Part 375 Table 6.8(b), it is estimated that an average 4 ft. lift of urban cultural fill would have to be removed from select areas across the entirety of the Site. In most cases the overwhelming majority of urban cultural fill encountered during the RI and SRI work is covered by the concrete floor and foundations of the former manufacturing structures or are contained in the network of abandoned concrete vaults and drains. The estimated volume of urban cultural fill removal necessary to achieve the Restricted Residential Use Cleanup Objectives is 27,000 yrd^3 or approximately 31,000 tons.

While the majority of the Site is improved by asphalt, concrete and gravel surfaces, select areas of exposed soil with vegetation are present. The most likely soil exposure pathway is construction/utility worker contact with subsurface soil via incidental ingestion, dermal contact,

and inhalation of dust during construction activities (i.e., trenches/excavations to maintain underground utilities and / or during future Site redevelopment activities). While prolonged contact or ingestion of site soil is unlikely, contact with affected soil by construction and/or utility workers represents a potential future exposure pathway. Based upon the contemplated future mix use of the existing Site building (i.e., commercial use ground floor with second floor residential apartments) invasive earthwork activities required for redevelopment is anticipated to be minimal. Site soils which are not already covered by existing improvements (i.e., Site building, asphalt parking surfaces, concrete slabs and gravel surfaces) are limited and as such limited remedial actions are warranted to eliminate the potential for direct human exposure for the anticipated future Site development scenario. Thus, potential exposures to environmental and human receptors from contact with Site soil contaminates will be mitigated by Institutional Controls (IC), Engineering Controls (EC) and the implementation of a Site Management Plan (SMP).

3.4.2 On-Site Groundwater

Although the RI and SRI groundwater data confirm select TAL metals, SVOCs and VOCs to exist at concentrations above applicable NYSDEC 6NYCRR Part 703 groundwater quality standards *(see* Table 4 Section 2.7) groundwater presently has no exposure point or route, as groundwater at and in the vicinity of the Site is not used as a drinking water source, nor is it anticipated to be used as a drinking water source in the future. The most likely groundwater exposure pathway is construction/utility worker contact via incidental ingestion and dermal contact during construction activities (i.e., trenches/excavations to maintain underground utilities and / or during future Site redevelopment activities). Based on the findings of the RI and SRI only minor impacts to groundwater have been identified at the Site. As such, active remediation to address groundwater impacts does not appear to be warranted. Thus, the placement of a restriction on the use of groundwater at the Site is appropriate remedy.

3.4.3 On-Site Sub-Slab Soil Vapor

The basic model for soil vapor intrusion into a building is migration from a subsurface source through cracks, foundation joints, or other openings in the floor. Soil vapor intrusion risk assessment work performed during the RI and SRI did not reveal conditions that would warrant additional testing, monitoring or mitigation of cVOCs regulated under the NYSDOH CEH BEEI's SVI guidance document. Based upon the information developed during the RI and SRI work there does not appear to be a soil vapor intrusion exposure risk to future occupants of the Site. Thus, no remedial activities are required for on-Site soil vapor intrusion.

3.5 General Response Actions

After RAOs were established for the Site, several general response actions (GRAs) were evaluated based upon the ability of the response to address the remedial RAOs. These actions are intended to mitigate potential exposure to Site COCs, control the migration of the COCs on the Site, and/or remediate the COCs to the extent practicable. The purpose of establishing GRAs is to begin to evaluate basic methods of protecting human health and the environment, such as removal, treatment, and/or containment of the Site contaminants. The GRAs may then be combined to form alternatives, such as treating contaminated media (if necessary) and providing barriers, containment, or post-treatment monitoring of residual contaminants. The following list summarizes the GRAs that were considered for remediation of the contamination that is present at the Site:

- No Further Action;
- Institutional and Administrative Controls;
- Engineering Controls;
- Natural Attenuation;
- Physical Containment *I* Cover;
- In-Situ Treatment; and
- Removal with Off-Site Disposal.

Each of the GRAs will be analyzed for each remedial alternative in Section 4.0 below.

4.0 DEVELOPMENT OF ALERNATIVES

Based on the completed RI and SRI studies, (3) remedial alternatives have been considered as a means to eliminate/mitigate significant threats to the public health and the environment posed by Site related contaminates. The selected alternatives consist of the following:

- **Alternative No. 1** – No Further Action
- **Alternative No. 2** – Engineered perimeter security fencing; engineered cover system over urban cultural fill exposed at the ground surface, Institutional controls (i.e., NYSDEC environmental easements, deed restrictions, SMP, etc.)
- **Alternative No. 3** – Removal of all historic fill to Unrestricted Use SCO levels and Restoration of ground surfaces

A detailed analysis of these three (3) remedial alternatives for remediation and management of the contaminants in the impacted environmental media present at the Site is provided in the following section.

4.1 Alternative No. 1

This Alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Alternative No. 1 leaves the Site in its present condition and does not provide any additional protection of human health and the environment. This alternative would not involve any surface soil, subsurface soil, groundwater, or soil vapor remedial measures. In addition, this alternative would not place any ICs or ECs on the Site, such as NYSDEC environmental easements, groundwater use limitations, SMP, and/or remediation. As a result, there would be no active reduction in toxicity, mobility, or volume of the contaminants.

Cost - A cost estimate is provided in Appendix D. The costs for this option are as follows: present worth capital costs of $0.00, there are no operation and maintenance (O&M) costs for this alternative.

4.2 Alternative No. 2

Alternative No. 2 includes a combination of ECs and ICs as a means to eliminate/mitigate significant threats to the public health and the environment posed by Site related contaminates. In this alternative a site security perimeter fencing would be installed as an EC to restrict unauthorized access to the Site and an engineered cover system and demarcation barrier would be installed in areas of the Site documented to contain urban cultural fill/soil, above restricted residential use SCOs, at the ground surface and that are not otherwise covered by the existing asphalt, gravel and concrete surfaces; the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). ICs (e.g., NYSDEC Environmental Easements, deed restrictions, etc.) would be placed on the property precluding the use of groundwater at the Site. A Site specific SMP, including a Health and Safety Plan (HASP), would also be developed based on a future mixed "restricted residential" mixed use that is required for the Property. The SMP will be developed as a means to establish specific construction and engineering controls for future Site redevelopment activities. The implementation of a SMP will ensure the proper management [pursuant to 6NYCRR Part 375] of cut soil and / or groundwater that could contain TAL metals, VOCs, SVOCs and/or PCB chemical impacts at the Site.

Cost - A cost estimate is provided in Appendix D. The costs for this option are as follows: institutional costs of $10,000, present worth capital costs of $195,000, and O&M costs for security and maintenance of the existing capped surfaces and security fence of $15,000 per year. Present worth value of annual costs over a 30 year period at 5% is estimated at $230,586.

4.3 Alternative No. 3

This alternative consists of a Site wide urban cultural fill/soil removal program that includes off-Site transportation and disposal, at a permitted facility, to achieve Unrestricted Use SCOs. Based upon the soil boring and sampling data developed during the RI and SRI work, to achieve the Unrestricted Use SCOs outlined in 6NYCRR Part 375 Table 6.8(b), it is estimated that approximately 40,500 yrd³ of impacted urban cultural fill / soil or approximately 46,575 tons would be excavated and disposed of at an off-Site permitted facility.

A detailed sampling plan would also be required to verify the effectiveness of the removal work and confirmation Unrestricted Use SCOs have been achieved. Upon completion of the urban cultural fill / soil removal all excavated areas of the Site would be restored to original grade using clean imported fill soils. It is anticipated that the excavation of impacted soils, backfilling, and Site restoration would require 18 to 24 months to complete.

Under Alternative 3, an extensive dewatering system would be required to facilitate soil excavation at depths below the groundwater table that is about 4 to 6 feet below grade in most areas. Groundwater extracted from the Site during the remedial action would need to be properly managed. It has been assumed that the extracted groundwater can be treated using sediment filtration and granular activated carbon (GAC) to remove the contaminants and then discharged to Gordon Creek or sent off-Site for treatment and disposal.

Cost - A cost estimate is provided in Appendix D. The costs for this option are as follows: present worth capital costs of $8,535,000 for this alternative. Since the site will have achieved Track 2 Restricted Residential Use objectives

5.0 ALTERNATIVES EVALUATION & ANALYSIS

As outlined in DER - 10 Technical Guidance for Site Investigation and Remediation the Alternatives presented in Section 5 have been evaluated on the following criteria:

- Overall Protection of Human Health & the Environment
- Compliance with Standards, Criteria, and Guidance (SCGs)
- Long Term Effectiveness & Permanence
- Reduction in Toxicity, Mobility & Volume
- Short Term Effectiveness & Impacts
- Implementability
- Cost effectiveness
- Land Use

5.1 Overall Protection of Human Health & the Environment

5.1.1 Alternative No. 1

This alternative is the least protective of human health and the environment. Specifically, this alternative does not provide any further actions to eliminate/mitigate exposure risks posed by soil and groundwater contaminates at the Site. Similarly, this action will also result in the absence of IC and EC. Accordingly, the no further action alternative is not protective of public health and does not satisfy the RAOs.

5.1.2 Alternative No. 2

This alternative provides an increased level of protection to human health and the environment through the implementation of ICs and ECs. Although no active remediation is advocated to mitigate the overall low level Site contaminates, the erection of Site perimeter security fencing, the use of and engineered cover systems as well as the institution of NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site will significantly reduce the potential exposure to human health and the environmental. The development of a Site specific SMP will ensure the proper management of cut soil and / or groundwater during future redevelopment activities further reduces potential exposures to human health and the environment. This alternative achieves the RAOs.

5.1.3 Alternative No. 3

Removal and off-Site disposal of urban cultural fill to achieve Unrestricted Use SOCs, as described in Alternative 3, would provide the greatest overall protection for human health and the environmental. This alternative, in the short-term, provides a relatively high exposure risk to human health and the environment during the long duration urban cultural fill removal process. Although short-term safety risks to adjacent properties and contractors is heightened, long-term risks are minimized. This alternative achieves the RAOs.

5.2 Compliance with SCGs

5.2.1 Alternative No. 1

This alternative is a no further action alternative does not included the removal or remediation of Site contaminates. This alternative would however allow for passive attenuation SVOCs and VOCs at the Site over time through natural processes. This alternative would be completed with the lowest level of compliance with SCGs when compared to alternatives 2 and 3.

5.2.2 Alternative No. 2

This alternative is designed, through a combination of ICs and ECs, to eliminate/mitigate risks to human health and the environment posed by Site contaminates. This alternative would allow for passive attenuation SVOCs and VOCs at the Site over time through natural processes. Additionally, a Site specific SMP will ensure the proper handling and disposal of cut soil and / or groundwater that may be encountered during future redevelopment activities. This Alternative would result in compliance with Track 4 Restricted Residential Use SCOs, which are protective of public health and the environment. Implementation of Alternative 2 would provide a higher level of compliance of SCGs than Alternatives 1.

5.2.3 Alternative No. 3

This alternative would achieve the Unrestricted Use SCOs. This alternative would facilitate the removal and off-site disposal of urban cultural fill at the Site with the objective of achieving Unrestricted Use SCOs. Alternative 3 would result in a permanent reduction of all Site related contaminants and therefore, achieve the highest level of compliance with SCGs.

5.3 Long-Term Effectiveness & Permanence

5.3.1 Alternative No. 1

This alternative is a no further action alternative that does not include the removal or remediation of Site contaminates. Alternative does not provide long-term effectiveness in reducing exposures to human health or the environment from Site contaminants. This alternative would allow for passive attenuation SVOCs and VOCs at the Site over time through natural processes. This alternative would be completed with the lowest level of long-term effectiveness when compared to alternatives 2 and 3.

5.2.2 Alternative No. 2

Through the implementation of ICs and EC this alternative reduces long-term exposure risks to human health and the environment by preventing unauthorized access to the Site with the installation of perimeter security fencing; an engineered cover system to isolate areas of urban cultural fill/soils that are exposed at the ground surface; the implementation of NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater resources at the Site; and establishing a Site specific SMP to ensure the proper handling and disposal of cut soil and / or groundwater that may be encountered during future redevelopment activities. Therefore, alternative 2 provides a greater long-term effectiveness towards human heal and environmental exposure risks than alternative 1.

5.2.3 Alternative No. 3

This alternative would achieve the Unrestricted Use SCOs and provide the greatest long-term effectiveness towards eliminating/mitigating exposure risks to human health and the environment. This alternative would facilitate the removal and off-site disposal of urban cultural fill at the Site with the objective of achieving Unrestricted Use SCOs. Alternative 3 would result in a permanent reduction of all Site related contaminants and therefore, achieve the highest level of compliance with SCGs.

5.4 Reduction in Toxicity, Mobility & Volume

5.4.1 Alternative No. 1

This alternative is a no further action alternative that does not include the removal or remediation of Site contaminates and thus would only provide reduction in toxicity, mobility and volume by natural attenuation processes only.

5.4.2 Alternative No. 2

This alternative does not provide an immediate reduction in toxicity, mobility and volume of Site contaminants. However, the implementation of a Site specific SMP will establish construction and engineering controls for future Site redevelopment activities. An SMP will ensure the proper handling and disposal of cut soil and / or groundwater that may be encountered during future redevelopment activities thus providing a reduction in toxicity, mobility and volume through development.

5.4.3 Alternative No. 3

Alternative 3 provides the greatest reduction in the toxicity, mobility, and volume of Site contaminants through the excavation and disposal of urban cultural fill exceeding Unrestricted Use SCOs.

5.5 Short Term Effectiveness & Impacts

5.4.1 Alternative No. 1

This alternative is a no further action alternative that does not include the removal or remediation of Site contaminates. Reductions in toxicity, mobility and volume would occur via natural attenuation processes only and thus would not be effective in limiting potential exposures posed by Site contaminates in the short term.

5.4.2 Alternative No. 2

This alternative provides an effective short term solution towards limiting potential exposures to human health and the environment through the implementation of ECs and ICs. The installation of Site perimeter security fencing and engineered cover systems would preclude unauthorized pedestrian access to the Site as well limit the potential for human contact with site contaminates. Furthermore the implementation of a Site specific SMP, NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site will significantly reduce the potential exposure to human health and the environment. It is anticipated the IC and EC work could be completed in approximately 1 month.

5.4.3 Alternative No. 3

This alternative would require the greatest amount to time to complete, approximately 18 to 24 months, and therefore not effective in the short term. The intrusive earthwork activities associated with this alternative have the greatest potential of disrupting nearby businesses and residents during construction activities as well as exposure risks to workers from Site related contaminants. This alternative would be the most intrusive and have the most adverse impacts to the immediate commercial and residential area, including truck traffic, diesel emissions, noise, and road damage effects. This alternative would also require a significant amount of land consumption associated with the truck transport of mined material from an authorized borrow pit. To limit potential exposure risks to Site workers and adjacent sites a community air monitoring program (CAMP)

and a health and safety plan (HASP) would also be required. This is also the least "green" alternative and is considered to pose the greatest potential safety threat to workers during the remedial actions due to the site wide magnitude of the excavation areas, large excavation equipment, and the hazards of working with this equipment.

5.6 Implementability

5.4.1 Alternative No. 1

This alternative is a no further action alternative that does not include any additional remedial or monitoring activities and no ICs or ECs would be instituted. Accordingly, the no further action alternative is not protective of public health and does not satisfy the RAOs.

5.4.2 Alternative No. 2

Alternative 2 consists of the development and implementation of ECs and ICs to eliminate/ mitigate potential risks to human health and the environment posed by Site contaminates. This alternative includes the installation of Site perimeter security fencing and an engineered cover systems for cultural fill soil not otherwise capped and covered, as well as the implementation of a Site specific SMP, NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site. This alternative is easily technically implementable with readily available methods, equipment, materials, and services.

5.4.3 Alternative No. 3

This alternative is the least implementable, the most complicated, requires the most planning / coordination and requires the greatest period of time to complete. The intrusive earthwork activities associated with this alternative have the greatest potential of disrupting nearby businesses and residents during construction activities as well as exposure risks to workers from Site related contaminants. This alternative would be the most intrusive and have the most adverse impacts to the immediate commercial and residential area, including truck traffic, diesel emissions, noise pollution, and road damage effects. Due to the aerial and vertical extent of the urban cultural fill removal engineered excavation planning and Site controls such as engineered excavation shoring, community air monitoring program (CAMP), health and safety plan (HASP) and storm water pollution prevention planning (SWPPP) would be required.

Additionally, an extensive groundwater dewatering and system would be required to allow for excavation of impacted urban cultural fill from areas beneath the groundwater table. Similarly, all groundwater generated during the implantation of this alternative would need to be stored, treated and/or transported off-Site for disposal at a permitted wastewater treatment facility. Therefore, this alternative would be the most difficult to implement due to the overall magnitude of the size of the proposed excavation requirements to physically complete the work.

5.7 Cost Effectiveness

5.4.1 Alternative No. 1

This alternative is a no further action alternative that does not include any additional remedial or monitoring activities and no ICs or ECs would be instituted. Accordingly, the no further action alternative leaves the Site in its current condition with no additional costs, thus cost to implement this alternative in $0.00.

5.4.2 Alternative No. 2

Alternative 2 consists of the development and implementation of ECs and ICs to eliminate/ mitigate potential risks to human health and the environment posed by Site contaminates. This alternative includes the installation of Site perimeter security fencing, an engineered cover systems, as well as the implementation of a Site specific SMP, NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site. This alternative is easily technically implementable with readily available methods, equipment, materials, and services.

5.4.3 Alternative No. 3

The estimated cost for alternative 3, which includes Site-wide excavation of urban cultural fill from depths ranging between ±2 – 16 feet below grade is excessively cost prohibitive. Costs associated with this alternative include excavation, transportation and off-Site disposal of non-hazardous urban cultural fill, excavation backfilling the excavation with clean imported soils. The estimated cost for this alternative is $8,535,000 (present worth). This alternative is the most expensive by multiple orders of magnitude. This alternative is the least cost effective when compared to the other alternatives.

5.8 Land Use

5.4.1 Alternative No. 1

This alternative is a no further action alternative that does not include any additional remedial or monitoring activities and no ICs or ECs would be instituted. Given the potential future Site use scenario as a mixed use first floor commercial / retail space with second floor residential apartments this alternative would not satisfy a Track 4 Restricted Residential Use scenario.

5.4.2 Alternative No. 2

This alternative consists of the development and implementation of ECs and ICs to eliminate/ mitigate potential risks to human health and the environment posed by Site contaminates. This alternative includes the installation of Site perimeter security fencing, the strategic placement of an engineered cover system, maintenance of existing engineering cover systems, as well as the implementation of a Site specific SMP, NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site. Given the potential future Site use scenario as a mixed use first floor commercial / retail space with second floor residential apartments this alternative, through the implementation of a Site specific SMP, would satisfy a Track 4 Restricted Residential Use scenario.

5.4.3 Alternative No. 3

This is a Site wide urban cultural fill removal alternative with an objective of pursuing Unrestricted Use SCOs. This alternative would allow for unrestricted use of the site (i.e., residential, agricultural, etc.).

6.0 RECOMMENED REMEDY

Based on the comparative analysis of the three (3) presented in Section 6, alternative 2 would cost-effectively achieve the best balance of the eight NYSDEC evaluation criteria, and is therefore the recommended alternative. Alternative No. 2 includes the development and implementation of ECs and ICs to eliminate/mitigate significant threats to the public health and the environment posed by Site related contaminates. While in its current vacant condition, through the construction of Site security perimeter fencing and use of strategic cover systems, this alternative will reduce potential short term exposure to human health from Site contaminants by reducing potential for unauthorized access to the Site and inadvertent contact with contaminated urban cultural fill. Additionally, ICs will reduce long-term exposures to Site contaminates through the implementation of NYSDEC Environmental Easements, deed restrictions and Site specific SMP. Alternative 2 will achieve the RAOs related to protection of human health and the environment, is easily implementable, has few short-term negative impacts, and will be effective over the long-term.

7.0 REMEDIAL ACTION WORK PLAN

7.1 Description of Remedial Action

The objective of this RAAR / RAWP is to identify and evaluate remedial alternatives with the goal of developing an appropriate remedial action for contaminated media at the Site. Alternative 2 *(see* Section 6.0) was selected as the preferred remedial action (RA) alternative for the Site. Alternative 2 consists of the development and implementation of ECs and ICs that include: the installation of Site perimeter security fencing, the use of engineered cover systems, NYSDEC Environmental Easements and deed restrictions precluding the use of groundwater at the Site and a Site specific SMP to establish specific construction and engineering controls for future Site redevelopment activities as well as the proper handling and disposal of impacted Site media. It is estimated that approximately 2,000 feet of 6 foot high chain link fencing would encompass the western and northern Site boundaries as well as portions of the southern and eastern boundaries along Gordon Creek and Bath Street that are not already improved by barriers (i.e., Site building and canal wall). An engineered cover system would be installed along the southwestern and northwestern portions of the Site in areas documented to contain urban cultural fill/soil at the ground surface which exceed the restricted residential use SCOs. It is estimated that this area represents approximate 39,000 square feet. A schematic depicting the proposed locations of the perimeter security fencing and engineered cover systems is included as **Figure 4**.

7.2 Institutional Controls

ICs would be established for the final remedy based upon the Site's potential future mixed use first floor commercial / retail space with second floor residential apartments to be cleaned up to Track 4, Restricted Residential Use. The institutional controls would restrict activities on the Site and protect current and future users from exposure to the residual environmental contamination at the Site. The following would be part of the ICs:

- An environmental easement as per NYSDEC requirements outlined in DER-10
- Limitations on site use based on the proposed remedial action
- Restrictions precluding the use of groundwater at the Site; and
- Site specific SMP

7.3 Site Management Plan

A Site specific SMP establishing specific construction and engineering controls for future Site redevelopment activities as well as outlining the proper handling and disposal of impacted Site media will be prepared in accordance with DER-10. The SMP would also include the means and methods to inspect, monitor and maintain existing capped surfaces and / or install new caps over areas involved in the redevelopment work, as well as to inspect, monitor and maintain the Site perimeter security fencing presented in alternative 2. The elements listed below are considered necessary for the proper management of Site media and to limit the potential exposures to human health and the environment. A site-specific Health & Safety Plan (HASP) would be prepared separately for the protection of workers and other personnel on-site during the course of potential future redevelopment of the Site. The HASP would be developed in accordance with 29CFR1910, and would be based on Site conditions, known or suspected chemical hazards, and proposed construction activities. A generic sample SMP and HASP is included in **Appendix E**.

- Inspections: Regular inspections (at least monthly at the outset) to ensure the existing cover systems and Site perimeter security fencing remains in place and is effective in preventing human exposure to site contaminants
- Operation & Maintenance (O&M): The O&M plan would include procedures for routine maintenance requirements of the existing cover systems and Site perimeter security fencing
- Corrective Measures: Procedures for corrective measures such as repairs to the existing asphalt/concrete surfaces and Site perimeter security fencing presented in alternative 2
- Materials Management: Procedures for screening, handling, reuse and disposal of impacted media that may be encountered during future Site redevelopment activities
- Engineered Cover Systems: Procedures for designing cover systems in areas of the Site that exceed Restricted Residential SCOs
- Fugitive Dust Suppression and Community Air Monitoring Program: Procedures outlining the manner in which fugitive dust suppression and monitoring is to be conducted during future Site redevelopment.

APPENDIX A

VILLAGE OF BALLSTON SPA ZONING INFORMATION

Village of Ballston Spa, NY
Tuesday, January 23, 2018

Chapter 205. Zoning

Article X. Supplementary Use Regulations

§ 205-55.2. Retail use in the Central Business District Zone.

[Added 10-23-2006 by L.L. No. 6-2006; amended 4-23-2007 by L.L. No. 3-2007]

A. Any change of use on the ground floor of a structure located within the Central Business District Zone shall be used only for retail space with the following exceptions:

(1) Vital human services.

(2) Offices by special permit.

(3) Churches and houses of religious worship.

(4) Libraries.

(5) Museums.

(6) Hotels.

(7) Banks and financial institutions.

(8) Parking garages.

B. Any existing use of the ground floor of a structure at the time of this section's enactment may continue until such time that the existing use is discontinued.

C. To qualify as retail space in the Central Business District Zone, at least 80% of the total square footage of the ground floor of such structure must be dedicated to and be used for retail business use.
[Added 4-22-2013 by L.L. No. 1-2013]

Village of Ballston Spa, NY
Tuesday, January 23, 2018

Chapter 205. Zoning

Article III. District Boundaries

§ 205-8. Purpose of districts.

A. Residential Zoning Districts R-1 and R-2 are planned to increase the values of buildings and property used for permanent living occupancy and to meet the purposes as stated in Article I of this chapter.

B. Buildings used for purposes other than permanent occupancy should be constructed and maintained in the other districts as described below, except that nonresidential special permit uses may be allowed as outlined in Schedule A.[1]

(1) The Central Business District is planned to include various appropriate types of nonresidential buildings and property that can serve the residents of the entire Village and which are permitted by Article IV of this chapter.

(2) The Commercial Zoning District is planned to include nonresidential buildings and property that serve businesses.

(3) The Industrial Zoning District is similarly nonresidential and restricted particularly to manufacturing uses.

(4) The Cultural/Economic Enhancement Zone is a nonresidential nonretail zone which shall include a mixture of high tech manufacturing, office uses, low-impact industrial uses and cultural development areas. Notwithstanding Schedule A of this chapter, permitted uses shall be limited to electrical manufacturing or repairs, office use, professional use, storage, schools of instruction and light industrial uses.
[Added 7-24-2000 by L.L. No. 1-2000]

[1] *Editor's Note: Schedule A is located at the end of this chapter.*

C. Area and bulk regulations for the five zoning districts can be found in Schedule B.[2]

[2] *Editor's Note: Schedule B is located at the end of this chapter.*

205 Attachment 1

SCHEDULE A

SCHEDULE OF USES BY ZONING DISTRICT
Part 1
[Amended 10-25-1999 by L.L. No. 7-1999]

Districts:
R-1 Residential
R-2 Residential
CBD Central Business District
C Commercial
M Industrial

Key:
P = permitted use
SP = use requiring special permit
X = prohibited use

Use	R-1	R-2	CBD	C	M
One-family dwelling	P	P	X	X	X
Two-family dwelling	X	P	X	X	X
Multiple-family dwelling	X	P	SP	SP	X
Townhouse	X	P	X	X	X
Cemetery	SP	SP	X	X	X
Church (or other place of religious worship, parish house, convent)	SP	SP	P	P	X
Funeral home or undertaker	SP	P	X	P	X
Hospital or health care facility	SP	SP	X	SP	X
Nursing or convalescent home	SP	SP	X	SP	X
Offices (state, federal or county)	SP	SP	P	X	X
Offices (village)	X	X	P	X	X
Public, private or parochial school devoted to kindergarten, elementary or general secondary instruction	SP	P	X	X	X
Nursery school	SP	SP	X	X	X
Public parks or playground	SP	P	P	X	X
Club or lodge, social, recreational or fraternal	SP	SP	SP	SP	X
Library or museum	X	SP	P	SP	X
Boarding- or rooming house	X	P	X	X	X
Bed-and-breakfast*	X	P	X	X	X
Hotel	X	X	P	P	X
Motel	X	X	X	P	X
Dwelling apartment over business office	X	P	P	P	X
Mobile home park	X	SP	X	X	X

Notes:
*Owner-occupied bed-and-breakfasts are also allowed in the Historic District by special permit. The owner must reside in the bed-and-breakfast structure.

205 Attachment 2

SCHEDULE A

SCHEDULE OF USES BY ZONING DISTRICT
Part 2

Districts:

R-1 Residential
R-2 Residential
CBD Central Business District
C Commercial
M Industrial

Key:

P = permitted use
SP = use requiring special permit
X = prohibited use

Use	R-1	R-2	CBD	C	M
Home occupation	SP	SP	X	X	X
Private school of special instruction	X	SP	SP	X	X
Professional and personal service uses	X	SP	P	P	X
Self-service storage facility	X	X	X	P	X
Retail business use	X	X	P	P	X
Bank or monetary institution	X	X	P	P	X
Newspaper, publisher or printer	X	X	P	P	X
Restaurant	X	X	P	P	X
Electronic repair, electrician, appliance sales	X	X	P	P	X
Builder or contractor, carpenter	X	X	X	P	P
Automobile sales	X	X	X	P	X
Garden nursery or greenhouse	X	X	X	P	P
Cold storage	X	X	SP	SP	SP
Commercial parking lots	X	X	P	P	P
Village garage	X	X	X	P	X
Public garage or gasoline service station	X	X	SP	P	X
Trucking terminal or commercial storage	X	X	X	X	P
Industrial use	X	X	X	X	P
Adult cabaret or adult entertainment center	X	X	X	SP	X

APPENDIX B

FIGURES

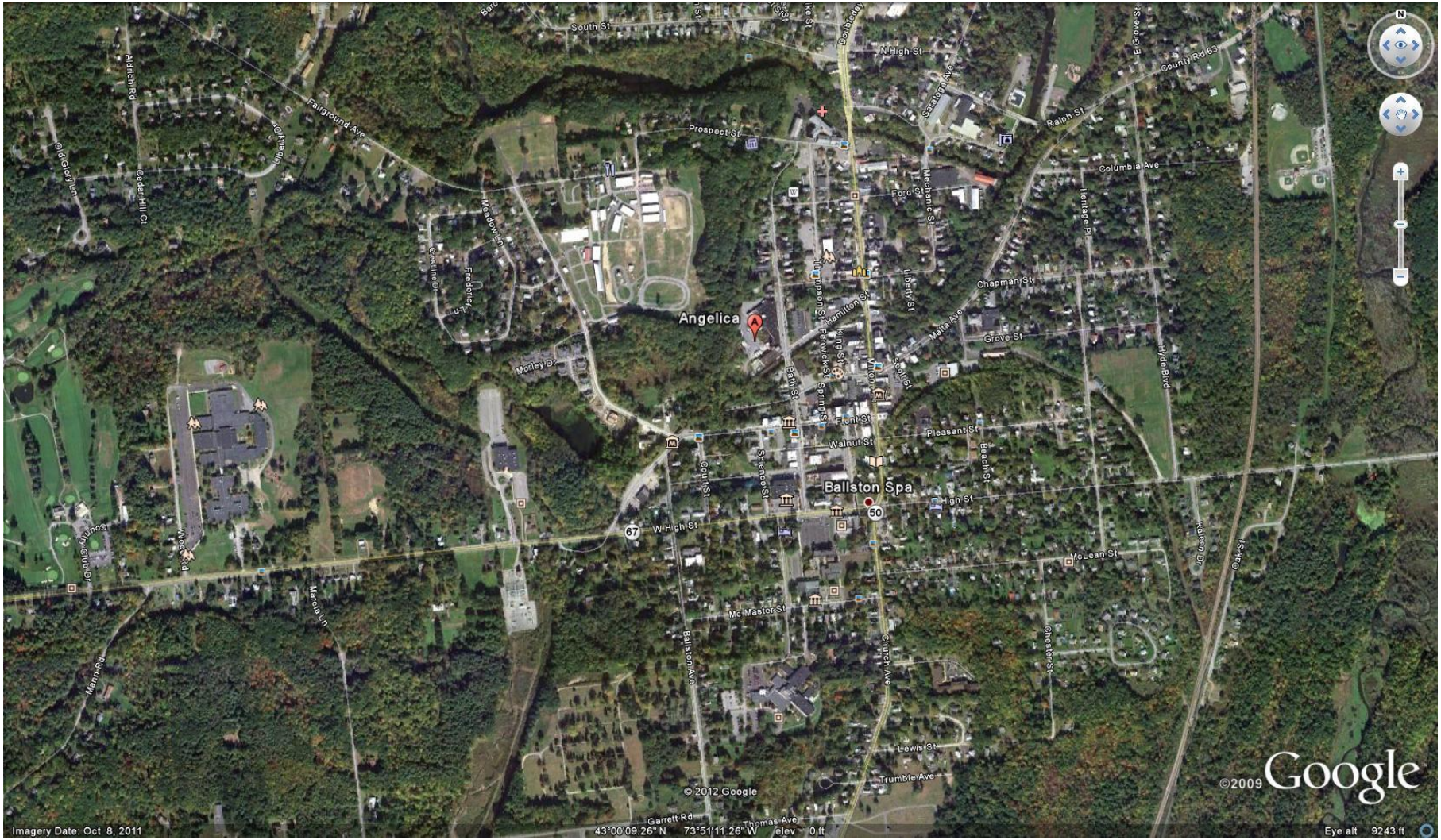
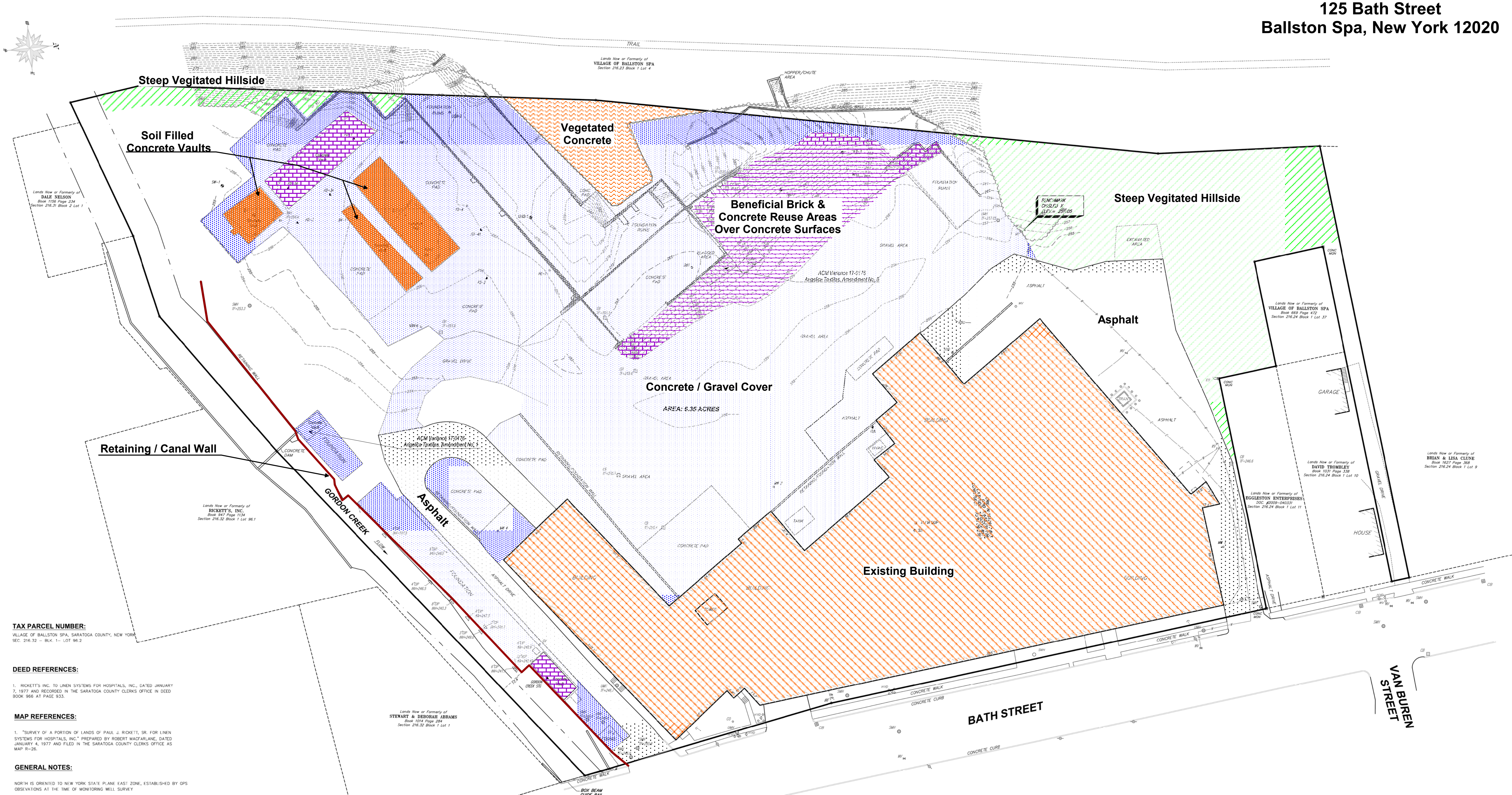


Figure 1

Site Vicinity Map
Angelica Textile Services, Inc.
125 Bath Street
Ballston Spa, New York 12020

Figure 2
Existing Cap & Cover Surfaces
Angelica Textile Services, Inc.
125 Bath Street
Ballston Spa, New York 12020



30 0 30
SCALE IN FEET
1"=30'

Sample Key:
- Vapor / Ambient Air Sample Location
- Boring / Well Location
- BoringLocation
- Sediment Sample Location

TAX PARCEL NUMBER:

VILLAGE OF BALLSTON SPA, SARATOGA COUNTY, NEW YORK
SEC. 216.32 – BLK. 1– LOT 96.2

DEED REFERENCES:

1. RICKETT'S INC. TO LINEN SYSTEMS FOR HOSPITALS, INC., DATED JANUARY 7, 1977 AND RECORDED IN THE SARATOGA COUNTY CLERKS OFFICE IN DEED BOOK 966 AT PAGE 933.

MAP REFERENCES:

1. "SURVEY OF A PORTION OF LANDS OF PAUL J. RICKETT, SR. FOR LINEN SYSTEMS FOR HOSPITALS, INC." PREPARED BY ROBERT MACFARLANE, DATED JANUARY 4, 1977 AND FILED IN THE SARATOGA COUNTY CLERKS OFFICE AS MAP R–26.

GENERAL NOTES:

NORTH IS ORIENTED TO NEW YORK STATE PLANE EAST ZONE, ESTABLISHED BY GPS OBSEVATIONS AT THE TIME OF MONITORING WELL SURVEY

VERTICAL DATUM IS NAVD88 ESTABLISHED BY GPS OBSERVATIONS AT THE TIME OF MONITORING WELL SURVEY

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES .

SURVEYED FROM RECORD DESCRIPTION AND AS IN POSSESSION.

NO ABSTRACT OF TITLE OF CURRENT TITLE REPORT HAS BEEN ISSUED.

SUBJECT TO COVENANTS, EASEMENTS, RESTRICTIONS, CONDITIONS AND AGREEMENTS OF RECORD.

SURVEY SUBJECT TO ANY RIGHT, TITLE OR INTEREST THE PUBLIC MAY HAVE FOR HIGHWAY USE.

SURVEY SHOWN IS SUBJECT TO ANY SUBSURFACE CONDITIONS THAT MAY EXIST, IF ANY.

Soil boring and vapor sample locations USB-1, SS, OA, IA and IA DUP were not included in the site survey. These locations have been approxiamted for illustrations purposes only.

IDENTIFICATION	LOCATION NORTHING	LOCATION EASTING	LOCATION LATITUDE	LOCATION LONGITUDE	WELL/GROUND ELEVATION	PVC RISER ELEVATION
MW–1	1520448.377	665508.889	43°00'18.08"	–73°51'06.38"	244.34	243.87
MW–2	1520147.052	665435.985	43°00'15.10"	–73°51'07.40"	255.47	255.11
MW–4	1519955.572	665446.036	43°00'13.21"	–73°51'07.28"	249.51	249.06
B4–1	1519875.804	665222.527	43°00'12.44"	–73°51'10.30"	256.00	255.97
NW–1	1519917.673	665170.211	43°00'12.86"	–73°51'11.00"	256.66	256.69
FD–4	1519957.637	665222.375	43°00'13.25"	–73°51'10.29"	257.18	256.88
B3–2	1519915.161	665224.191	43°00'12.83"	–73°51'10.27"	255.50	255.55
NE–1	1520009.660	665272.215	43°00'13.76"	–73°51'09.62"	257.05	257.83
MW6	1519917.813	665301.426	43°00'12.85"	–73°51'09.23"	255.90	255.89
USB–2	1519952.762	665157.644	43°00'13.21"	–73°51'11.16"	275.3	
DB1	1520106.652	665280.619	43°00'14.72"	–73°51'09.49"	264.75	
BB2	1520182.572	665252.786	43°00'15.47"	–73°51'09.86"	259.47	
WELL	1520219.449	665224.959	43°00'15.84"	–73°51'11'10.23"	261.25	

BATH STREET

TOPOGRAPHIC SURVEY
OF A PORTION OF THE LANDS OF
LINEN SYSYTEMS FOR HOSPITAL, INC.

VILLAGE OF BALLSTON SPA	SARATOGA COUNTY, N.Y.
SCALE: 1"=30'	OCTOBER 12, 2017
DRAWN BY:	PROJECT NO: 17-2048

REVISED 4-13-18

Ausfeld & Waldruff Land Surveyors LLP
323 CLINTON STREET, SCHENECTADY NY
Phone: (518) 346-1595 Fax: 518-770-1655

STATE OF NEW YORK VINCENT P. AUSFELD 49597 LICENSED PROFESSIONAL SURVEYOR

VINCENT P. AUSFELD P.L.S.
LICENSE #049597
www.awlsllp.com

Drawing Name: Z:\PROJECTS\2017\17–2048\dwg\17–2048–BM.dwg
Xref's Attached:
Date Printed: Apr 13, 2018, 5:11pm

PROJECT INFORMATION

TAX MAP:	No. 216.32-1-96.2
ADDRESS:	125 BATH STREET, VILLAGE OF BALLSTON SPA, SARATOGA COUNTY, NY
ZONE:	CBD CENTRAL BUSINESS DISTRICT (FORMERLY INDUSTRIAL IND)
SITE AREA:	6.35 ACRES (276,606 SF)
PROPOSED:	MIXED-USE DEVELOPMENT
PARKING:	220 SPACES

BUILDING THREE
• 3-STORY
• 10,500 SF BUSINESS/OFFICE
• 32 DWELLING UNITS

BUILDING FIVE
• 2-STORY
• 4,800 SF RESTAURANT

BUILDING FOUR
• 2-STORY
• 3,000 SF BUSINESS

BUILDING SIX
• 2-STORY
• 20 DWELLING UNITS

BUILDING TWO
• 3-STORY
• 11,750 SF BUSINESS/OFFICE
• 32 DWELLING UNITS

BUILDING ONE
• 2-STORY
• 35,834 SF RETAIL
• 22 DWELLING UNITS

BENCHMARK
CHISLED 'X'
ELEV. = 258.05

BATH STREET

Figure 3
Conceptual Site Plan
Angelica Textile Services, Inc.
125 Bath Street Ballston Spa, New York 12020

SITE PLAN — SCALE: 1" = 30'-0" (24x36 LAYOUT)
SCALE: 1" = 60'-0" (11x17 LAYOUT)

CONCEPTUAL SITE PLAN - 6.7.19 - NOT FOR CONSTRUCTION

USE OF DOCUMENTS

THESE DOCUMENTS ARE INSTRUMENTS OF SERVICE FOR THE USE SOLELY WITH RESPECT TO THIS PROJECT, AND SHALL REMAIN THE PROPERTY OF THE DESIGN PROFESSIONAL. THE DESIGN PROFESSIONAL SHALL RETAIN ALL COMMON LAW, STATUTORY, AND OTHER RESERVED RIGHTS INCLUDING THE COPYRIGHT(S). THE OWNER SHALL NOT REUSE OF PERMIT THE REUSE OF THESE DOCUMENTS, INCLUDING ANY DESIGN DEVELOPMENT. CHANGES OR ALTERATIONS TO THESE DOCUMENTS WITHOUT THE DIRECT WRITTEN AUTHORIZATION OF THE DESIGN PROFESSIONAL IS PROHIBITED.

Verdant Architecture
PO Box 308
Ballston Spa, NY 12020
518.490.2040
timothy@verdantarchitecture.com
contact: Timothy Wade

No.	Description	Date

Project Name

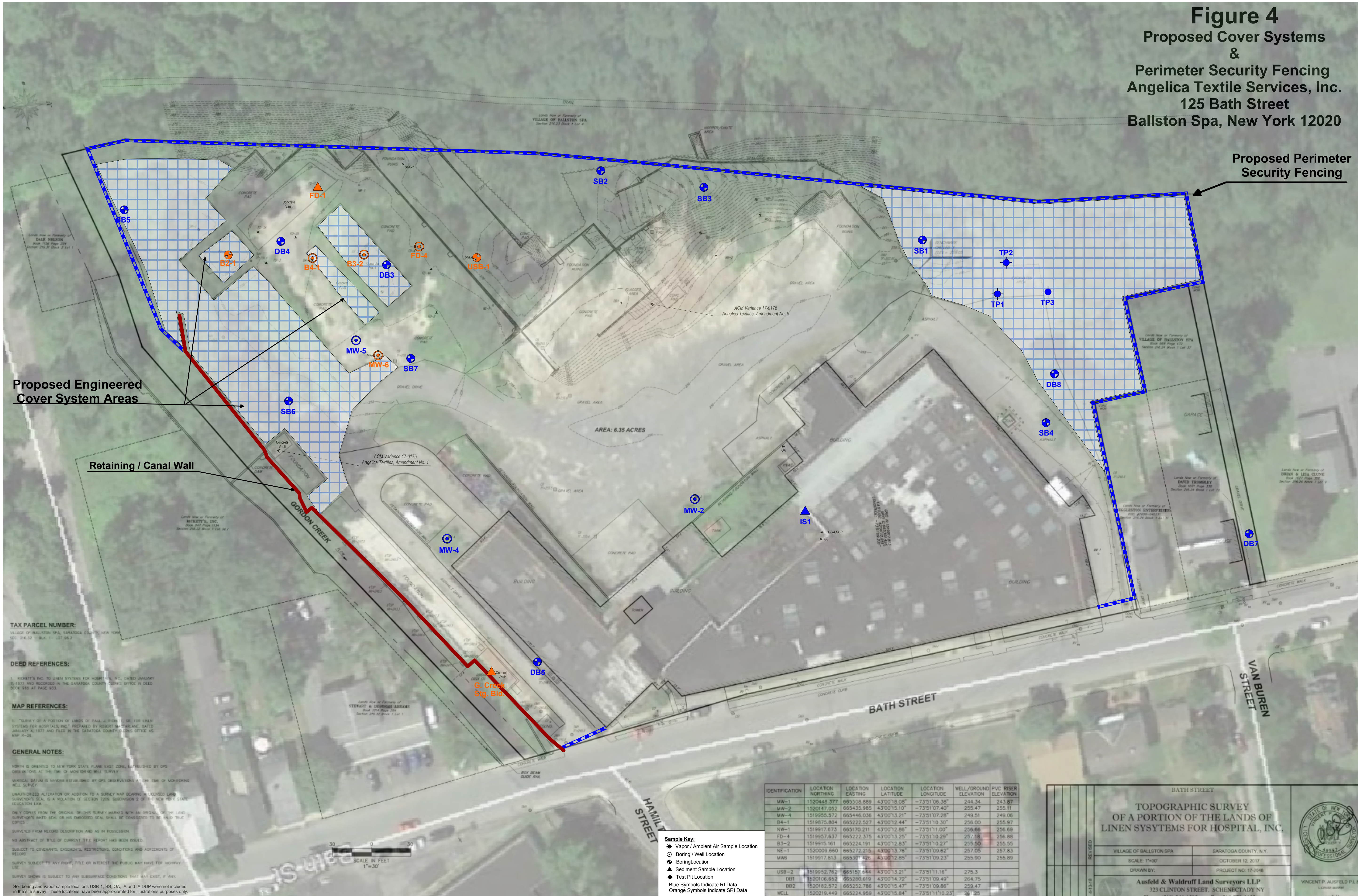
BATH STREET COMMONS
125 Bath Street
Ballston Spa, NY 12020

SITE PLAN

Project Number	1903
Date	CD Release
Drawn By	VA
Checked By	

A003

Scale: As Noted



IDENTIFICATION	LOCATION NORTHING	LOCATION EASTING	LOCATION LATITUDE	LOCATION LONGITUDE	WELL/GROUND ELEVATION	PVC RISER ELEVATION
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B4-1	1519875.804	665222.527	43°00'12.44"	-73°51'10.30"	256.00	255.97
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FD-4	1519957.637	665222.375	43°00'13.25"	-73°51'10.29"	257.18	256.88
B3-2	1519915.161	665224.191	43°00'12.83"	-73°51'10.27"	255.50	255.55
NE-1	1520009.660	665272.215	43°00'13.76"	-73°51'09.62"	257.05	257.83
MW6	1519917.813	665301.426	43°00'12.85"	-73°51'09.23"	255.90	255.89
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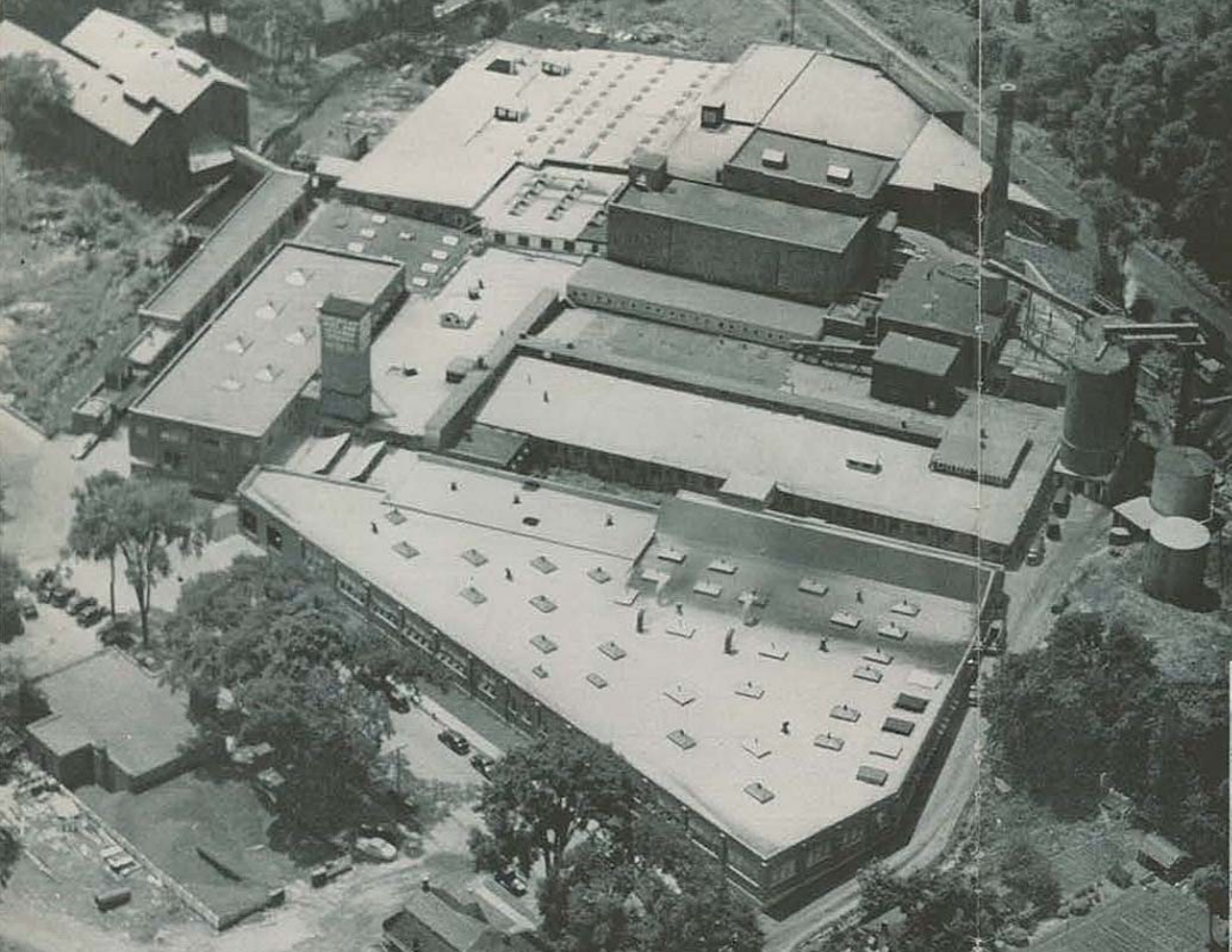
BB2	1520182.572	665252.786	43°00'15.47"	-73°51'09.86"	259.47	
WELL	1520219.449	665224.959	43°00'15.84"	-73°51'11'10.23"	261.25	

APPENDIX C

FORMER HAIGHT/AMERICAN HIDE TANNERY HISTORIC PHOTO



APPENDIX D

ESTIMATED PRESENT WORTH COST ANALYSIS

Estimated Present Worth of Costs of Alternatives 1, 2, & 3
125 Bath Street, Ballston Spa, NY 12020

Alternative	Description	Institutional Cost	Capital Cost	Annual Cost	Present Worth Annual Cost
1	No Futher Action	$0	$0	$0	$0
2	Engineered perimeter security fencing; Institutional controls (i.e., NYSDEC environmental easements, deed restrictions, SMP, ect.)	$10,000	$195,000	$15,000	$230,586
3	Removal of all historic fill to Unrestricted Use SCO levels and Restoration of ground surfaces	$0	$8,535,000	$0	$0

Note: All costs are estimated. Present worth annual costs projected to 30 years at 5%.

APPENDIX E

GENERIC SAMPLE SITE MANAGEMENT AND HEALTH & SAFETY PLAN

SITE MANAGEMENT PLAN

FORMER HAIGHT /AMERICAN HIDE
125 Bath Street
Ballston Spa, New York
BCP Site # C546055-10-12

PREPARED FOR:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation Region 5
1115 Route 86 - P.O. Box 296
Ray Brook, NY 12977
AND
JJB 125 Bath, LLC
125 Bath Street
Ballston Spa, NY 12020

PREPARED BY:

NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORP.
1476 Route 50 - P.O. Box 2167
Ballston Spa, New York 12020

DATED:

August 12, 2019

"..... providing integrated geo-environmental, engineering and geotechnical services ....."

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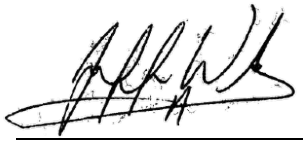
Appendix A Maps

Appendix B Sample Health And Safty Plan (HASP)

CERTIFICATION STATEMENT

I *Jeffrey T. Wink* certify that I am currently a Qualified Environmental Professional [as in defined in 6 NYCRR Part 375] and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



Jeffrey T. Wink PG License No. 000566-1

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

On behalf of the owner and Brownfields Cleanup Program (BCP) applicant JJB 125 Bath LLC; Northeastern Environmental Technologies Corp. (NETC) has prepared a site management plan (SMP) for the Former Haight/American Hide Tannery Site located at 125 Bath Street, Ballston Spa, Saratoga County, New York and New York State Department of Environmental Conservation (NYSDEC) BCP Site No. C546055 (hereinafter termed the "Site").

1.1.1 GENERAL INFORMATION

This SMP has been prepared by NETC on the behalf of JJB 125 Bath LLC, in accordance with the requirements identified in DER-10 Technical Guidance for Site Investigation and Remediation. This SMP addresses the means and methods considered appropriate at this time to manage chemical impacts identified at the Site. Modifications to the SMP may be deemed appropriate based on the actual conditions encountered at the Site during future earthwork activities.

1.1.2 PURPOSE

Given a specific development plan does not exist for the Site, this SMP establishes general means and methods to manage future earthwork activities that have the potential for encountering chemical impacts related to BCP Site No. C546055 in soil and groundwater.

This SMP provides a detailed description of the means and methods considered appropriate to manage chemcial impacts documented at the Site which may be encounterd during future earthwork activities (if any) contemplated for the Site. To achieve this goal in a way that is protective of human health and the environment this SMP includes the following procedures:

- Media monitoring;
- Performance of periodic inspections, certification of results, and submittal of periodic review reports that may be deemed necessary, and;
- Defining criteria for managing on site operations / activities.

To address these requirements, this SMP includes an operation and maintenance plan to be used during invasive earthwork activities at the Site. Revisions to this plan will be proposed in writing and submitted to NYSDEC for review and approval prior to deviation.

1.2 SITE BACKGROUND

1.2.1 SITE LOCATION & DESCRIPTION

The Site; a single 6.35 acre commercial business district (CBD) zoned parcel of, is located in the Town of Milton, Village of Ballston Spa, Saratoga County, New York (see **Appendix A**, **Figure 1**). The Site, located at 125 Bath Street immediately north of Gordon Creek and the intersection of Bath Street and Hamilton Avenue is identified by the Village of Ballston Spa as Tax Map No. 216.32 – 1- 96.2 A mixture of single family and multi-family residential properties exist north, south, and east of the Site. Unimproved wooded land, a bike path of the Village of Ballston Spa and the Saratoga County Fairgrounds exist west of the Site. A tributary of the Kayaderosseras Creek (i.e., Gordon Creek) boarders the southern property line of the Site. The Porter's Auto Body Shop is located south of Gordon Creek. The Site is situated in a low valley at an approximate elevation of 244 feet above mean sea level (AMSL). Half a mile north and south of the Site, elevations increase by approximately 100 feet.

Improvements at the Site include a ± 80,000 square foot vacant commercial manufacturing structure most recently operated by Angelica which is located along the Bath Street road frontage of the property;

as well as a series of foundation ruins historically used by the Former Haight/American Hide Tannery manufacturing facility that are located along the southern and western portions of the Site. With the exception of the southwest and northwest portions of the Site, areas not occupied by the above noted structures are improved by asphalt, concrete and gravel surfaces or exist as landscaped green space.

1.2.2 SITE HISTORY

Historic records document industrial development of the Site beginning in ± 1881. Tannery operations of the *Haight and Company, American Hide & Leather,* and *Howes Leather* which were the focus of the IRM, reportedly occurred during the period from 1887 to 1960. The most recent owner / operator of the Site was Angelica, which acquired the Site and the business entity, Linen Systems for Hospitals, Inc. ("Linen Systems") in 1977 and officially changed Linen Systems name to Angelica on or about 1984. Linen Systems acquired title to the Site in 1977. The deed remains in the name of Linen Systems for Hospitals, Inc. (Ref. Exhibit B of the BCP application, including the deed). Linen Systems and later Angelica performed laundering of garments with detergents on the Site and warehoused linens from approximately 1977 through 2011 without the use of dry cleaning chemicals. Angelica has ceased operations on Site.

Environmental contamination associated with the Angelica Site was first discovered in July 2010 following an extended rain fall event, in the vicinity of a former 100,000 gallon No. 6 oil above ground storage tank (AST) historically located northeast of the 2017 demolition interim remedial measures (IRM) work zone. Upon discovery, the NYSDEC assigned Spill No. 1004405 to the release (Ref. Exhibit K of the BCA application). Site investigation work conducted by ECI sufficiently demonstrated that the nature and extent of the contaminants warranted the inclusion of the Site into the NYSDEC Brownfields Cleanup Program (BCP). The Site was accepted in the BCP on January 31, 2013.

Demolition IRM work performed in 2017 was undertaken to facilitate SRI work in areas occupied by a series of former condemned manufacturing structures, a large smoke stack and foundational ruins historically the Former Haight/American Hide Tannery manufacturing facility. The IRM work included the closure of abandoned fuel storage systems and undocumented vessels found to exist in the manufacturing structures. The ± 80,000 square foot commercial manufacturing structure (most recently operated by Angelica) located along the eastern road frontage of the Site was excluded from the IRM work and was to remain at the Site. The IRM work zone comprised a footprint of ± 2.5 acres. There are currently no environmental permits associated with Site.

1.2.3 GEOLOGIC CONDITIONS

Based upon a review of the Surficial Geologic Map of New York, the overburden at the Site consists of lacustrine delta (ld) deposits of coarse to fine gravel and sand, stratified, generally well sorted, deposited at a former shore line, and variable with thicknesses of 3 to 15 meters (Caldwell, D.H., et al. 1978).

Based on Soil Survey map accessed through the United States Department of Agriculture (USDA) Soil Conservation Service web site, at www.websoilsurvey.nrcs.usda.gov, the Property is mapped with (2) different soil series as discussed below:

Chenango silt loam, loamy substratum, undulating (ChB) - This soil series accounts for approximately 85% of Site soils. This series is described as very deep, well-drained soil is formed in water sorted sand and gravel on outwash plains, kames eskers, and alluvial fans. Slopes range of 8 to 15 percent and are complex. Individual areas typically range from 5 to 50 acres and are oval or irregular in shape.

Oakville and Windsor soils, 25 to 30 percent slopes (OeE) – This soil series accounts for approximately 15% of the Site soils. This soil series is described very deep, well drained to excessively drained soils formed in water-sorted sand. The soils are on steep eroded sides of gullies in glacial outwash plains, lake plains, and beach ridges. Individual areas range mainly from 10 to 80 acres and are long, narrow, and irregularly shaped. This unit is about 40 percent Oakville soils, 40 percent Windsor soils, and 20 percent other soils. The Oakville and Windsor soils were mapped together because their use and management are the same. Some areas are mostly Oakville soils, some are mostly Windsor soils, and many contain both kinds of soils.

Based upon a review of the Geologic Map of New York dated March 1970 compiled and edited by D.W. Fisher, Y.W. Isachesn and L.V. Richard bedrock at the Site is mapped as Canajoharie Shale. This black shale is a member of the Trenton Group and is of Middle Ordovician age, forming approximately 465 million years ago. Previous RI work conducted at the Site did not encounter bedrock in any of the soil boring, monitoring well or excavation sites. The depth to bedrock is estimated at 10 – 40 feet below grade.

Structurally, the area contains a number of sub-parallel, generally north-south oriented faults. The Saratoga fault is a normal fault located approximately one mile east of Ballston Spa. Another significant normal fault, the McGregor fault is located to the northeast and controls the location of several carbonated mineral springs in the Saratoga region.

According to the United States Geologic Map (https://water.usgs.gov/GIS/regions.html), the Property is located in the Mid-Atlantic Hydrologic Unit in the Upper Hudson River Drainage Basin. According to the Environmental Protection Agency's Designated Sole Source Aquifers (SSA) mapping website accessed at (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b),the Property is not located in the area of a mapped sole source aquifer. Groundwater in the vicinity of the Property is not used for drinking water. The majority of properties in the study area are supplied drinking water from the municipal system of the Village of Ballston Spa which in turn obtains its municipal supply from the Great Flats Aquifer via the Town of Glenville. There are no public water supply wells located within 1,500 feet of the site. No potable or private domestic use wells are located down-gradient of the Site.

Additional research using NYSDEC available lists indicate there are groundwater wells as follows:

- Two groundwater wells at below ground surface (BGS) depths of 100 feet and 200 feet located 5,400 feet north west of the Site (up gradient);
- One groundwater well at BGS depth of 35 feet located 5,980 feet south of the Site (down gradient);
- One groundwater well at BGS depth of 645 feet located 4,000 feet south east of the Site (down gradient); and
- One groundwater well at BGS depth of 27 feet located 11,800 feet north of the Site (up gradient).

The current use of the groundwater wells remain undetermined at this time.

1.3 Summary of Remedial and Supplemental Remedial Investigation Findings

A remedial investigation (RI) and a supplemental remedial investigation (SRI) were performed to characterize the nature and extent of contamination at the Site. The results of the RI and SRI work are described in detail in the June 2014 RI prepared by Environmental Compliance, Inc. (ECI) and the August 2019 SRI prepared by Northeastern Engineering Technologies, PLLC (NET). Generally, the results of the RI and SRI work have identify forty-seven (47) surface and subsurface soil, cultural fill and sediment

samples, collected from areas across the Site, to contain select contaminates of concern at concentrations above established Restricted Residential Use SCOs. The primary contaminates of concern identified at concentrations above Restricted Residential Use SCOs in the Sites soils include select TAL metals and SVOCs as well as the PCB-1254, which was identified in two (2) cultural fill samples collected at the Site. Additionally, one (1) inside sediment sample, collected from a small wastewater sump/concrete basin, was also identified to contain selected TAL metals above the Restricted Residential Use SCOs.

Although the RI and SRI groundwater data confirm select TAL metals, SVOCs and VOCs to exist at concentrations above applicable NYSDEC 6NYCRR Part 703 groundwater quality standards, groundwater presently has no exposure point or route, as groundwater at and in the vicinity of the Site is not used as a drinking water source, nor is it anticipated to be used as a drinking water source in the future. The RI and SRI data demonstrate groundwater impacts identified at the Site represent a low risk to the use of the Site and the surrounding area.

2.0 SITE MANAGEMENT PLAN

2.1 INTRODUCTION

This SMP has been developed for the Site on behalf of JJB 125 Bath LLC and is intended to establish specific construction and engineering controls going forward for invasive earthwork activities that have the potential to encounter chemically impacted soil and groundwater related to BCP Site No. C546055.

2.1.1 GENERAL

This SMP describes specific procedures considered germane the Site to manage activities that have the potential to generate remaining contaminated soil and groundwater that exists beneath the Site. This SMP has been developed with the objective to protect human health and the environment.

2.1.2 PURPOSE

The purpose of this document is to provide the following;

- A description of SMPs;
- The basic operation and intended role of each implemented SMP
- A description of the key components of the SMP
- A description of the features that should be evaluated during each periodic inspection and compliance certification period
- A description of plans and procedures to be followed for implementation of the SMP, such as the implementation of an Excavation Plan of the safe handling of any impacts that may be encountered during routine maintenance of existing or new improvements located at the Site
- Any other provisions necessary to identify or establish methods for implementing the SMP required by the NYSDEC, NYSDOH or other end users.
- A description of the reporting requirements for these controls

2.2 EXCAVATION PLAN

Based on conditions documented at the Site, earth work activities that have the potential to generate soil or groundwater will be subject to the SMP. The work covered under the Excavation Plan (EP) includes routine scheduled maintenance, renovations and new construction activities that are designed to penetrate the existing improved asphalt, concrete and gravel surfaces, areas covered by beneficial hard fill materials (i.e., brick and concrete) generated as a result of the demolition IRM completed in 2017 or those that exist as landscaped and / or green space*.

The focus of the EP will be to control the manner in which soil and water are handled at the Site and the means by which dust is controlled during on-site construction and / or maintenance activities. Construction work at the Site will be conducted in accordance with the procedures defined in a site specific Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) to be prepared for the site (see Sample HASP included in **Appendix B**). Based on future changes to State and federal health and safety requirements, and specific methods employed by contractors working on the Site, the HASP and CAMP will be updated and re-submitted with the notification provided in **Section 2.4.1** below. Any intrusive construction work will be performed in compliance with the EP, HASP and CAMP, and will be reported according to the Site Management Reporting Plan (See **Section 2.4**).

The owner and all associated parties responsible for submittals to the owner and / or its assigns, and parties performing this work, are completely responsible for the safe performance of all invasive earth work, the integrity of excavation zones, and for structures that may be affected by excavations (such as building foundations and footings).

**Note: Excludes steeply sloping forested portions of the western property line.*

Mechanical processing of cultural fill and / or impacted soil on-site are prohibited unless otherwise approved by the NYSDEC. Any waste or similar sources of contamination identified during work at the Site will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported according to the Site Management Reporting Plan (See Section 2.4). As build engineering drawings of the Site are currently not available. When the as build engineering drawings of the Site are identified they shall be made available to those participating in SMP activities.

2.2.1 NOTIFICATION

The NYSDEC will be notified within 2 hours if undocumented chemical impacts or undocumented buried wastes are identified at the Site. The owner or their representatives will make this notification to the NYSDEC. Currently this notification will be made to the following;

- NYSDEC Spill Hotline at 1-800-457-7362

2.2.2 SOIL SCREENING

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all earthwork activities that have the potential to generate cut soil, surface water, groundwater or dust. Soil screening will be performed regardless of when the invasive work is done and will included all excavation and invasive work performed during routine maintenance, renovation, demolition and construction activities (i.e., excavations for foundations, buried utility work, grading activities, etc.) conducted at the Site.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

2.2.3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points. Stockpiles will be kept on appropriate poly synthetic liners and covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected daily during on-site activities and at a minimum once each week and after every storm event following active work. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection.

2.2.4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are solely responsible for safe execution of all work performed under this SMP. The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

A truck wash will be operated on-site on an as needed basis. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements). Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transported from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed, as needed, to maintain a clean condition with respect to site-derived materials.

2.2.5 MATERIALS TRANSPORT OFF-SITE

All transport of materials generated at the Site will be performed by a licensed hauler in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364, unless chemical data is produced which identifies the materials as unaffected by chemical impacts. Hauler will be appropriately licensed and trucks properly placarded.

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

All trucks will be washed (as necessary) prior to leaving the Site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes will be identified that will: (a) limit transport through residential areas and past sensitive sites; (b) use city-mapped truck routes; (c) minimize off-site queuing of trucks entering the facility; (d) limit total distance to major highways; and (e) promote safety in access to highways.

Trucks will be prohibited from stopping and idling in the neighborhood outside the Site. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during site work.

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

2.2.6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), proper chemical testing will be conducted according to approved NYSDEC DER-10 criteria or Spill Technology and Remediation Series (STARS) Memo #1.

2.2.7 MATERIALS REUSE ON-SITE

Soil reused on Site will be permitted provided no nuisance characteristics (i.e., visual and olfactory) exist that suggest the material contain chemical impacts. Use of on-site soils which exhibit impacts will be possible provided the materials are analyzed for the chemicals of concern via EPA Methods 8260 (VOCs), 8270B/N (SVOC), the Target Analyte List of Metals, and EPA Method 8082 (PCBs) testing criteria unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling. Soils containing chemical impacts below the restricted residential use criteria as defined in Part 375-6.8 Soil Cleanup Objective's (SCOs) will be permitted to be reused on site. Soil containing chemical impacts, above the restricted residential use criteria as defined in Part 375-6.8 SCO's will be disposed of in according with section 2.2.6 Materials Disposal Off-Site unless otherwise approved by the NYSDEC.

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. On-site impacted material, including historic fill and soil, that are determined acceptable for reuse on-site will be reused in any manner that is appropriate to the construction activities.

2.2.8 FLUIDS MANAGEMENT

All liquids to be removed from the Site during earthwork activities water will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering fluids will not be discharged back to the land surface, to surface waters or subsurface of the Site without advanced chemical testing to determine if the fluids are impacted by the COCs. Fluids found to be impacted by the COCs will be treated on-site or disposed of off-site.

Discharge of water generated during large-scale construction activities to the site's storm water sewer will be performed under a State Pollutant Discharge and Elimination System (SPDES) permit. Any SPDES permits necessary for the Site will consider the potential presence of the COC and will incorporate the goals of the SMP.

2.2.9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP, applicable regulations (unrestricted reused criteria as defined in Part 375-6.8 Soil Cleanup Objective's) and DER-10 Technical Guidance for Site Investigation and Remediation prior to receipt at the Site.

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

All imported soils will meet the unrestricted reuse criteria as defined in Part 375-6.8 Soil Cleanup Objective's. Soils that do not meet the unrestricted use soil quality objectives will not be imported onto the Site without prior approval of the NYSDEC. Solid waste will not be imported onto the Site.

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

2.2.10 STORM WATER POLLUTION PREVENTION

A Storm Water Pollution Prevention Plan (SWPPP) will be used for all construction work pursuant to the requirements of NYSDEC Division of Water guidelines. Any SWPPP necessary for the Site will consider the potential presence of the COC and will incorporate the goals of the SMP. A general summary of a SWPPP is as follows:

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

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

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

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

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

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

2.2.11 CONTINGENCY PLAN

If other unidentified contaminant sources are found during invasive earth work or related development activities, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes [TAL metals; Target Compound List (TCL) volatiles and semi-volatiles, TCL pesticides and PCBs], unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to the NYSDEC. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline.

2.2.12 COMMUNITY AIR MONITORING PLAN (CAMP)

The CAMP will be instituted prior to all invasive earth work activities that have the potential to generate dust at the Site. All invasive earth work at the Site will be subject to the CAMP. The CAMP services will be conducted in accordance to the NYSDOH guidance document entitled Generic Community Air Monitoring Plan. The CAMP will include a combination of continuous ambient air monitoring and periodic visual inspection for particulate matter and volatile organic compounds (VOC) at the perimeter of each designated work zone and / or the perimeter of the Site. Ambient VOC air quality and particulate matter (i.e., dust) will be documented up wind and downwind of the Site using a properly calibrated photoionization detector (PID) and a real-time dust monitor (e.g., Casella MicroDust Pro or similar). Visual and olfactory conditions at the perimeter of the Site will also be recorded during the CAMP testing services. The visual and olfactory inspection services will be performed to document dust particulate accumulation on-site and on adjacent properties and olfactory nuisances' conditions, if any. Each day, prior to any invasive ground activities, a base line survey will be performed at each of the surrounding properties to establish site specific background reading / conditions. Readings obtained during the field activities will be compared each day to the baseline reading. Construction activities will be modified, as necessary, pursuant to the CAMP, to conform to background conditions and inhibit the propagation of particulate matter and / or VOCs. It is not anticipated that the CAMP monitoring will significantly intrude upon site construction activities. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH.

2.2.13 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor control methods to be used on a routine basis will include limits on the excavation area, direct load out of trucks, and use of chemical odorants or foam. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner and / or the designated qualified environmental professional and any measures that are implemented will be documented for future reporting consideration (i.e., Periodic Review Reports).

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

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

2.2.14 DUST CONTROL PLAN

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

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with water cannons capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, non-vegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

2.3 NOTIFICATIONS

Notifications will be submitted by the property owner or its assigned agents to the NYSDEC as needed for the following reasons:

- Notice within 24-hours of any chemical impacts documented at the Site during invasive earth work activates.

Notifications will be made to the NYSDEC Spill Hotline (1-800-457-7362). In the event that NYSDEC develops a centralized notification system, that system will be used instead.

2.4 REPORTING PLAN

2.4.1 SUMMARY REPORT

In the event that chemical impacts are identified at the Site, a Summary Report will be submitted to the NYSDEC within 30 days. The report will include:

- All applicable inspection forms and other records generated for the Site during the reporting period;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data sufficient for the Department to evaluate contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.

3.0 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

3.1 EMERGENCY TELEPHONE NUMBERS

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner' representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the owner and any authorized agents. The emergency contact lists will be maintained in an easily accessible location in the building.

TABLE 1: EMERGENCY CONTACT NUMBERS

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility mark out)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline:	(800) 457-7362

TABLE 2: OTHER CONTACT NUMBERS

Northeastern Environmental Tech Corp.	(518) 884-8545

* Note: Emergency contact numbers are subject to change and will be updated whenever a change in personnel occurs.

3.2 MAP AND DIRECTIONS TO EMERGENCY HEALTH FACILITY

Site Location: 125 Bath Street, Ballston Spa, Saratoga County, New York

Nearest Hospital Name: Malta Med Emergent Care

Hospital Location: 6 Medical Park Drive, Malta, Saratoga County, New York

Hospital Telephone: (518) 289-2024

Directions to the Hospital from 125 Bath Street, Ballston Spa, Saratoga County, New York

1. Head south on Bath St. towards Hamilton St.

2. Turn left on West High St.

3. Turn Right onto NY-50/NY-67 E/Church Street

4. Slight left onto NY-67 E

5. At the traffic circle take 3rd exit onto Medical Park Dr.

Total Distance: 4.7 Miles

Total Estimated Time: 10 minutes (traffic pending)

3.3 RESPONSE PROCEDURES

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 1). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

APPENDIX A

MAPS

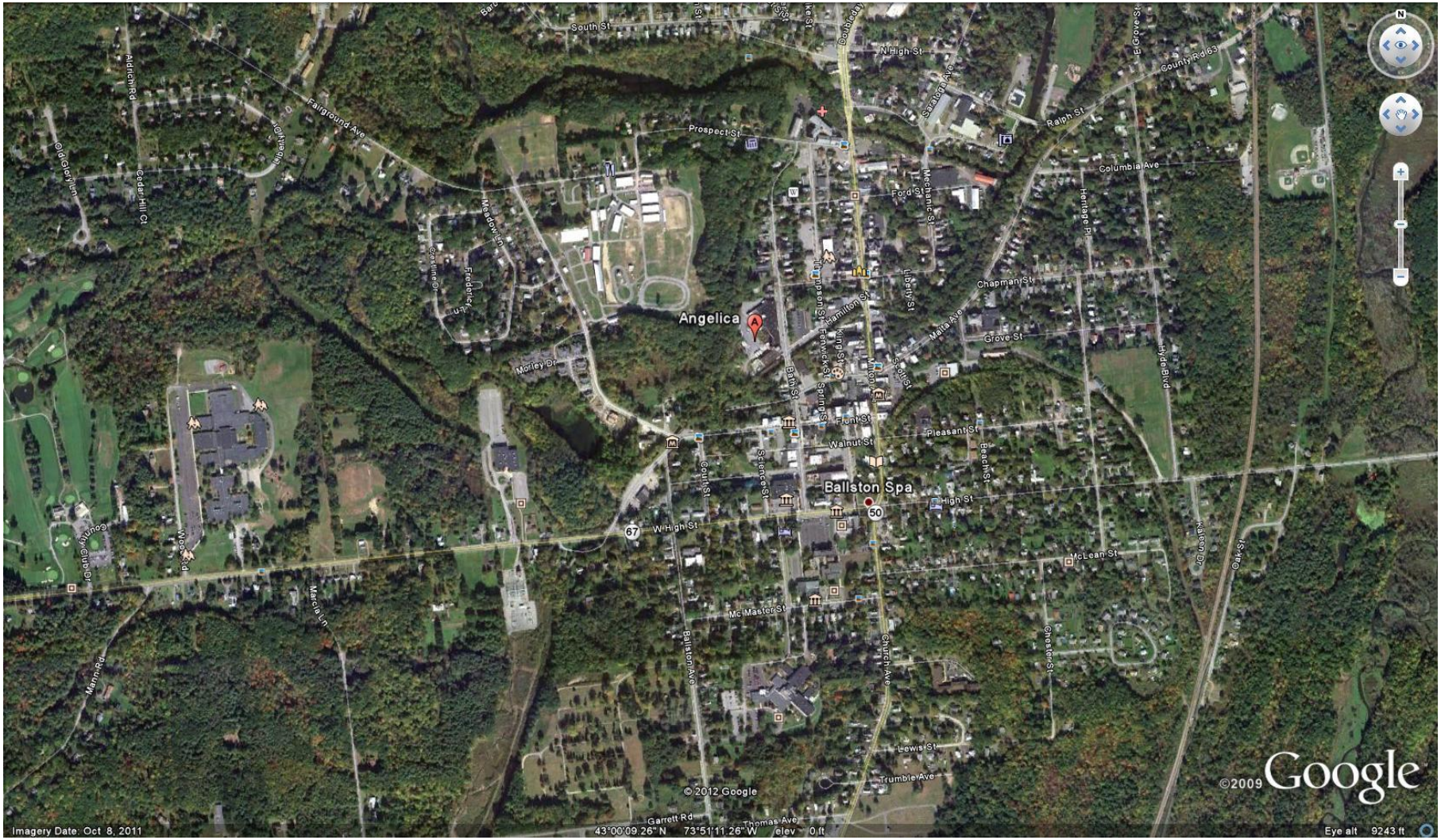


Figure 1

Site Vicinity Map
Angelica Textile Services, Inc.
125 Bath Street
Ballston Spa, New York 12020

EXHIBIT B

SAMPLE HEALTH AND SAFETY PLAN

(HASP)

HEALTH & SAFETY PLAN

PROJECT INFORMATION

A. Project Site: Former Haight/American Hide Tannery Brownfield Cleanup Agreement
BCA Site No. C546055-10-12

B. Project Activities:

- Excavation & Earthwork Activities
- Excavation Dewatering Services
- Site Inspection, Sampling & Mapping Services
- Tree Clearing & Property Maintenance
- Trucking & Waste Disposal Services

C. Location: 125 Bath Street Ballston Spa, Saratoga County, New York

D. Name and Address of Owner/Lead Contacts:

JJB 125 Bath LLC
125 Bath St.
Ballston Spa, NY 12020

E. Emergency Contacts & Project Phone Numbers:

1.	NYS Department of Environmental Conservation – R5	(518) 897-1200
2.	JJB 125 Bath LLC	(518) 281-3745
3.	Saratoga Hospital (Malta Facility)	(518) 289-2024
4.	State Police Department	(911)
5.	Underground Facilities Protection Organization (UFPO)	(800) 962-7962
6.	Village of Ballston Spa Offices	(518) 885-5711

F. History and Nature of Site

Historic records document industrial development of the Site beginning in ± 1881. Tannery operations of the *Haight and Company, American Hide & Leather*, and *Howes Leather* which were the focus of an ECI IRM, reportedly occurred during the period from 1887 to 1960. The most recent operator of the Site was Angelica, which acquired the Site and the business entity, Linen Systems for Hospitals, Inc. ("Linen Systems") in 1977 and officially changed Linen Systems name to Angelica on or about 1984. Linen Systems acquired title to the Site in 1977 (Ref. Exhibit B of the BCP application, including the deed). Linen Systems and later Angelica performed laundering of garments with detergents on the Site and warehoused linens from approximately 1977 through 2011 without the use of dry cleaning chemicals. Angelica has ceased operations on Site.

Environmental contamination associated with the Angelica Site was first discovered in July 2010 following an extended rain fall event, in the vicinity of a former 100,000 gallon No. 6 oil above ground storage tank (AST) that historically operated northeast of the 2017 demolition IRM work zone. Upon discovery, the NYSDEC assigned Spill No. 1004405 to the release (Ref. Exhibit K of the BCA application). Remedial investigation (RI) work conducted at the Site by Environmental Compliance, Inc. (ECI) sufficiently demonstrated that the nature and extent of the contaminants warranted the inclusion of the Site into the NYSDEC Brownfields Cleanup Program (BCP). The Site was accepted in the BCP on January 31, 2013.

Demolition interim remedial measure (IRM) work at the Site in 2017 was completed specifically to facilitate supplemental remedial investigation (SRI) work below (6) condemned manufacturing structures, a large smoke stack and foundational ruins located west of the ±80,000 square foot commercial manufacturing structure and historically

operated as the Former Haight/American Hide Tannery manufacturing facility. The demolitions IRM work included the closure of abandoned fuel storage systems, undocumented vessels found to exist in one of the former manufacturing structures as well as the demolition of a pump house and storage buildings outside the SRI area of concern located along the Gordon Creek. The ± 80,000 square foot commercial manufacturing structure (most recently operated by Angelica) located along the eastern road frontage of the Site was excluded from the demolition IRM work. The demolition IRM work zone comprised a footprint of ± 2.5 acres. (Ref, Interim Remedial Measure Construction Completion Report Demolition of Site Buildings dated April 2018).

The HASP describes protection standards, practices and procedures pertaining to the SRI work to be performed at the Site. The HASP is written with the intent of developing the awareness of site personnel to the health and safety hazards, which may exist, thereby avoiding unnecessary risks. The HASP establishes safety practices, procedures and personal protection standards and applies to all on Site activities. All personnel who perform project activities associated with the SRI work will familiarize themselves with this HASP and comply with its requirements

Note:

1. All information contained herein shall be reviewed by on site personnel prior to entering the work zone.

2. This HASP applies to all personnel. Outside agent/contractors are also responsible for their own internal Health and Safety Plan(s) prior to entering the site.

G. Project Objectives:

The Site is an active NYSDEC Brownfield Cleanup Agreement (BCA) site (i.e., BCA No. C546055-10-12). Information developed at the Site thus far suggests that the chemical impacts associated with prior commercial/industrial use of the Site include volatile organic compounds (VOC), semi-VOC and heavy metals. NETC has developed this HASP to manage impacts encountered at the site (if any) with the goal of protecting human health and the environment.

H. Site/Waste Characteristics

Waste Types: Liquid__X__Solid__X___Sludge_____Gas__X__
Characteristics: Corrosive_____Ignitable_____Radioactive ____Volatile __X__
Toxic ____ Reactive ____Unknown ___X__

I. Field Work Description:

Field activities include routine maintenance of the Site and existing cap and cover conditions as well as future constructions related to the redevelopment of the property.

J. Project Work Tasks:

- Excavation & Earthwork Activities
- Excavation Dewatering Services
- Site Inspection, Sampling & Mapping Services
- Tree Clearing & Property Maintenance
- Trucking & Waste Disposal Serviceso Site Inspection Services

Project Team Members:

NET Project Engineer:	Keith Rupert PE
Project Coordinator & Safety Officer (PCSO):	Jeff Wink PG
Qualified Environmental Professionals:	Jeff Wink PG, Robert Gray PG
Field Technician	Matthew Wink,

K. Hazard Evaluation

The suspected hazards which may exist at the Site during site activities can be grouped into three categories; chemical; heat stress; and physical hazards associated with the operation of machinery

Chemical Hazards

NETC understands chemical compounds previously identified at the site can be categorized as petroleum based hydrocarbons and heavy metals & that all previous work has been performed in level "D" protection. On this basis, continuous respiratory protection is not indicated for most field activities. However, the necessity of respiratory protection will be based on continuous gas monitoring to be performed during all invasive earthwork activities.

Heat Stress / Cold Stress

Field activities conducted during the summer and winter months have the potential to cause heat / cold related stresses. Heat / Cold stress prevention and symptoms are further discussed in Section T.

Physical Hazards

Physical hazards exist during the operation of pilot test generator, air compressor and blower equipment. These types of accidents may involve a wide range of bodily injuries and will be managed using conventional first responder first aid pursuant to EMS protocol as outlined in Sections S.

L. Personnel & Responsibilities

Listed below are key personnel involved with the project. Their responsibilities are also included:

1. PROJECT COORDINATOR / SITE SAFETY OFFICER

The project coordinator / site safety (PCSO) officer will direct the site investigation. After the project starts and the PCSO has had time to evaluate the potential for hazardous site conditions, he or she may determine that a member of the project team may assume site safety officer duties. The primary responsibilities of the PCSO are:

- Assuring that all personnel are aware of the potential hazards of the site as well as the proper and improper procedures for handling those hazards, should they occur, including all health and safety provisions and standards in this HASP.

- Assuring that the proper personnel protection equipment is available and utilized properly by all site personnel.

- Assure that site personnel observe the appropriate work practices procedures.

- Monitoring the performance of personnel to ensure that mandatory health and safety procedures are adequate and correcting any performances that do not comply with the HASP.

- Preparation and submittal of any and all project reports including progress, accident incident and contractual.

2. SITE PERSONNEL

Site personnel will be those individuals involved in field operations. Their primary responsibilities will be:

- Perform all required work safely.

- Familiarize them with and understand the HASP, including proper use of personal protection equipment.

- Report any unsafe conditions to supervisory personnel.

- Be aware of signs and symptoms of potential exposure to site contaminants and weather stress. Based on the limited scope to the SI on site personnel will be responsible for multi tasks as designated by the PCSO.

M. Emergency Services

Emergency services (fire, police, ambulance, and local hospitals) will be notified as applicable to activities at the site. Emergency telephone numbers will be conspicuously posted next to the field telephone. All field personnel will be made aware of the location of the site telephone and the directions to the closest emergency facility.

All field personnel will be trained in the recognition of heat stress (heat cramps, heat exhaustion, heat stroke) related to working in warm weather conditions. No person will work alone in the field; the buddy system will be strictly enforced and each will visually monitor his buddy as often as possible. Heat stress is discussed in more detail in Section T.

Water and first aid supplies will be strategically located on site for immediate access by on-site personnel. In the event of skin or eye contact with hazardous materials, the affected personnel will be immediately rinsed and brought to a physician. Subsequent to any emergency incident, a report describing the incident and those persons involved will be written and submitted to the PSOC.

N. Health & Safety Training

All field personnel will have received a "Health and Safety Training Course" for hazardous waste operations mandated by OSHA (29 CFR 1910.120). Appropriate personnel will receive the additional 8-hour supervisor's training.

Prior to starting work, the PCSO will conduct a training session to assure that all field personnel understand their safety responsibilities. All personnel will be instructed on potential health and safety hazards.

Specifically, the following topics will be covered in the initial training session:

- Potential routes of contact with contaminants.

- Types, proper use, limitations and maintenance of applicable protective clothing and equipment.

- respiratory protection using air-purifying respirators equipped with organic vapor and acid gas cartridges. This will include use, maintenance, storage, and limitations of use.

- Proper decontamination procedures and adherence to work zone boundaries.

- Proper waste/cuttings handling and disposal procedures.

- Reporting of accidents and availability of medical assistance.

- Recognition of symptoms and signs which indicate overexposure to contaminants or other hazards.

Each morning prior to the commencement of the day's work, on-site personnel will review the scheduled work for the day and health and safety procedures to be utilized with all team members. Additional training sessions will be conducted whenever any changes in health and safety hazards or procedures warrant it.

O. Standard Operating Safety Procedures

Standard operating safety procedures include precautions and operating practices that all responding personnel should follow. These include:

1. PERSONAL PRECAUTIONS

- No contact lenses may be worn on-site.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any area designated contaminated.

- Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.

- No facial hair which interferes with a satisfactory fit of the mask-to-face-seal is allowed on personnel required to wear respirators.

- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, leachate, discolored surfaces, kneel on ground, lean, sit or place equipment on drums, containers, or the ground.

- Medicine and alcohol can increase the effects from exposure to toxic chemicals. Unless specifically approved by a qualified physician, prescribed drugs should not be taken by personnel where the potential for absorption, inhalation or ingestion of toxic substances exists. Alcoholic beverages should be avoided during off-duty hours, if possible.

2. OPERATIONS

- All personnel entering the site must be thoroughly briefed on anticipated hazards, equipment to be worn, safety practice to be followed, emergency procedures, and communications.

- Any required respiratory protection and chemical protective clothing must be worn by all personnel entering areas designated for wearing protective equipment.

- Personnel on-site must use the buddy system at all times.

- Visual contact must be maintained between field and safety personnel.

- During continual operations, on-site workers act as safety backup to each other. Off-site personnel provide emergency assistance.

- Personnel should practice unfamiliar operations prior to performing the actual procedure.

- Entrance and exit locations shall be designated and emergency escape routes delineated by the PCSO.

- Communications using radios, hand signals, signs, or other means must be maintained between personnel at all times. Emergency communications will be prearranged by the PCSO in case of radio failure, necessity for evacuation of site, or other reasons.

- Personnel and equipment in the contaminated area should be minimized, consistent with effective site operations.

- All field personnel should make full use of their senses to alert themselves to potentially dangerous situations which they should avoid, e.g., presence of strong and irritating or nauseating odors.

- Field personnel should be familiar with the physical characteristics of the site, including:
  + wind direction in relation to contamination zones;
  + accessibility to associates, equipment, and vehicles;
  + communications;
  + operation zones;
  + site access; and
  + nearest safety shower and eyewash station.

- Procedures for leaving a contaminated area must be planned and implemented in accordance with the HASP prior to going on site.

- All visitors to the job site must comply with the HASP procedures. Personal protective equipment may be modified for visitors depending on the situation. Any modifications must be approved by the site PCSO.

P. Personal Protection Program

1. PROTECTIVE EQUIPMENT

Protective clothing and respiratory protection will help prevent on-site workers from coming in contact with contaminants. The selection of protective equipment will be based upon the types, concentrations, and routes of exposure that may be encountered. The appropriate level of protection for initial site entry will be based upon a conservative assessment of the best available site contamination information.

Based upon known facts relative to the site, Level D protective equipment is indicated during on-site work. During these activities, the minimum required personal protective equipment for personnel within the work zone (Hot Zone) will consist of the following:

Hard-hat
Safety glasses (when full-face respirator is not indicated)
Steel-toe work boots
Tyvek suit (optional) or equivalent coverall clothing
Gloves
Safety glasses
Hearing protection
Use of the full face APR (equipped with organic vapor and acid gas cartridges) will be required when 5 PPM vapor is recorded on the Photoionization detector (PID) or a published TLV is documented within the ambient air of the work zone, after which use of the respirator will be mandatory.

2. FIELD MONITORING

During all drilling operations, monitoring of breathing space in proximity to the drilling equipment will be conducted with a PID calibrated to read 1:1 for Benzene. The results of PID monitoring will be used to advise personnel regarding existing conditions and to determine policy relative to the use of protective equipment. Monitoring will also be conducted during all drilling operations to detect any release of volatile organic compounds (VOC). This monitoring will be used to protect personnel from unsafe and/or unhealthful conditions. During other on-site activities not involving heavy equipment, sampling or the potential exposure to hazardous materials, Level D equipment is optional at the discretion of the site PCSO. Additional personal monitoring may be instituted based on the results of the initial field services.

Q. Site Control - Work Zones

1. CONTROL AT THE SITE

The site will be controlled to reduce the possibility of: (1) contact with any contaminants present and (2) removal of contaminants by personnel or equipment leaving the site. The possibility of exposure or translocation of substances will be reduced or eliminated by:

- Setting up security and physical barriers to exclude unauthorized personnel from the general area.
- Minimizing the number of personnel and equipment on-site consistent with effective operations.
- Establishing work zones within the site.
- Establishing control points to regulate access to work zones.
- Conducting operations in a manner to reduce the exposure of personnel and equipment and to eliminate the potential for airborne dispersion.
- Implementing appropriate decontamination procedures.

Three contiguous work zones are recommended:

Zone I:	Exclusion Zone
Zone II:	Contamination Reduction Zone
Zone III:	Support Zone

Zone I: Exclusion Zone

The Exclusion Zone, the innermost of three areas, is the zone where contamination could occur. This zone will generally correspond to the immediate work zone surrounding the pilot test equipment. All people entering the Exclusion Zone must wear prescribed levels of protection. An entry and exit checkpoint will be established at the periphery of the Exclusion Zone to regulate the flow of personnel and equipment into and out of the zone. This will assist in verifying the procedures established to enter and exit are followed.

The outer boundary of Zone I, the Hotline, has been established to be a 25 foot radius from the test wells. The Hotline will be defined by marker cones or similar barriers. During subsequent site operations, the boundary may be modified or adjusted as more information becomes available.

All personnel within the Exclusion Zone must wear the required level of protection. Personnel protective equipment is designed based on site-specific conditions including the type of work to be performed and the hazards that might be encountered. Different levels of protection may be justified within the Exclusion one as determined by the site PCSO after reviewing the specific operations.

Zone II: Contamination Reduction Zone

Between the Exclusion Zone and the Support Zone is the Contamination Reduction Zone which provides a transition between contaminated and clean zones. Based on the nature of this field services this will be a flexible zone, but will generally correspond with the sites property line. At this time, the Contamination Reduction Zone is considered to be that area outside the network of monitoring wells. In the event gross contamination is encountered a designated site-specific contamination zone and associated reduction corridors will be established by the designated PCOS.

Unless otherwise specified by the PCSO, during pilot test personnel entering Contamination Reduction Zone will be required to wear the prescribed personnel protective equipment, as required.

Zone III: Support Zone

The Support Zone, the outermost part of the site, is a non-contaminated or clean area. Support equipment is located in the zone; traffic is restricted to authorized site personnel. Since normal work clothes are appropriate within this zone, potentially contaminated personnel clothing, equipment, and samples are not permitted, but are left in the Contamination Reduction Zone until they are decontaminated.

R. Decontamination Procedures

Contaminated equipment and materials leaving the site must be decontaminated or isolated appropriately. All materials will be assumed contaminated if they have been used within the Exclusion Zone. Procedures for decontamination will vary based on the level of work. Decontamination procedures may require water, soap and brushes, and a collection system for the contaminated wash water. Requirements for decontamination will be to permit safe travel of equipment leaving the property.

NETC understands water will be made available to its staff for rinsing off contaminated material. Tyvek outer clothing (if used) will be discarded. The decontamination area will be set up to decontaminate clothing and equipment of team members leaving the Exclusion Zone on an as needed basis. Decontamination will consist of a thorough soap and water wash. Personal decontamination will become necessary only after personnel encountering gross contamination.

S. Emergency Information

1. EMERGENCY SITUATION

All on site activities present a potential risk to on-site personnel. During routine operations, risk is minimized by establishing good work practices, staying alert, and using proper personal protective equipment. Unpredictable events such as physical injury, chemical exposure, or fire may occur and must be anticipated.

Emergency conditions are considered to exist if:

- Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on site; or
- A condition is discovered that suggests the existence of a situation more hazardous than anticipated.

2. EMERGENCY PROCEDURES

a) General: The following emergency procedures should be followed: In the event of emergency, the appropriate contacts identified in the emergency phone numbers list at the front of this HASP shall be notified. This list should be posted conspicuously at the site.

- Personnel on site should use the "buddy" system (teams).
- Buddies should prearrange hand signals or other means of emergency signals for communications in case of being out of hearing range.
- Visual contact should be maintained between "teams" in order to assist each other in case of emergencies.
- In the event that any member of the field crew experiences any adverse effects or symptoms of exposure while on site, the entire crew should immediately halt work and act according to the instructions provided by the PCSO.
- The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated should result in the evacuation of personnel and reevaluation of the hazard and the level of protection required.
- In the event an accident occurs, the PCSO will complete an Accident Report Form (see Attachment A). Follow-up action shall be taken to correct any situation that caused the accident.

b) Personal Injury: In case of personal injury at the site, the following procedures will be implemented:

- On-site personnel administer treatment to an injured worker.
- The victim will be transported to the nearest hospital or medical center. If necessary, an ambulance will be called to transport the victim.

c) Chemical Exposure: If a member of the field crew is exposed to hazardous chemicals, theprocedures outlined below will be followed:

- Another crewmember (buddy) will remove the individual from the immediate area of contamination.
- Precautions will be taken to avoid exposure of other individuals to the chemicals.

- If the chemical is on the individual's clothing, first rinse the clothing if possible, and then the clothing should be removed if it is safe to do so.

- If the chemical has contacted the skin, the skin will be washed with copious amounts of water.

- In case of eye contact, an emergency eyewash will be used.

- If necessary, the victim will be transported to the nearest hospital or medical center. The nature of the injury may require that an ambulance should be called to transport the victim.

- All chemical exposure incidents must be reported in writing by the PCSO on an Accident Report Form.

d) Escape Routes: Flags will be positioned at various other locations to indicate wind direction. In the event of a sudden release of fire, all personnel will move away from the immediate area in an upwind direction and then to the site exit point. Personnel downwind of the incident will first move to the perimeter of the site and then upwind to a safe distance.

e) Signal for Evacuation: In the event of a sudden release or fire requiring immediate evacuation of personnel, the signal for evacuation will be three quick horn signals from the NETC carrier vehicle or equivalent signal source. The horns will be kept in a conspicuously visible location for quick access by all on site personnel.

f) Other Signals: NETC equipment will be equipped with a fire extinguisher. It will also be the operator's responsibility to practice fire prevention measures such as periodically cleaning the equipment to keep it free of accumulated oil/grease or other combustible materials. In the event of an equipment fire or any other fire which cannot be controlled with available fire extinguishers, the local fire department will be summoned.

T. Thermal Exposure Monitoring

1. GENERAL: Adverse weather conditions are important considerations in planning and conducting site operations.

a) HEAT STRESS

Heat stress can result when the protective clothing decreases natural body ventilation. This can occur even when temperatures are moderate. Various levels of personal protection require low permeability disposable suits, gloves and boots, which prevent most natural body ventilation. Discomfort due to increased sweating and body temperature (heat stress) will therefore be expected at the work site. Some signs and symptoms of heat stress are:

Heat Rash - Continuous exposure to heat or humid air

Heat Cramps - Inadequate electrolyte replacement
- muscle spasm
- pain in the hands and feet

Heat Exhaustion - Inadequate blood circulation
- pale, cool, moist skin
- heavy sweating
- dizziness
- nausea
- fainting

Heat Stroke - Temperature regulation fails and the body temperature rises to critical levels
- red, hot, usually dry skin
- lack of or reduced perspiration
- nausea
- dizziness and confusion
- strong, rapid pulse
- coma

b) Monitoring

Heart Rate - Radial pulse will be recorded during a 30-second period as early as possible in the rest period.

If the heart rate is >110 beats/minute at the beginning of the rest period, the next work cycle will be shortened by one-third and the rest period will remain the same.

If the heart rate is still >110 beats/minute at the next period, the following work cycle will be shortened by one-third.

Strip thermometers will be used if deemed necessary to record an individual's temperature at time intervals as follows:

Ambient Air Temperature	Interval
>70oF	every 3 hours
>80oF	every 2 hour
>90oF	every 1/2 hour

If normal temperature exceeds 99.6oF (37.6oC), the next work cycle will be shortened by one-third.

If oral temperature still exceeds 99.6oF (37.6oC) at the beginning of the next rest period, the following work cycle will be shortened by one-third.

No worker will be permitted to wear a semi-permeable garment when his/her oral temperature exceeds 100oF (38.1oC).

Recommendations to reduce heat stress:

Drink plenty of fluids (to replace loss through sweating)

Make adequate shelter available for taking rest breaks to cool off.

For extremely warm weather, follow these additional recommendations:

Wear cooling devices to aid in ventilation (the additional weight may affect efficiency.

Install portable showers or hose down facilities to cool clothing and body.

Shift working hours to early morning and early evening avoiding the hottest time of the day.

Rotate crews wearing the protective clothing.

c) COLD EXPOSURE

Prolonged exposure to cold will occur without proper protection, and the effects of cold exposure can be felt in temperatures above freezing as well as below freezing. Exposure to cold can cause severe injury (frostbite) or an overall drop in body temperature. Fingers, toes, and ears are most susceptible to frostbite. Both the outdoor temperatures and wind velocity play a part in cold weather injuries. Wind chill is used to describe the chilling effect of moving air in combination with low temperatures. Cold exposure is a serious threat to the site personnel that remove protective clothing and expose perspiration soaked underclothing to the cool air. Water conducts heat 240 times faster than air, thus rapidly cooling the body and wet clothing.

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperatures - its symptoms are usually seen in 5 stages:

- shivering
- apathy, listlessness, sleepiness and rapid body cooling
- unconsciousness, glassy stare slow pulse and respiratory rates
- freezing of the extremities (most sensitive to freezing first are the fingers, toes and ears)
- death

U. Record Keeping

1. PERSONNEL EXPOSURE

A site daily log with a required sign-in, sign-out procedure will document the time spent by each team member on the site. This information will be supplemented by AECOM provided air monitoring in the work zone.

2. PROTECTIVE EQUIPMENT

A checklist will track all protective equipment brought into the field each day. This will ensure that decontamination is performed in the field that any additional preparation, such as sanitizing face masks (if deemed necessary), is performed in the decontamination area prior to reuse. Any equipment malfunction must be noted on the checklist and repaired before reuse. Other routine maintenance checks will be scheduled and recorded on a regular basis to ensure that protective equipment is effective at all times.

3. INCIDENT REPORTS

Any chemical release to air, water, or soil must be reported to the PCSO. Any exposure to personnel resulting from such a release or from protective equipment failures must be reported immediately to the PCSO and / or other designated personnel as well as in writing within 24 hours.

4. MONITORING EQUIPMENT

Unless otherwise directed NETC is not responsible air monitoring at the property.

V. Sample Handling , Transportation & Shipment

1. HANDLING

Unless otherwise directed NETC is not responsible for sample collection. Any samples collected by NETC will be properly labeled and placed in clean containers before being removed from the site. To minimize the hazards to laboratory personnel associated with sample handling, sample volumes sent to the lab will be no larger than necessary and all sample containers will be sealed prior to shipment.

2. TRANSPORT

All samples collected at the site will be taken to a pre designated sample bank to be established / designated by the PCSO for preparation for shipment to appropriate laboratories. No samples, specimens, or other materials will be removed from the site other than those, which will be transmitted to the sample bank, or to designated disposal areas. All samples will be properly packaged following the sampling protocols to preserve the integrity of the sample and to prevent the inadvertent escape of contaminants. In addition, all samples will be placed in a suitable container before transport to prevent leakage.

3. SHIPPING

Shipping containers and labeling procedures will follow established protocols. Samples will be packed in ice chests filled with packing material and "Blue Ice". Department of Transportation regulations for sealing and marking the ice chests will be followed. At this time it is anticipated that all samples will be shipped by NETC to its laboratory subcontractor designated for this work.

ATTACHMENT A

TAILGATE SAFETY MEETING FORMS

TAILGATE SAFETY MEETING

Date: _____ Time: _____ Job Number: _____

Client: _____

Job Location: _____

Type of Work: _____

Chemical Used: _____

SAFETY TOPICS PRESENTED

Protective Clothing / Equipment: _____

Chemical Hazards: _____

Physical Hazards: _____

Emergency Procedures: _____

Hospital / Clinic: _____ Phone Number: _____

Hospital Address: _____

Special Equipment: _____

Other: _____

ATTENDEES

NAME PRINTED	SIGNATURE

Meeting conducted by:

NAME PRINTED	SIGNATURE

INJURY REPORT FORMS

Employee's Report of Injury

(To be completed by the employee only.)

Employee's name: _____ Male__ Female__
Last First Middle

Date of birth: ____/____/____ Home telephone # (_____) _____

Home address: _____

City: _____ State: _____ Zip Code: _____

Present classification: _____ How long employed here: _____

Social Security No.: _____-_____-_____ Weekly salary: _____

Location of accident:_____
Address Area (loading dock, bathroom, etc.)

Date of accident: _____ Time of accident: _____

Describe fully how accident occurred: (including events that occurred immediately before the accident):

_____

_____

_____

_____

Describe bodily injury sustained (be specific about body part(s) affected): _____

_____

_____

Recommendation on how to prevent this accident from recurring:_____

_____

Name of supervisor: _____ Phone#_____
Last First

Name(s) of witness(es): _____ Phone#_____
(Attach witness(es) report(s))

When did you report the accident to your supervisor? _____

To whom did you report the injury?_____

Do you require medical attention? Yes:_____ No:_____ Maybe:_____

Name of your treating physician:_____ Phone#_____

Signature of employee: _____ Date: _____

Form may be copied as needed

Accident Witness Statement

(To be completed by accident witness)

Injured employee's name: _____
Last First Middle

Name of witness: _____ Ph# _____
Last First Middle

Job title of witness: _____ How long employed here?_____

Home address of witness: _____

City: _____ State: _____ Zip Code: _____

Location of accident: _____
Address/Name of building Area (bathroom, etc.)

Date of accident: _____ Time of accident: _____

Describe fully how accident occurred: (including events that occurred immediately before the accident):

_____

_____

_____

_____

_____

Describe bodily injury sustained (be specific about body part(s) affected): _____

_____

_____

Recommendation on how to prevent this accident from recurring:_____

_____

Name of Witnesse's Supervisor: _____ Ph#_____
Last First

Signature of Witness: _____ Date: _____

Form may be copied as needed

Supervisor's Accident Investigation

(To be completed by the employee's supervisor or other responsible administrative official)

Location where accident occurred	Employer's Premises: Yes ☐ No ☐ Job site: Yes ☐ No ☐		Date of accident or illness
Who was injured?	☐ Employee ☐ Non-Employee		Time of accident a.m. ☐ p.m. ☐
Length of time with firm	Job title or occupation	Name of dept. normally assigned to	How long has employee worked at job where injury or illness occurred?
What property/equipment was damaged?			Property/equipment owned by:
What was employee doing when injury/illness occurred? What machine or tool was being used? What type of operation?			
How did injury/illness occur? List all objects and substances involved.			
Part of body affected/injured?	Any prior physical conditions? If so, what? Yes ☐ No ☐		
Nature and extent of injury/illness and property damaged (be specific)			

PLEASE INDICATE ALL OF THE FOLLOWING WHICH CONTRIBUTED TO THE INJURY OR ILLNESS

____ Failure to lockout	____ Improper maintenance	____ Poor housekeeping
____ Failure to secure	____ Improper protective equipment	____ Poor ventilation
____ Horseplay	____ Inoperative safety device	____ Unsafe arrangement or process
____ Improper dress	____ Lack of training or skill	____ Unsafe equipment
____ Improper guarding	____ Operating without authority	____ Unsafe position
____ Improper instruction	____ Physical or mental impairment	____ Other _____

Supervisor's corrective action to ensure this type of accident does not recur: _____

_____

_____

_____

Was employee trained in the appropriate use of Personal Protective Equipment/Proper safety procedures? ... Yes ___ No ____

Was employee cautioned for failure to use Personal Protective Equipment/Proper safety procedures? ..... Yes ___ No ____

Did employee promptly report the injury/illness? ..... Yes ___ No ____

Is there modified duty available? ..... Yes ___ No ____

Supervisor's name	Supervisor's signature	Phone#	Date

Form may be copied as needed