Lower South Street Development

Proposals due on November 15, 2018

Delivered to:

City Clerk
City Hall
840 Main Street
Peekskill, NY 10566
About Peekskill

Our City’s marketing motto, “Peekskill….It’s Happening!” captures the dynamic and energetic growth occurring in Peekskill. In recent years, niche economic markets – entertainment, fine and digital art, culture, craft food and beverage, sports and recreation, waterfront tourism, and personal service – have coalesced to create a vibrant downtown complemented by diverse housing options. Peekskill seeks to build upon its successes to achieve market diversification in tourism and leisure activities, the arts, industry and media, and light manufacturing “maker spaces”, with the goal of attracting businesses with jobs for all skill levels. Peekskill envisions an inviting and walkable connection between out waterfront TOD area to expand and facilitate an active “24/7” mixed use community. The city has recently applied to the state for grant funding that will include technical support to help the City promote our goal to attract a diverse mix of sustained business investment, job growth, housing options and unique attractions. Investing in strategic projects will promote redevelopment and establish Peekskill as the ultimate small city in which to live, work and raise a family.

In 2015, the Mid-Hudson Regional Economic Development Council’s Progress Report identified Peekskill as a community that is ripe for revitalization because it is “walkable, affordable, and has plenty of job options.” The City’s award-winning waterfront and parks system, eclectic downtown dining and entertainment venues, and accessibility to New York City and the Hudson Highlands support housing options that are some of the best values in Westchester County. The CORE District contains attractive features that create an active downtown with a strong and unique sense of place, including the Local and National Register Historic District, the Artist District, the County’s first Business Improvement District, and the waterfront/TOD district, linked by the Central Avenue/McGregory Brook connector. In recent years, this area has seen extensive physical improvements that have made it more attractive to residents, visitors and investors. Peekskill has more than 650 affordable/senior residential units, 150 live-work artist lofts, close-in residential neighborhoods available to all income levels, multi-modal transportation options, and upgraded public infrastructure and streetscapes. The central business district abounds with personal and professional services as well as niche/specialty stores that are focused on the craft food, beverage, and entertainment industries. Art galleries and live-work studio spaces that support Peekskill’s artistic expressions occur in several areas of the downtown. The Transit Oriented Development (TOD) waterfront area is beginning to see significant investment due to excellent building stock and vacant sites that are ready for renovation and reuse. In recent years, Peekskill has seen specialty restaurants and pubs opening as well as the new Lincoln Depot Museum and Public Plaza. Light manufacturing and creative maker spaces are showing promise as a new employment base in the TOD district. Rounding out this vibrant area is the expanded waterfront parks and trail system that hosts year-round cultural celebrations and provides unrestricted access to the Hudson River.
The Development Opportunity Overview

The City of Peekskill is currently seeking an experienced real estate development firm to submit a development proposal for the City owned properties for the Lower South Street Development. These parcels are located between Lower South Street and Route 9, immediately south of Louisa Street and Travis Lane overlooking the Hudson River (see the attached map). The 11.6-acre assembly has north and south vehicular access from the Louisa Street interchange with Route 9. The city has secured an initial appraisal of the property dated January 2017, appraising the land value between $3.5 and $5 million.

Included in this announcement is a Decision Document from New York State Department of Environmental Conservation for Site ID No. C-360145 was issued on November 22, 2017 and an eof potential tax credits from New York State Department of Environmental Conservation letter dated June 7, 2018, that further clarifies the Brownfield remediation work plan credits for the 11.7-acre site. It is important that the responding developer demonstrate their development team experience with the Brownfield cleanup program.

The City would like to encourage a mixed-use plan that responds to the M2B zoning criteria and will consider a residential component if it is found to be the most beneficial development scenario. Since this is one of the largest available development sites in Peekskill emphasis on enhancing new employment opportunities, increasing tax base, improving the quality of life with views of the Hudson River and easy access to Metro North will be important considerations in redeveloping the site.

Through the Request for Proposals (RFP) process, the City will review the developer qualifications and concepts resulting in a short list of preferred developers. Preferred developers will be invited to make presentations to the City Council where the winning developer by will be selected. Following this designation, the City’s intends to enter into exclusive negotiations for the disposition of this development parcel and to communicate their decision to the New York State DEC that the developer will be joining the City in the site’s Brownfield Cleanup program as a volunteer.

The developer is encouraged to include minority and women owned businesses (m/wbe) in the design and implementation phases of their development proposal. A description of the role that m/wbe businesses will take in the design or the development process should be included in the RFP response.

General Description – Lower South Street

The Lower South Street corridor currently include industrial and warehouse uses with the Mearle Corporation facility occupying the largest property on this reach of Lower south street. An
existing on-site sanitary sewer main will need to realign along the shoulder of lower South Street and roadway improvements along the frontage of this property will necessary.

The Route 9 Louisa Street interchange adjacent to the site provides vehicle access from the Bear Mountain Parkway to the north and points west, east and south from route 9. A regional baseball stadium is located diagonally across from the site on Louisa Street, which abuts the Metro North railroad tracks, the City’s riverwalk, and the Hudson River beyond. Charles Point Pier Park and Fleischmann Pier are within walking distance from this parcel and the site has views of the Hudson River.

I. NYSDEC Decision Document and Remedial Work Plan/Alternatives Analysis

Attached you will find a Remedial Work Plan /Alternatives Analysis and a Decision Document from the New York state Department of Environmental Conservation as required by the Brownfield Cleanup Program.

II. Existing Utilities on Lower south Street

Lower South Street utilities include electric power, water and sanitary sewer. An on-site gravity sanitary sewer main that serves a section of the City’s sanitary network will have to be replaced offsite. A new sewer main will have to installed in the City’s right-of-way along Lower South Street. A sanitary sewer pump station at the corner of Louisa and Lower South streets is being updated with piping for future capacity. Any new development will require the installation of additional pump capacity for sanitary outflows.

III. Notifications of Intent to Submit a Proposal

Developers are required to submit a Letter of Intent regarding the RFP as soon as possible in order the City to notify them of any clarifications or additional information that becomes available on this project before the RFP deadline.

Please address the “Letter of Intent” to;

City of Peekskill
840 Main Street
Peekskill, New York 10566

Attention; Jim Pinto
Economic Development Specialist
IV  RFP Submission

1. Developer Organization and Project Experience

The developer must demonstrate extensive organizational experience and capacity to manage a project of this size by listing required staff positions and their responsibilities in the planning and implementation of development this project.

The developer must include:

- Name, title, organization, address, phone number and e-mail for primary point of contact.

- Resumes from key staff members assigned to this project

- Provide information on at least three relevant large-scale projects undertaken and completed in the last ten years by the developer, including Brownfield Remediation.

2. Development Project Experience

- The following information must be provided for each project in the experience section of the RFP response;

  a. Project name, type, location, acreage, total building square footage, uses, and densities.
  b. Development team members who were involved in each project and identify if they would also participate in the Peekskill project.
  c. Public/private structure, current ownership and final transaction structure.
  d. Total project cost/sales value
  e. Financing resources
  f. Overall duration of construction build-out
  g. Schedule for rent / sales values by unit type
3. **Developer Financial Capacity and Capability**

The developer must be able to demonstrate financial capability and expertise to structure innovative transactions that produce a successful development project.

The developer’s submission should address the following:

- Identify if the Developer is a subsidiary of, or affiliated with, any other corporations or firms.
- Indicate whether the Developer is the parent corporation or subsidiary has ever been adjudged bankrupt, indicted or convicted of any felony.
- Composition of developer’s current real estate portfolio.
- Developer’s recent history in obtaining financing commitments for real estate development projects, detailing the type of project, financing source and amounts committed.
- Two bank references for the developer and financial equity partner.
- Financial statements for the past three years.
- Please submit a statement regarding any debarments, suspensions, and bankruptcy or loan defaults on real estate development projects and/or government contracts.

4. **Vision and/or Strategy for Site Development**

The developer must articulate a vision and development strategy for this property. The City is interested in hearing from developers about sustainable, innovative and revenue-producing development possibilities for this site. Attached is the Lower South Street Vision Summary that represents the compilation of numerous studies and charrettes which were conducted for the Lower South Street area since 1998. In this section, the developer must identify their vision for the highest and best use for this property. The existing zoning is M-2B (design industrial district map attached), however, the City will consider rezoning the property based upon council approval of the preferred concept.

5. **RFP Submittal Requirements**

The developer must also include in their submittal:

- A narrative with supporting proposed site plan with schematics or renderings as necessary.
- Proposals should be specific about the scale, type and configuration of the proposed development.
- A discussion describing their approach the infrastructure improvements, construction and environmental remediation schedules.
- Business terms, timing, and conditions for conveyance of the site. Developers should submit a proposal that will serve as the basis for the negotiations of a Land Development Disposition Agreement between the City and the preferred developer.
- The developer is encouraged to include minority and women owned businesses (m/wbe) in the design and implementation phases of their development proposal. A description of the role that m/wbe businesses will take in the process should be part of the RFP response.

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**RFP Proposals must be submitted by November 15, 2018**

Please submit your RFP proposal in digital format on a USB drive as a PDF file. In addition, provide one set of presentation boards mounted with the proposed site plan and elevations, five hard copies of the proposed plans in print to:

City Clerk  
Peekskill City Hall  
840 Main Street  
Peekskill, NY 10566

**RFP for Lower South Street Development**

Proposal submission shall be enclosed in a sealed envelope bearing the name and address of the developer and labeled “RFP – Lower South Street Development”.

**Please address all questions about this RFP in writing to Jim Pinto, Economic Development Specialist at 914-734-4215, jpmuto@cityofpeekskill.com,**

The City of Peekskill specifically reserves the right to accept or reject any or all proposals, to negotiate with any qualified source, to cancel in part or entirely this Request for Proposal, to waive any proposal requirements, to investigate the qualifications of any proposal, to obtain new proposals, or proceed to have the service provided in any way as necessary to serve the best interests of the City of Peekskill.
Lower south Street RFP (continued)

**ATTACHMENTS**

Regional Location Map

Map of Site (showing existing buildings)

NYS DEC Approval & Decision Document, November 22, 2017 (NYSDEC Site No. C360145)

NYS DEC Brownfield credit implications for C o C after December 2019 – June 7, 2018

Remedial work Plan and Alternatives Analysis

Lower South Street Vision Summary – April 2018

Lower South Street Zoning 2018 (M-2B)
Lower South Street Redevelopment Area

Figure 1: Site Location Map
1005, 1009, 1011, 1013 and 1017 Lower South Street
City of Peekskill, Westchester County, New York

Sources: City of Peekskill 2007 Ponds Dataset; USGS Topographic Map of the Peekskill, NY Quadrangle Date (1957, Revised 1998)
June 7, 2018

Mr. James Pinto  
City of Peekskill  
840 Main Street  
Peekskill, NY  10566

RE:  Lower South Street Redevelopment Area  
Westchester County  
Site No. C360145

Dear Mr. Pinto:

This is in response to your email of June 6, 2018 concerning the referenced site in which you inquired about the Brownfield Cleanup Program (BCP) credit implications should the site remedy not be completed and a certificate of completion (CoC) not issued by December 31, 2019.

As you may be aware, there have been three generations of the BCP since its inception following changes to the BCP law. This site’s application into the BCP was approved on March 13, 2015 and the Brownfield Cleanup Agreement for the site was executed on March 25, 2015 making it a "Generation 2" BCP site. The 2015 Brownfield law established a mandatory completion date of December 31, 2019 for which a CoC must be issued for Generation 2 sites in order to qualify for the Generation 2 tax credits.

Generation 2 sites that do not meet the mandatory completion date of December 31, 2019 will be subject to Generation 3 Brownfield provisions, including the different tax credit structure that is part of the Generation 3 changes. Information about the 2015 law and tax credit implications can be found at the following link: http://www.dec.ny.gov/chemical/101350.html, and a comparison of the tax credit provisions is enclosed.

Please let John Spellman, the site project manager, or me know if we can be of further assistance. We can be reached at (518) 402-9662.

Sincerely,

Amen M. Omorogbe, P.E.  
Chief, Remedial Section D  
Remedial Bureau C  
Division of Environmental Remediation.
November 22, 2017

Mr. Jim Pinto
City of Peekskill
840 Main Street
Peeelskll, NY 10566

RE: Lower South Street Redevelopment Area Site
Site ID No. C360145
City of Peekskill, Westchester County
Remedial Work Plan/Alternative Analysis &
Decision Document

Dear Mr. Pinto:

The New York State Department of Environmental Conservation (the Department)
and the New York State Department of Health (NYSDOH) have reviewed the Remedial
Work Plan (RWP) and Alternatives Analysis (AA), dated October 25, 2017, which was
prepared by Chazen on behalf of the City of Peekskill. The RWP/AA is hereby approved.
Please ensure that a copy of the approved RWP/AA is placed in the document
repositories. The draft plan should be removed.

Enclosed is a copy of the Department’s Decision Document for the site. The
remedy is to be implemented in accordance with this Decision Document. Please
ensure that a copy of the Decision Document is placed in the document repositories.

Please contact Amen Omorogbe at amen.omorogbe@dec.ny.gov or by calling
(518) 402-9662 at your earliest convenience to discuss next steps. Please recall the
Department requires seven days’ notice prior to the start of field work.

Sincerely,

George Heitzman, P.E.
Director
Remedial Bureau C
Division of Environmental Remediation

Enclosure
cc: M. Ryan
    G. Heitzman
    A. Omorogbe
    E. Moore
    K. Anders - NYSDOH
    M. Schuck – NYSDOH
    S. Karpinski – NYSDOH
    S. Berninger – NYSDOH
    J. Pinto – City of Peekskill – jpinto@cityofpeekskill.com
    A. St. Romain – Chazen – Arlette@chazencompanies.com
    R. Urban-Mead – Chazen – Russell@chazencompanies.com
Remedial Work Plan & Alternatives Analysis

Lower South Street Redevelopment Area
Brownfield Cleanup Program

NYSDEC Site No. C360145
1005, 1009, 1011, 1013, and 1017 Lower South Street
City of Peekskill, Westchester County, New York

October 25, 2017

THE
Chazen
COMPANIES
Proud to be Employee Owned
Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects

Prepared for:
City of Peekskill
840 Main Street
Peekskill, NY 10566

New York State Department of Environmental Conservation –
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by:
Chazen Engineering, Land Surveying & Landscape Architecture Co., D.P.C.
21 Fox Street
Poughkeepsie, New York 12601

Capital District Office North Country Office Nashville, TN Office
(518) 273-0055 (518) 812-0513 (615) 783-1628

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Remedial Work Plan & Alternatives Analysis

Lower South Street Redevelopment Area
Brownfield Cleanup Program

NYSDEC Site No. C360145
1005, 1009, 1011, 1013, and 1017 Lower South Street
City of Peekskill, Westchester County, New York

October 25, 2017

THE
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I Proud to be Employee Owned

Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects

I, Joseph M. Lanaro, certify that I am currently a NYS registered professional engineer and that this Remedial Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DERP Technical Guidance for Site Investigation and Remediation (DER-10).

Joseph M. Lanaro, PE

STATE OF NEW YORK
LICENSED PROFESSIONAL ENGINEER
070126
10/05/17
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The Chazen Companies
October 25, 2017
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EXECUTIVE SUMMARY

This Remedial Work Plan (RWP) and Alternatives Analysis (AA) outlines the activities that will serve to mitigate impacts remaining in the surface and subsurface at the Lower South Street Redevelopment Area (hereinafter referred to as the “LSS Site”) in the City of Peekskill, Westchester County, NY. This RWP&AA is submitted as part of the New York State Brownfields Cleanup Program (BCP) for Site No. C360145, that is located more specifically at 1005, 1009, 1011, 1013, and 1017 Lower South Street.

The LSS Site is comprised of the Former L&L Site and the Former Global Recycling Site. The Former L&L Site was initially developed as a residence which was converted to a junkyard property in 1950. The Former Global Recycling Site was also previously used for a residence, transitioning to a wood waste processing facility and operating a transfer station for construction and demolition (C&D) waste. The City uses some of the LSS Site for storage. The January 2017 Remedial Investigation Report identified the following:

- Across the five addresses of the LSS Site, identified compounds of concern in soil consist of polycyclic aromatic hydrocarbons (PAHs) and select metals on the Former L&L Site, sporadic occurrences of select metals on the northern end of 1011 LSS, metals at the western end of 1013 LSS, and select metals and polychlorinated biphenyls (PCBs) on the Former Global Recycling Site.
- Groundwater has generally not been encountered on the LSS Site, with very limited instances of perched groundwater. No remedy is anticipated for the limited perched groundwater at the LSS Site.
- While VOCs have not been identified as a soil or groundwater contaminant at the LSS Site, approximately one fifth of vapor samples identified chlorinated VOC concentrations greater than the subslab vapor action levels. Tetrachloroethene (PCE) and/or its degradation products were reported in these samples along with compounds associated with petroleum and automotive fluids.

This RWP&AA details the process by which semi-volatile organic compounds (SVOC), metals, and PCB impacts shall be addressed and by which progress monitoring shall document the effectiveness of the remedial action. The remedial action objective is to provide engineering controls to be protective of human health and the environment, where no further remedial action is warranted.

The site remedy selected from the alternatives analyzed in the Remedial Investigation Report is the Remove Selected Soil, Install Cover System and a Sub-Slab Depressurization System (SSDS) alternative. This remedy would include selective soil removal, installation of a protective cover across the exposed surface soil on the site, and an SSDS would be installed within existing and planned buildings prior to their occupancy. This alternative could be implemented using the existing buildings and site layout or with more extensive redevelopment and changes to the LSS Site layout. The soil removal action would remove and dispose of an estimated 5,383 CY (8,074 tons) of soil from the LSS Site.

Institutional controls and a protective cover engineering control will be implemented. An environmental easement will restrict use of LSS Site groundwater, restrict future use of the site to restricted-residential purposes, and require adherence to a Site Management Plan. An engineering control in the form of a protective cover will be maintained.

This remedy is characterized as a Track 4 remedy in the Brownfield Cleanup Program.
1.0 INTRODUCTION

This Remedial Work Plan (RWP) and Alternatives Analysis (AA) for the Lower South Street Redevelopment Area was prepared to describe and evaluate the site remedy. The Lower South Street (LSS) Site is located at 1005, 1009, 1011, 1013, and 1017 LSS in the City of Peekskill, Westchester County, New York and is identified as Brownfields Cleanup Program (BCP) Site No. C360145. The 11.6-acre LSS Site is comprised of two general areas: the 2.81-acre Former L&L Salvage Site at 1005 and 1009 LSS, and the 8.79-acre Former Global Recycling Site at 1011, 1013, and 1017 LSS. The Former L&L Site was initially developed as a residence which was converted to a junkyard property in 1950. The Former Global Recycling Site was also previously used for a residence, transitioning to a wood waste processing facility and operating a transfer station for construction and demolition (C&D) waste. This RWP&AA was prepared with guidance and assistance from New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH).

This RWP summarizes the plan to mitigate and/or control identified environmental impacts and achieve the remedial action objectives for the Site. The remedial action objective (RAO) is to achieve a Track 4 (restricted-residential) cleanup for the LSS Site through mitigation or engineering controls so that further remedial action is not warranted. The AA evaluates the potential mitigation/control options that could be used to achieve the Track 4 clean-up and selection of the remedy.

Identified compounds of concern in soil consist of polycyclic aromatic hydrocarbons (PAHs) and select metals on the Former L&L Site, sporadic occurrences of select metals on the northern end of 1011 LSS, metals at the western end of 1013 LSS, and select metals and polychlorinated biphenyls (PCBs) on the Former Global Recycling Site. While VOCs have not been identified as a soil or groundwater contaminant at the LSS Site, approximately one third of vapor samples identified chlorinated VOC concentrations greater than the subslab vapor action levels. Tetrachloroethene (PCE) and/or its degradation products were reported in some of these samples along with compounds associated with petroleum and automotive fluids. The RWP&AA addresses each of these issues.

1.1 Site Description

1.1.1 Site Location and Future Use

The LSS Site is an 11.6-acre unoccupied property situated east of Lower South Street, south of Travis Lane, and west of Route 9 in the City of Peekskill, Westchester County, New York. The area is currently zoned M-2A: Industrial Design District. The intended future use is mixed-use commercial activity with possible hotel, retail, sports facility, and/or multi-family housing, for which the City plans to rezone the LSS Site to be consistent with the intended use. A map illustrating the site location is attached as Figure 1. The LSS Site is identified on the Westchester County Real Property Tax map as Section 32.20, Block 2 Lots 4, 5, 5.1, 6, and 7. The LSS Site and surrounding areas are shown on an orthophotograph as Figure 2, and a tax map as Figure 3.
1.1.2 Geology

Soils observed on the Former L&L Site and 1011 and 1017 LSS parcels during Chazen’s 2014 Phase II Investigation and 2016 Remedial Investigation included both natural and fill material. Refusal at bedrock was encountered between 1 and 13 feet below ground surface (bgs) in most borings. Refusal was not encountered within 15 feet bgs in just four of 16 borings installed in 2014 and three of 29 borings installed in 2016. Using site investigation data and site elevation contours from the 2013 W&C report, Figure 3 provides a bedrock contour map.

Fill thicknesses range from 1 foot to at least 15 feet thick, and consist of brick, concrete, wood, rock, and asphalt. In addition:

- Fill material at the Former L&L Site also included coal/ash and fragments of the local bedrock were encountered near the bedrock surface.
- Fill material at 1011 LSS also included tile and glass, and exhibited an odor described as burnt or septic-like in some locations.
- Approximately half of the borings at 1011 LSS included what appeared to be undisturbed sand, silt, gneiss, and/or till.
- Fill material at 1013 LSS also included glass, coal/slag/ash, C&D waste including lumber, piping, fencing, rebar, and wire.
- Fill material at 1017 LSS included coal ash, glass, plastic, scrap metal, and a coal-like material.

1.1.3 Hydrogeology

The LSS Site does not support a consistent groundwater presence in overburden. Most soil borings on the property encountered no groundwater. Perched groundwater was found above the bedrock surface during two previous investigations only in four locations, and perched groundwater was encountered only in one boring during the 2016 Remedial Investigation.

Within the underlying fractured bedrock formation, topography predicts groundwater migrates generally westward in the direction of the Hudson River. A 2014 SPLP data evaluation suggested that groundwater in the bedrock is unlikely to exceed Groundwater Quality Standards (GWQS).

Site contaminants do not present a groundwater exposure pathway due to direct ingestion as the LSS Site and surrounding properties are supplied with municipal water and sewer. The City of Peekskill’s water source is Hollow Brook, which is fed by two reservoirs, each of which is located up gradient of the LSS Site.

1.1.4 Surface Water Resources

No surface water bodies are present on the LSS Site. The Hudson River is located approximately 0.30 mile to the west.
An unnamed Hudson River tributary nearest to the LSS Site is located approximately 0.08 mile to the north of the LSS Site, and outlets to Sandy Cove. Another tributary to the Hudson River, the Dickey Brook, is located approximately 0.32 miles south of the Site, flowing westward from the Blue Mountain Reservation area southeast of the City of Peekskill which includes Lake Mitchell and Lounsbury Pond. LSS Site stormwater is expected to flow towards these two tributaries and thence to the Hudson River.

1.2 Site Background

The LSS Site is currently vacant with some use by the City for storage. The LSS Site was most recently used by separate parties for two different adjoining uses: the Former L&L Salvage Site occupied 1005 and 1009 LSS for auto salvage and junkyard activities, and the Former Global Recycling Site occupied 1011, 1013, and 1017 LSS as a solid waste recycling and transfer station.

The Former L&L Site has been vacated by the prior salvage and junkyard owner/operator, and it appears to have been initially developed as a residential site with a junkyard present from 1950. The Former L&L Site includes vegetated areas, an inactive scale pit, a soil pile, a pile of cobbles and boulders, and a pile of mixed debris including cobbles, boulders, and concrete, and some vehicle parts.

The 8.79-acre Former Global Recycling Site at 1011, 1013, and 1017 LSS (formerly owned by Karta Corporation) was historically used for a residence, transitioning to processing wood waste and operating a transfer station for construction and demolition (C&D) waste. An office building on the western side of 1017 LSS was constructed circa 1981. Building 6 on the eastern side of 1017 LSS was constructed in 1988-1989. Building 4 on the southern end of 1011 LSS was constructed circa 2000. Building 3 on 1013 LSS was constructed between 2002 and 2004. Two additional buildings (1 and 2) were constructed on the northern area of 1011 LSS circa 2002 and demolished between April 2004 and October 2006. Building numbering from other reports has been used here for consistency.

The office and Buildings 3, 4 and 6 remain on the Former Global Recycling Site, and paved driveways lead up to the buildings with paved areas on the front sides of the structures.

Multiple previous investigations were conducted on the LSS Site and were discussed in more detail in the Remedial Investigation Work Plan. At the Former L&L Site, multiple spill response activities were conducted between 2000 and 2011, with the most recent pre-BCP sampling occurring in 2014 by Chazen with ASP B data deliverables. At 1011 LSS, an extensive sampling program was implemented in 2011 by Tectonic supplemented in 2014 by sampling by Chazen with ASP B data deliverables. Finally, extensive sampling by Woodard and Curran (W&C) was conducted on 1013 LSS and 1017 LSS, with the latest pre-BCP 2013 site characterization data including ASP B data and associated data validation. Figure 3 provides a summary of prior sampling and Remedial Investigation Report results that exceed the Restricted-Residential Use SCOs (RRUSCO).

1.3 Nature and Extent of Contamination

The Chazen Companies prepared a Remedial Investigation Report dated January 2017, a Supplemental Remedial Investigation Report dated April 21, 2017 to characterize the soil stockpile, and a Supplemental Soil Gas Investigation dated September 13, 2017 to conduct additional sampling requested by NYSDOH. The remedial investigation objective was to gather data to refine delineation of the nature and extent of contaminant impacts to soil, soil vapor, and groundwater for use in fate/transport assessment.
Across the five addresses of the LSS Site, identified compounds of concern in soil consist of polycyclic aromatic hydrocarbons (PAHs) and select metals on the Former L&L Site, sporadic occurrences of select metals on the northern end of 1011 LSS, metals at the western end of 1013 LSS, and select metals and polychlorinated biphenyls (PCBs) on the Former Global Recycling Site.

Impacts to soil have now been delineated on the Former L&L Site (metals and PAHs) and between the office and Building 6 on 1017 LSS (lead and PCBs). An area of surface soil impacts (metals and PCBs) was also identified in the center of the Former L&L Site.

PAH impacts exceeding RRUSCOs are present in the top two feet of soil across the LSS Site, were generally consistent across this urban property, and total semi-volatile organic compounds (SVOCs) are less than 100 ppm, with three exceptions that had a maximum total SVOC concentration of 403.57 ppm. There was no identified source associated with the three outliers and are considered to be associated with the urban area and site-wide fill material.

Groundwater has generally not been encountered on the LSS Site, with very limited instances of perched groundwater. Two 2010 investigation locations encountered perched groundwater east of Building 3 and west of the office building, and reported no VOC or SVOC impacts. W&C’s 2012 sampling encountered perched groundwater in one test pit west of Building 3 on 1013 LSS, and reported elevated concentrations of methyl tertiary-butyl ether (MTBE), SVOCs, and lead. Chazen encountered perched groundwater in one soil boring on 1017 LSS and the water sample met groundwater quality standards (GWQSs) for volatile organic compounds (VOCs), SVOCs, and PCBs. Exceedances of GWQSs were associated with sodium that is likely due to runoff from winter road salt applications and manganese that may be associated with fill material that is prevalent across the LSS Site. No remedy is anticipated for the limited perched groundwater at the LSS Site.

While VOCs have not been identified as a soil or groundwater contaminant at the LSS Site, 5 out of 24 soil vapor samples identified chlorinated VOC concentrations greater than the subslab vapor action levels. Tetrachloroethene (PCE) and/or its degradation products were reported in these samples, along with compounds associated with petroleum and automotive fluids.

1.4 Human Health Exposure Assessment

The Remedial Investigation Report included a Human Health Exposure Assessment that is summarized as follows:

- **Soil impacts at the LSS Site include** metals, PAHs and PCBs that appear to be from historic automotive salvage activities and fill material. While sporadic soil vapor samples reported chlorinated VOC concentrations greater than the action levels, there is no evidence of a source, or vapor plume on or migrating from the LSS Site. Groundwater is not considered a media with SCG exceedances or a related Area of Concern. This is due to the lack of overburden groundwater at the LSS Site and infrequent perched water in fill material above bedrock.

- **The LSS Site is currently vacant, locked, and fenced, and mostly paved; the City’s limited usage is for storage. As such, there is no current human health exposure pathway to soil or soil/subslab**
vapor contaminants under current site use conditions. The LSS Site and surrounding properties lie within a community receiving water from a municipal water supply system.

- Potential exposures during site redevelopment would be addressed by following the Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP), and as presented in the description for the remedial options.

- The Alternatives Analysis evaluates how each remedial option would mitigate potential future exposures at the LSS Site.

2.0 REMEDIAL ACTION ALTERNATIVES

2.1 Remedial Goals and Remedial Action Objectives

The goal of remedial action for the LSS Site is to protect human health and the environment through administrative or engineering controls that would mitigate residual impacts or prevent exposure to affected site soil vapor, soil and groundwater to the extent feasible, consistent with DER-10. The overall goal is to attain a Track 4 clean-up of the LSS Site.

The Remedial Action Objectives (RAOs) for specific media follow.

**Groundwater**

**RAOs for Public Health Protection**

- Prevent ingestion of perched water with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated perched water.

**Soil**

**RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation exposure to contaminants volatilizing from soil.

**Soil Vapor**

**RAOs for Public Health Protection**

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the site.

The remedial action objectives will be attained using a presumptive remedy for the Site that includes:

- Removal and disposal of soil stockpile from the Former L&L Site.
Excavation of impacted surface and shallow soil in northern and central parts of the Former L&L Site (metals), at the western end of 1013 LSS (metals), and between the office and Building 6 on 1017 LSS (lead and PCBs) and limited areas with elevated PAHs that exceed Restricted-Residential Use Soil Clean-Up Objectives.

Removal or covering of remaining shallow surface soils to meet RRUSCOs for the LSS Site.

Installation of an sub-slab depressurization system (SSDS) within existing site buildings or planned new buildings prior to occupancy. In existing buildings, floors will be checked for damage or unsealed penetrations and those areas will be sealed as needed to limit the flow of subsurface vapors into the building. In new buildings, a vapor barrier will be installed beneath the slab consistent with design plans prepared at that time. Prior to occupancy and after each building’s heating, ventilation, and air conditioning (HVAC) system is installed, SSDS discharge, indoor, and outdoor air sampling will be performed. For warehouse type structures, it is anticipated that the SSDS and compliance air sampling will be focused on office areas that do not have high air exchanges due to overhead doors.

As defined in NYSDEC DER-10 (Section 4.0), remedial alternatives are evaluated based on the following criteria:

a) Overall Protection of Public Health and the Environment: This criterion evaluates exposure and residual risks to human health and the environment during or subsequent to implementation of the alternative.

b) Compliance with SCGs: This criterion evaluates whether the remedial alternative will ultimately result in compliance with SCGs, to the extent practicable.

c) Long-Term Effectiveness and Permanence: This criterion evaluates if the remedy is effective in the long-term after implementation (e.g., potential rebound). In the event that residual impacts will remain as part of the alternative, then the risks and adequacy/reliability of the controls are also evaluated.

d) Reduction of Toxicity, Mobility, or Volume with Treatment: This criterion evaluates the reduction of contaminant toxicity, mobility or volume as a result of the remedial alternative. In addition, the reversibility of the contaminant destruction or treatment is evaluated.

e) Short-Term Effectives: This criterion evaluates if the remedial alternative protects the community, workers and the environment during implementation.

f) Implementability: This criterion evaluates the remedial alternative based on its suitability, implementability at the specific site, and availability of services and materials that will be required.

g) Cost: This criterion evaluates the capital, operation, maintenance, and monitoring costs for the remedial alternative. The estimated costs are presented on a present worth basis.
h) Community Acceptance: This criterion takes into account concerns of the community regarding the proposed remedy. Any public comments and overall public perception are addressed as part of the criterion.

i) Land Use: This criterion evaluates the proposed remedial approach against the current, intended, and reasonably anticipated future use of the land and its surroundings.

2.2 Analysis of Alternatives

Based on the findings of the Remedial Investigation, an AA was performed to assess reasonable and appropriate site remediation options and to select an appropriate alternative for mitigation the site. Three alternatives determined to be relevant were considered and evaluated. These are summarized as follows and the selected alternative is identified.

2.2.1 Alternative 1: No Further Action

Under the No Further Action (NFA) alternative, no remedial actions, institutional, or engineering controls would be implemented.

No further action would leave the LSS Site in its current condition with the identified potential exposures to impacts from on-site soil and soil vapor.

This alternative was considered as a baseline in the assessment process, and will not be selected because it is not protective of human health or the environment and does not meet the remedial goals and objectives. Therefore, it is not evaluated further.

2.2.2 Alternative 2: Remove Selected Soil, Install Cover System and a SSDS

The Alternative 2 remedy would include selective soil removal, installation of a protective cover across the exposed surface soil on the site, and a sub-slab depressurization system (SSDS) would be installed within existing and planned buildings prior to occupancy. This alternative could be implemented using the existing buildings and site layout or with more extensive redevelopment and changes to the LSS Site layout. Since soil removal beneath buildings is not required to meet RRUSCOs, building demolition is not included in this alternative, although it may be included in the site redevelopment plan. As the redevelopment plan has not yet been finalized, the general plan is anticipated to include 80% of the LSS Site redeveloped with cover consisting of buildings, pavement or sidewalks, and the remaining 20% of the LSS Site redeveloped with two feet of clean fill for green space, landscaping, and storm drainage infrastructure.

Prior to occupancy, an SSDS will be installed within existing and planned buildings, and existing floors will be checked for damage and sealed as needed to limit the flow of subsurface vapors into the building. In new buildings, a vapor barrier will be installed beneath the slab. Under this alternative, an environmental easement would be issued as an institutional control to restrict site use options (e.g., restricted-residential use, no groundwater usage) and activities in the impact area (e.g., soil management plan for future excavation work).

The soil removal action would remove and dispose of an estimated 5,383 CY (8,074 tons) of soil from the following Areas of Concern (AOCs) (see Figure 4 for locations), and most of the Former L&L Site...
(approximately 2.5 acres of the 2.81-acre area) would be cleared and grubbed to allow for soil removal activities in this area. Confirmation soil samples would be collected to document soil conditions at the limits of excavations and beneath the soil stockpile.

1. **AOC 1:** In the northeastern corner of the Former L&L Site near SB-5 (0 to 2 inches) reported elevated lead, cadmium and copper concentrations. These metals concentrations were not reported in other nearby samples; therefore, the area of concern is estimated to be 20 feet in diameter and one to two feet deep and is expected to removal soil from LL-SB6 where total SVOCs were 403.57 ppm. Estimated volume from this area is 23 CY (35 tons), with an approximate area of 315 square feet and an excavation perimeter of 63 linear feet. This excavation work is estimated to take one quarter of a day to complete and is expected to be completed in the same day as AOC 2.

2. **AOC 2:** The northwestern corner of the Former L&L Site has an area of surface soil lead impacts in the LL-SB1, SB-11, SB-15, SB-17, SB-19, and SB-20 locations, and extended to approximately 2 feet at borings LL-SB1 and SB-17. Elevated lead concentrations range from approximately 400 ppm to 879 ppm. The area of surficial lead impacts is estimated to be 35 feet by 55 feet in area, and less than six inches deep. Estimated volume from this area is 36 CY (53 tons), with an approximate area of 1,925 square feet and an excavation perimeter of 180 linear feet. This excavation work is estimated to take half of a day to complete and is expected to be completed in the same day as AOC 1.

3. **AOC 3:** The central area of the Former L&L Site identified elevated lead concentrations (1,220 to 11,700 ppm), along with one elevated PCB sample and several other elevated metals (copper, cadmium, and mercury) in the top two inches of soil. The area of impacts is estimated to have a 130-foot radius and be two to three feet deep, based on the reported concentrations and other observations across the Former L&L Site. This area includes SB-10 that also reported elevated copper. While the deeper SB-10 sample also reported copper and cadmium exceedances in the bottom of the boring at 10 to 12 feet, the concentrations at this depth do not represent a direct exposure concern. Estimated volume from this area is 1,473 CY (2,209 tons), with an approximate area of 18,790 square feet and an excavation perimeter of 492 linear feet. For cost estimating purposes, this soil is assumed to be disposed of as non-hazardous. This excavation work is estimated to take 17 days to complete.

4. **AOC 4:** An area of lead with mercury impacts was identified on the western end of 1013 LSS at GB-37/6 (6 to 7 feet) and SS2 (SITES test pit), and the impacted area appears to have been defined by multiple prior sampling events. This area is estimated to be approximate 70 feet by 30 feet, with depths ranging from 3 feet to 8 feet. Estimated volume from this area is 466 CY (699 tons), with an approximate area of 1,870 square feet and an excavation perimeter of 165 linear feet. This excavation work is estimated to take 6 days to complete.

5. **AOC 5:** An area of lead and PCB impacts was identified between the office and Building 6 on 1017 LSS. The concentrations are highest at TP-2 and extend outward to include SB-22 and SB-27 (lead) and to TP-1, SB-23, and SB-25 (PCBs). This lead area of concern (AOC-5a) is approximately 4 feet deep, 25 feet wide, and 20 feet long. Estimated volume from this lead in soil area is 74 CY (111 tons), with an approximate area of 500 square feet and an excavation perimeter of 90 linear feet. For cost estimating purposes, this soil is assumed to be disposed of as hazardous based on total lead concentrations. While the estimated 25-foot wide and 3-foot deep area where PCB concentrations are greater than the RRUSCO (AOC-5b) extends approximately 15 feet south of
TP-2 (for approximately 10 feet by 10 feet by three feet), the three delineating samples results just slightly exceed the SCO and range from 1.09 to 2.7 ppm. **Estimated volume from this PCBs in soil area is 11 CY (17 tons), with an approximate area of 375 square feet and perimeter of 80 linear feet.** This excavation work for both AOC 5a and 5b is estimated to take one day to complete.

6. **AOC 6:** The soil stockpile located in the southwestern corner of the Former L&L Site is approximately 3,300 CY will also be removed for disposal as Supplemental Remedial Investigation sampling results show that it does not meet the RRUSCOs for cadmium, copper, lead, or mercury. As needed, soil under the stockpile will be removed to demonstrate that remaining soil is consistent with site conditions (i.e., SVOCs may remain at concentrations consistent across the LSS Site, but other analytes will generally meet the RRUSCOs). The area of the stockpile is approximately 12,225 square feet with a stockpile perimeter of 535 linear feet. This stockpile loadout and excavation work is estimated to take 35 days to complete.

One stockpile sample reported a TCLP lead of 5.85 mg/L, which is greater than the 5mg/L action level for hazardous material. Remaining TCLP results were well below the TCLP action level and ranged from 0.212 to 1.53 mg/L. As such, an estimated 10%, or **330 cubic yards (495 tons) of soil from the central section of the pile is expected to be disposed of as hazardous waste, and the remaining 2,970 cubic yards (4,455 tons) of the soil stockpile volume is anticipated to be disposed of as non-hazardous.** The Former L&L Site pile of cobbles and boulders, pile of mixed debris including cobbles, boulders, concrete, and some vehicle parts are expected to have the metal segregated and disposed of or recycled off-site, and the aggregate be reusable for fill on the LSS Site.

The analysis of this alternative is presented below. **This alternative is the best alternative because it is protective of human health and the environment, meets the remedial goals and objectives and would achieve the Restricted Residential goals, and is economically feasible.**

*Overall Protection of Human Health and the Environment*

Selecting this alternative would be protective of human health and the environment and would meet the RAOs. The limited soil excavation would remove “hotspot” areas of soil impacts, the cover would prevent potential contact with remaining impacted soil, and the ventilation system would mitigate potential exposure of future occupants from potential VOC vapor identified in limited site areas.

This alternative is expected to be consistent with the planned future use of the site for both residential and commercial activities.

*Compliance with Standards, Criteria and Guidance*

Under this alternative, the LSS Site would comply with the SCGs as the soil removal, cover system and vapor barrier would mitigate exposure to remaining impacted soil and soil vapor.

*Long-term Effectiveness and Permanence*

This alternative would be effective in the long term, as exposures would be mitigated. The selected soil removal and cover system would prevent direct contact with impacted soil. The vapor barrier would mitigate potential exposures within buildings.
This alternative satisfies the RAOs. An environmental easement and Site Management Plan (SMP) would be issued with institutional controls to restrict site use options (e.g., restricted-residential use, no groundwater usage) and activities in the impact area (e.g., soil management plan for future excavation work).

Reduction of Toxicity, Mobility, and Volume with Treatment
The selected soil removal would reduce the volume and magnitude of site impacts associated with toxicity and mobility of contaminants at the site by removing soil with highest identified impacts. While the cover system and vapor barrier would not reduce the volume and magnitude of the site impacts associated with toxicity and mobility of contaminants in these Site media, the relatively low concentrations in these media is less of a concern given this remedial alternative.

Short-Term Impact and Effectiveness
Potential exposures to impacted soil during site redevelopment would be addressed by following the HASP and CAMP. Engineering controls will include dust control measures such as water application, and typical construction erosion control activities such as silt fencing to prevent off-site migration of surface soil from surface runoff from storm events. The soil excavation, loading, and hauling under this alternative is expected to take 12 weeks to implement. The SSDS installation and repair of damaged areas of flooring could be completed during this timeframe.

This alternative would be implemented coincident with Site redevelopment activities, to consolidate site construction efforts and minimize the increase to truck traffic, fossil fuel usage, truck trips, truck and heavy equipment emissions, and on-site idling. However, the removal of the planned soil volume will increase related truck traffic to transport soil off-site. Construction entrance(s) will prevent soil from being tracked off the site on truck tires. While residences are located adjoining to the site, they are located east of Route 9 from the LLS Site and the project timeframe of 12 weeks would be temporary and result in improved views for the residences looking towards the Hudson River.

This alternative would be immediately effective as the selected soil removal and protective cover would prevent contact with the soil, and the SSDS and floor sealing or vapor barrier would prevent potential VOCs from migrating into site buildings. This remedy would be effective in achieving the site RAOs. The engineering controls (i.e., SSDS, and floor seal or vapor barrier) would remain in place for the life of the building(s).

Implementability
This alternative is technically feasible as it would be easily implementable as part of Site redevelopment activities. It would include physical removal of impacted soil, two engineering controls (soil cover and vapor barrier), and institutional controls identified in the environmental easement and SMP. The environmental easement required to leave residual contamination in place at concentrations greater than Unrestricted Use SCO(s) would include a land use restrictions (i.e., restricted-residential use), groundwater use restrictions, and compliance with an approved SMP. There would be no difficulties in securing personnel, materials, equipment or access to implement and maintain this alternative.

Cost Effectiveness
This alternative would be the most cost-effective alternative and the costs are shown in the table below.
### Alternative 2 Table Estimated Cost to Remove Selected Soil, Install Cover System and Vapor Barrier

<table>
<thead>
<tr>
<th>TASK</th>
<th>UNIT</th>
<th>UNIT COST</th>
<th>QUANTITY</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soil Removal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Project Management (10% of implementation)</td>
<td>each</td>
<td>$155,570</td>
<td>1</td>
<td>$155,570</td>
</tr>
<tr>
<td>Clear, grub, remove stumps from former L&amp;L Site</td>
<td>acres</td>
<td>$6,975</td>
<td>2.5</td>
<td>$17,438</td>
</tr>
<tr>
<td>Equipment rental and mobilization</td>
<td>CY</td>
<td>$5.00</td>
<td>5,362.7</td>
<td>$26,914</td>
</tr>
<tr>
<td>Excavate/Load (00 CY/day)</td>
<td>days</td>
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<td>60</td>
<td>$67,200</td>
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<tr>
<td>Non-Hazardous Soil - Transportation and Disposal</td>
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<td>Hazardous soil disposal (transport, dispose)</td>
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<td>Waste Characterization Sampling for soil for off site disposal</td>
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<td>Confirmation Soil Sampling Post-Excavation (includes QAQC samples)</td>
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<td>SVOCs</td>
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<td>Lead</td>
<td>sample</td>
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<td>Metals</td>
<td>sample</td>
<td>93.50</td>
<td>103</td>
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<tr>
<td>PCBs</td>
<td>sample</td>
<td>66.00</td>
<td>93</td>
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<tr>
<td><strong>Engineering/Technical Oversight</strong></td>
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<tr>
<td>Total Project Management (5% of design)</td>
<td>each</td>
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<td>Remedial Design and Project Plans</td>
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<td>Technical Oversight (ENV Scientist/H&amp;S) with field equipment</td>
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<td>CAMP Monitoring and Reporting</td>
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<td>Final Engineering Report</td>
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<td>Field Office/Port-a-Johns/Utilities/etc</td>
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<td>$1,200.00</td>
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<tr>
<td>Site Security</td>
<td>week</td>
<td>$97.00</td>
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<tr>
<td><strong>Sub-Slab Depressurization System</strong></td>
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<td></td>
</tr>
<tr>
<td>Total Project Management (10% of implementation)</td>
<td>each</td>
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<td>1</td>
<td>$11,161</td>
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<tr>
<td>Floor sealing in existing buildings (estimated 10% of total 73,625 SF)</td>
<td>SF</td>
<td>$1.60</td>
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<td>Install SSDS in existing buildings (one point per 2,000SF; total likely to decrease)</td>
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<td>$2,500</td>
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<td>$92,500</td>
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<td>Post-SSDS Install: sub-slab and indoor air sampling</td>
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<td>$7,332</td>
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<td><strong>Vapor Barrier Subtotal</strong></td>
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<td><strong>Follow up Monitoring (calculated for the next ten years, but required for duration of ECL)</strong></td>
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<td>Annual Indoor air quality monitoring</td>
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<td>$32,400</td>
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<tr>
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<td>10</td>
<td>$25,000</td>
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<tr>
<td><strong>Alternative Subtotal</strong></td>
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<tr>
<td>Contingency (10%)</td>
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<td>$223,038</td>
</tr>
<tr>
<td>Engineering (20%)</td>
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<td></td>
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<tr>
<td><strong>Total Alternative 2 Costs</strong></td>
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</tr>
</tbody>
</table>

### Land Use

This alternative is consistent with the planned future use of the site for mixed-use commercial activity with possible hotel, retail, sports facility, and/or multi-family housing, as the soil removal and cover would prevent contact with the residual impacted soil, and the vapor barrier would prevent exposure to potential VOCs migrating into site buildings.

Both the soil cover and vapor barrier would be active engineering controls operating through the life of the property and an environmental easement would be issued as an institutional control identifying site use restrictions and activities in the impacted areas (e.g., soil management plan for future excavation work).
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</tr>
<tr>
<td>Hazardous soil disposal (transport, dispose)</td>
<td>ton</td>
<td>450</td>
<td>405</td>
<td>$222,750</td>
</tr>
<tr>
<td>Waste Characterization Sampling for soil for off-site disposal</td>
<td>sample</td>
<td>1,610</td>
<td>13</td>
<td>$20,425</td>
</tr>
<tr>
<td>Confirmation Soil Sampling Post-Excavation (Includes QAQC samples)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVOCs</td>
<td>sample</td>
<td>$143.00</td>
<td>58</td>
<td>$8,294</td>
</tr>
<tr>
<td>Lead</td>
<td>sample</td>
<td>$20.00</td>
<td>18</td>
<td>$360</td>
</tr>
<tr>
<td>Metals</td>
<td>sample</td>
<td>$93.50</td>
<td>103</td>
<td>$9,631</td>
</tr>
<tr>
<td>PCBs</td>
<td>sample</td>
<td>$66.00</td>
<td>93</td>
<td>$6,138</td>
</tr>
<tr>
<td><strong>Soil Removal Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$1,769,261</td>
</tr>
<tr>
<td><strong>Engineering/Technical oversight</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Project Management (5% of design)</td>
<td>each</td>
<td>$7,151.76</td>
<td>1</td>
<td>$7,152</td>
</tr>
<tr>
<td>Remedial Design and Project Plans</td>
<td>each</td>
<td>$30,000</td>
<td>1</td>
<td>$30,000</td>
</tr>
<tr>
<td>Technical Oversight (ENV Scientist/H&amp;S) with field equipment</td>
<td>days</td>
<td>$1,050.00</td>
<td>60</td>
<td>$62,799</td>
</tr>
<tr>
<td>CAMP Monitoring and Reporting</td>
<td>week</td>
<td>$2,277.00</td>
<td>12</td>
<td>$27,327</td>
</tr>
<tr>
<td>Final Engineering Report</td>
<td>each</td>
<td>$18,000.00</td>
<td>1</td>
<td>$18,000</td>
</tr>
<tr>
<td>Field Office/Port-a-Johns/Utilities/etc</td>
<td>week</td>
<td>$1,200.00</td>
<td>12</td>
<td>$14,364</td>
</tr>
<tr>
<td>Site Security</td>
<td>week</td>
<td>$97.00</td>
<td>1,200</td>
<td>$116,400</td>
</tr>
<tr>
<td><strong>Engineering/Technical Oversight Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$280,941</td>
</tr>
<tr>
<td><strong>Sub-Slab Depressurization System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Project Management (10% of implementation)</td>
<td>each</td>
<td>$11,161.20</td>
<td>1</td>
<td>$11,161</td>
</tr>
<tr>
<td>Floor sealin in existing buildings (estimated 10% of total 73,625 SF)</td>
<td>SF</td>
<td>$1.60</td>
<td>7,363</td>
<td>$11,780</td>
</tr>
<tr>
<td>Install SSOS in existing buildings (one point per 2,000SF; total likely to decrease)</td>
<td>point</td>
<td>$2,500</td>
<td>37</td>
<td>$92,500</td>
</tr>
<tr>
<td>Post-SSOS Install: sub-slab and indoor air sampling</td>
<td>event</td>
<td>$7,332</td>
<td>1</td>
<td>$7,332</td>
</tr>
<tr>
<td><strong>Vapor Barrier Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$122,775</td>
</tr>
<tr>
<td><strong>Follow up Monitoring (calculated for the next ten years, but required for duration of ECs)</strong></td>
<td>event</td>
<td>$3,240</td>
<td>10</td>
<td>$32,400</td>
</tr>
<tr>
<td>Annual indoor air quality monitoring</td>
<td>event</td>
<td>$2,500</td>
<td>10</td>
<td>$25,000</td>
</tr>
<tr>
<td><strong>Total Alternative 2 Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td>$2,899,488</td>
</tr>
</tbody>
</table>

### Land Use

This alternative is consistent with the planned future use of the site for mixed-use commercial activity with possible hotel, retail, sports facility, and/or multi-family housing, as the soil removal and cover would prevent contact with the residual impacted soil, and the vapor barrier would prevent exposure to potential VOCs migrating into site buildings.

Both the soil cover and vapor barrier would be active engineering controls operating through the life of the property and an environmental easement would be issued as an institutional control identifying site use restrictions and activities in the impacted areas (e.g., soil management plan for future excavation work).
Community Acceptance

Community views on the RWP will be obtained during the public comment period, and will be addressed when the RWP is finalized. Community acceptance will be evaluated as part of the RWP process.

2.2.3 Alternative 3: RemEDIATE to Achieve Unrestricted Use with No IC/ECs

This alternative would restore the site to pre-release conditions by an aggressive soil excavation with building demolition. To access the soil, the four buildings would need to be demolished. The process for this alternative would be as follows: conduct pre-demolition surveys for asbestos-containing materials (ACM), remove identified ACM, remove aboveground storage tank by building 4, demolish buildings and concrete slab foundations, clear and grub most of the Former L&L Site (approximately 2.5 acres of the 2.81-acre area), remove asphalt and concrete, remove and dispose of soil. For estimating purposes, 211,551 CY (317,327 tons) of soil would be removed as follows:

- Areas identified in Alternative 2. Estimated volume from this area is 5,383 CY (8,074 tons).
- The top three feet would be removed from the northern end of the Former L&L Site. Estimated volume from this area is 1,150 CY (1,725 tons).
- The top five feet of soil would be removed from 1011 LSS and the northern open area of 1013 LSS, most of the Former L&L Site, and the eastern end of 1017 LSS around the Office. Estimated volume from this area is 110,000 CY (165,000 tons).
- The top ten feet of soil would be removed from under Buildings 3 and 6, and the open space west of these buildings, the western-most 100 feet of 1013 LSS, and the northwest corner of Former L&L Site. Estimated volume from this area is 95,000 CY (142,500 tons).
- Interim screening and sampling as needed with removal of additional soil “hotspots” as needed to achieve demonstrable Track 1 Clean-up.

No follow-up remedial activities or monitoring would be required.

Overall Protection of Human Health and the Environment

Selecting this alternative would be protective of human health and the environment, would meet the RAOs, and would meet Unrestricted Use SCO's, and no institutional or engineering controls would be needed.

Compliance with Standards, Criteria and Guidance

Under this alternative, the Site would comply with the SCGs as the LSS Site would meet Unrestricted Use SCO's.

Long-term Effectiveness and Permanence

This alternative would be a permanent solution and be the most effective in the long term and satisfies the RAOs. Under this alternative no ICs or ECs would be required for the Site. The Site buildings would be demolished to provide access to the impacted soil.
Reduction of Toxicity, Mobility, and Volume with Treatment

This alternative would remove the site impacts and leave no residual contaminants at the site; therefore, there would be no remaining or associated toxicity or mobility.

Short-Term Impact and Effectiveness

This alternative would be effective in achieving the site RAOs once implemented; however, implementation would take approximately 9.4 years. During implementation, there would be increased truck traffic noise and emissions associated with demolition and excavation equipment during weekdays. Residences are located adjoining to the site and are anticipated to be adversely impacted by nearly decade-long timeframe of construction noise and truck traffic. This alternative is not considered sustainable or consistent with DER-31 based on fossil fuel usage, truck trips, truck and heavy equipment emissions, and on-site idling.

Implementability

Given the very high cost and long implementation timeframe, this alternative would not be feasible for the City (owner) or future developer to implement and as such, take a longer time to initiate. It would demolish existing site structures that are functional and useable, and require additional investment to replace them. This alternative may be technically feasible, however, would not be easily implementable, although it would not require any ICs or ECs for the Site.

Cost Effectiveness

This alternative would be the least cost-effective alternative as there are high costs associated with the excavation of soil.

The costs associated with this alternative are shown in the table below.
### Alternative 3 Table Estimated Cost for Remediate to Meet Unrestricted Use SCOs with No IC/ECs

<table>
<thead>
<tr>
<th>TASK</th>
<th>UNIT</th>
<th>UNIT COST</th>
<th>QUANTITY</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asbestos Abatement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asbestos survey and abatement plans</td>
<td>each</td>
<td>$13,000</td>
<td>4</td>
<td>$52,000</td>
</tr>
<tr>
<td>Asbestos abatement (estimated since survey has not been conducted)</td>
<td>SF</td>
<td>$8.00</td>
<td>73,625</td>
<td>$589,000</td>
</tr>
<tr>
<td><strong>Abatement Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$641,000</td>
</tr>
<tr>
<td><strong>Building Demolition to Access Impacted Soil</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building and foundation demolition</td>
<td>SF</td>
<td>$6.02</td>
<td>73,625</td>
<td>$443,488</td>
</tr>
<tr>
<td>C&amp;D waste disposal</td>
<td>ton</td>
<td>$79.04</td>
<td>42,616</td>
<td>$3,366,247</td>
</tr>
<tr>
<td>AST removal</td>
<td>each</td>
<td>$5,000.00</td>
<td>1</td>
<td>$5,000</td>
</tr>
<tr>
<td><strong>Demolition Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$3,816,735</td>
</tr>
<tr>
<td><strong>Soil Removal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Project Management (10% of implementation)</td>
<td>each</td>
<td>$5,849.747</td>
<td>1</td>
<td>$5,849.747</td>
</tr>
<tr>
<td>Clear, grub, remove stumps from Former L&amp;L Site</td>
<td>acres</td>
<td>$6,975</td>
<td>2.5</td>
<td>$17,438</td>
</tr>
<tr>
<td>Remove and dispose of asphalt and concrete</td>
<td>SF</td>
<td>$15</td>
<td>212,296</td>
<td>$3,152,013</td>
</tr>
<tr>
<td>Equipment rental and mobilization</td>
<td>CY</td>
<td>$9</td>
<td>211,551</td>
<td>$1,057,756</td>
</tr>
<tr>
<td>Excavate/load (90 CY/day)</td>
<td>days</td>
<td>$1,120</td>
<td>2,351</td>
<td>$2,632,638</td>
</tr>
<tr>
<td>Non-Hazardous Soil - Transportation and Disposal</td>
<td>ton</td>
<td>$165</td>
<td>316,832</td>
<td>$51,566,284</td>
</tr>
<tr>
<td>Hazardous soil disposal (transport, dispose)</td>
<td>ton</td>
<td>$450</td>
<td>495</td>
<td>$222,750</td>
</tr>
<tr>
<td>Waste Characterization Sampling for soil for off site disposal</td>
<td>sample</td>
<td>$1,600</td>
<td>419</td>
<td>$669,604</td>
</tr>
<tr>
<td>Confirmation Soil Sampling Post-Excavation (includes QA/QC samples)</td>
<td>sample</td>
<td>$145.00</td>
<td>1350</td>
<td>$193,050</td>
</tr>
<tr>
<td>SVOCs</td>
<td>sample</td>
<td>$95.00</td>
<td>1350</td>
<td>$126,225</td>
</tr>
<tr>
<td>Metals</td>
<td>sample</td>
<td>$65.00</td>
<td>1350</td>
<td>$89,100</td>
</tr>
<tr>
<td><strong>Soil Removal Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$65,576,604</td>
</tr>
<tr>
<td><strong>Engineering/Technical oversight</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Project Management (5% of design)</td>
<td>each</td>
<td>$144,395.70</td>
<td>1</td>
<td>$144,396</td>
</tr>
<tr>
<td>Remedial Design and Project Plans</td>
<td>each</td>
<td>$45,000</td>
<td>1</td>
<td>$45,000</td>
</tr>
<tr>
<td>Technical Oversight (ENV Scientist/H&amp;S) with field equipment</td>
<td>days</td>
<td>$1,050.00</td>
<td>2,351</td>
<td>$2,468,098</td>
</tr>
<tr>
<td>CAMP Monitoring and Reporting</td>
<td>week</td>
<td>$759.00</td>
<td>470</td>
<td>$356,816</td>
</tr>
<tr>
<td>Final Engineering Report</td>
<td>each</td>
<td>$18,000.00</td>
<td>1</td>
<td>$18,000</td>
</tr>
<tr>
<td>Field Office/Port-a-Johns/Utilities/etc</td>
<td>wk</td>
<td>$1,200.00</td>
<td>204</td>
<td>$244,800</td>
</tr>
<tr>
<td>Site Security</td>
<td>wk</td>
<td>$1,200.00</td>
<td>204</td>
<td>$244,800</td>
</tr>
<tr>
<td><strong>Engineering/Technical Oversight Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$3,521,910</td>
</tr>
<tr>
<td>Alternative Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$73,556,249</td>
</tr>
<tr>
<td>Contingency (10%)</td>
<td></td>
<td></td>
<td></td>
<td>$7,355,625</td>
</tr>
<tr>
<td>Engineering (20%)</td>
<td></td>
<td></td>
<td></td>
<td>$14,711,250</td>
</tr>
<tr>
<td><strong>Total Alternative 3 Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td>$95,623,124</td>
</tr>
</tbody>
</table>

**Land Use**

This alternative would allow planned future use of the Site to be Unrestricted.

**Community Acceptance**

Community views on the RWP will be obtained during the public comment period, and will be addressed when the RWP is finalized. Community acceptance would be evaluated as part of the RWP process.

This alternative is the most protective of the alternatives but is not economically feasible and does not meet green remediation goals. The alternative removes existing structures and the potential for their...
redevelopment, and also modifies the site grade. The cost does not reflect the additional cost of constructing new buildings on the Site.

2.3 Selected Remedial Action Option

Based on the information available and presented above, the recommended remedy is Alternative 2 Remove Selected Soil, Install Cover System and a Vapor Barrier as it is feasible and would be protective of human health and the environment.

3.0 REMEDIAL WORK PLAN

The remedial work performed at the Site shall be conducted in accordance with the procedures described below and the previously approved Health and Safety Plan (HASP), Community Air Monitoring Plan (CAMP), and Quality Assurance Project Plan (QAPP). The HASP will be updated as needed for this remedy.

3.1 Site Preparation

Mobilization for the remedial action would include, underground utility clearances, placement of necessary construction fencing, traffic controls, support equipment and/or structures, and any or all other non-intrusive activities necessary to secure the work zone(s), required permits, and prepare the site.

Site contractors shall ensure excavation or other necessary equipment be free of contamination upon arrival at the Site.

3.1.1 Health and Safety Plan

The LSS BCP Site-Specific Health and Safety Plan (HASP) was approved by NYSDEC prior to the Remedial Investigation, and is included in Appendix A, and can be used for the remedy along with a detailed Construction HASP for the project will be prepared by the demolition and construction contractor(s) prior to commencing the work. The HASP and the Construction HASP will include directions to the nearest hospital, identify Site hazards and potential Site contaminant exposures, and specifies personal protective equipment (PPE) to be used to safeguard against the identified Site hazards.

3.1.2 CAMP Monitoring

The generic New York State Department of Health (NYSDOH) Community Air Monitoring Plan (CAMP) is included in Appendix B. The CAMP will be implemented during intrusive activities to protect downwind receptors from potential VOCs and air-born particulates emanating from the Site.

3.1.3 Waste Characterization Sampling

Prior to off-site disposal, waste characterization samples of excavated soil will be collected and analyzed, as per the requirements of the selected disposal facility. Discrete and/or composite samples will be collected. These data for disposal are not anticipated to require data validation. The soil stockpile on the Former L&L Site has already been sampled for waste characterization, although some segregation of the soil in the center of the pile is planned so that it can be re-sampled to confirm the volume that needs to be disposed of as hazardous.
The planned waste characterization profile sampling would be consistent with the disposal facility requirements, but are anticipated to be similar to the sample frequency conducted for the disposal options under the Supplemental Remedial Investigation Report dated April 21, 2016.

3.2 Soil Removal Action

3.2.1 Soil Excavation

Excavation areas are described in the Section 2.2 Alternative 2 description and the final excavation depth will vary in each identified removal area and be dependent upon the vertical extent of contaminants at each location, but will not extend below bedrock. The contractor(s) selected for this work will implement and follow a site-specific erosion control plan and storm water management plan.

After the soil is excavated, the base and sidewall of each excavation will be field screened for VOCs and lead (or other contaminants identified by waste characterization samples), with collection of confirmation samples to potentially identify:

1. Areas where additional soil removal is necessary to achieve the RRUSCOs and
2. Excavation areas for construction of building footings that may or may not require management.

3.2.2 Soil Screening Methods

Field screening of soil during all remedial excavation work will be performed by a qualified environmental professional or geologist, and will include visual and olfactory assessments of potential impacts, screening for VOCs using a photo-ionization detector (PID), and screening for lead impacts using an x-ray fluorescence (XRF) analyzer using established methods consistent with the Remedial Investigation. PCB impacts have been observed to be in areas with elevated lead concentrations; therefore, separate field screening for PCBs is not planned.

A representative number of confirmatory laboratory samples will be taken at the excavation limits to confirm whether the RRUSCOs are achieved or assess the residual concentrations left in place (see Section 3.2.8).

The following conservative field screening thresholds in parts per million (ppm) will be utilized to estimate the excavation endpoint in the field:

**Estimated Field Screening Thresholds to Achieve RRUSCOs**

VOCs – 100 (ppm, PID)  
Lead – 300 (ppm, XRF)

3.2.3 Soil Loading and Transport

Soil will be loaded into trucks or roll-off containers that have been lined with polyethylene sheeting and then covered with a solid tarp(s). To the extent practical, excavated soils will be directly loaded into trucks or roll-off containers for transport to a pre-approved waste disposal facility. Direct loading eliminates the need for the temporary stockpiling and associated management of soils on Site.
Should temporary stockpiling of soils become necessary during the remedy, soil stockpiles will be placed on and covered by sufficiently thick plastic sheeting to suppress dust and prevent infiltration from rainfall. Plastic coverings will be secured with weighted objects as appropriate.

All transport of excavated soils from the Site to the receiving disposal facility will be performed by licensed waste haulers under the provisions of 6 NYCRR Part 364, and any other applicable local and Federal regulations. Waste manifest and weigh ticket documentation will be provided for each soil load and will be included in the Final Engineering Report (FER).

3.2.4 Soil Disposal Facility

The soil disposal facility will be selected at a later date and the NYSDEC Project Manager will be informed of this selection. Waste characterization sampling will be conducted in accordance with the requirements of the selected disposal facility.

Excavated soils that meet the RRUSCO may be considered for use as fill on the LSS Site with approval of the NYSDEC Site manager.

Non-contaminated soil, as determined by confirmatory sampling, requiring excavation and removal from the Site, but not intended to be disposed at a permitted waste facility, shall be managed according to 6 NYCRR 375 regulations and the sampling requirements listed in Tables 5.4(e)4 and 10 of DER-10.

3.2.5 Backfill Materials

A Request to Import/Reuse form will be completed and submitted for NYSDEC approval prior to importing backfill materials to the LSS Site. A blank form is provided in Appendix C. The completed form will include documentation of the source of backfill materials from the excavation contractor's material management plan.

* Gravel, rock, or stone consisting of virgin materials may be used without analytical testing provided that it contains less than 10% by weight material which would pass through a size 80 sieve. Finer materials secured from a New York State permitted mine or quarry facility (or equivalent) may also be used following at least one round of characterization samples for the initial 100 cubic yards.

* Material secured from a non-permitted borrow source must be sampled and analyzed for chemical composition consistent with Table 4 of NYSDEC CP-51 and/or Table 5.4(e)10 of DER-10 to show the quality of imported material is consistent with the RRUSCOs.

* Any excess soils generated on-site from excavations for basements, footings, etc. may be reused on-site to the extent practical and placed beneath the cover, consistent with DER-10 Table 5.4(e)4 and Section 5.4(e)9.ii.

* Excess soils that cannot be reused on-site will be properly disposed of off-site.
3.2.6 Confirmatory Endpoint Sampling

Confirmatory endpoint samples will be collected from the excavations to demonstrate that the remedy has achieved the RRUSCOs. Grab sidewall and bottom samples will be collected from each excavation area consistent with DER-10 and include one sample from the bottom of the sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area. Sampling will be performed in accordance with the approved Remedial Investigation QAAP.

The following confirmation sampling is anticipated:

<table>
<thead>
<tr>
<th>Analysis</th>
<th>AOCs (est. number of sampling days)</th>
<th>Estimated Quantity*</th>
<th>QAQC Sample Quantity**</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP-51 list SVOCs by EPA method 8260C</td>
<td>AOC 1 (one with AOC2) AOC 4 (two) AOC 6 (two)</td>
<td>3 SWL; 1 BTM 6 SWL; 2 BTM 18 SWL; 14 BTM <strong>Total 44</strong></td>
<td>3 FD 5 EB 3x2= 6 MS/MSD <strong>Total QAQC 14</strong></td>
</tr>
<tr>
<td>Total lead by EPA method 6010</td>
<td>AOC 2 (one with AOC1) AOC 5a (one with AOC5b)</td>
<td>6 SWL; 3 BTM 3 SWL; 1 BTM <strong>Total 13</strong></td>
<td>1 FD 2 EB 1x2= 2 MS/MSD <strong>Total QAQC 5</strong></td>
</tr>
<tr>
<td>Total RCRA metals by EPA methods 6010 and 7471</td>
<td>AOC 1 (one with AOC2) AOC 3 (four) AOC 4 (two) AOC 6 (two)</td>
<td>3 SWL; 1 BTM 17 SWL; 21 BTM 6 SWL; 2 BTM 18 SWL; 14 BTM <strong>Total 82</strong></td>
<td>4 FD 9 EB 4x2= 8 MS/MSD <strong>Total QAQC 21</strong></td>
</tr>
<tr>
<td>PCBs by EPA method 8082</td>
<td>AOC 3 (four) AOC 5b (one with AOC 5a) AOC 6 (two)</td>
<td>17 SWL; 21 BTM 3 SWL; 1 BTM 18 SWL; 14 BTM <strong>Total 74</strong></td>
<td>4 FD 7 EB 4x2= 8 MS/MSD <strong>Total QAQC 19</strong></td>
</tr>
</tbody>
</table>

*Sidewall samples indicated by SWL; Bottom samples indicated by BTM
**Field Duplicate (FD) 1 per 20; Equipment Blank (EB) 1 per day; MS/MSD 1 per 20 (one MS/MSD is tallied as two samples to be consistent with analytical costs)

Analytical results for confirmation soil samples taken at the soil removal limits will include ASP Level B data deliverables for use in the preparation of Data Usability Summary Reports (DUSR) by a qualified third-party data validator.

Analysis for additional parameters may be included based on results of the waste characterization samples. The waste characterization results will be provided to NYSDEC when available and the post-excavation sampling adjusted accordingly.

3.3 Protective Soil Cover

Alternative 2 could be implemented using the existing buildings and site layout or with more extensive redevelopment and changes to the LSS Site layout. As the redevelopment plan has not yet been finalized, the general plan is anticipated to include 80% of the LSS Site redeveloped with cover consisting of
buildings, pavement or sidewalks, and the remaining 20% of the LSS Site redeveloped with two feet of clean fill for green space, landscaping, and storm drainage infrastructure. Fill material will meet DER-10 requirements and a demarcation layer, such as orange construction fencing, will be installed prior to placement of fill material. No demarcation layer will be installed beneath buildings or pavement.

3.4 SSDS and Vapor Barrier System

Prior to occupancy, an SSDS will be installed within existing and planned buildings. In existing buildings, floors will be checked for damage or unsealed penetrations and those areas will be sealed as needed to limit the flow of subsurface vapors into the building. In new buildings, a vapor barrier will be installed beneath the slab consistent with design plans prepared at that time. Construction design plans for new buildings shall include a permanent vapor barrier system to prevent soil vapors from migrating in to interior building spaces, and the barrier design and specifications will be submitted to NYSDEC for review when available.

Prior to occupancy and after each building’s heating, ventilation, and air conditioning (HVAC) system is installed, indoor and outdoor air sampling as well as monitoring of the SSDS discharge will be performed.

For warehouse type structures, it is anticipated that the SSDS and compliance air sampling as described above will be focused on office areas that do not have high air exchanges due to overhead doors.

4.0 INSTITUTIONAL CONTROLS AND ENGINEERING CONTROLS

4.1 Institutional Controls

Imposition of institutional controls under the BCP will be defined within the approved environmental easement and the SMP. The institutional controls are combined with the engineering controls described in this remedial work plan to constitute the extent of the site remedial actions under the BCP. The institutional controls imposed on this project are anticipated to include the following:

- Requires the site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allows the use and development of the controlled property for restricted-residential and commercial uses provided that the long-term Engineering and Institutional Controls are employed;
- Restricts the use of groundwater underlying the property without necessary water quality treatment for intended use;
- Prohibits agriculture or vegetable gardens on the controlled property;
- Requires that all future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Requires that the potential for vapor intrusion be evaluated for any buildings developed on-site, and any potential impacts that are identified must be monitored or mitigated; and
• Requires compliance with the Department-approved environmental easement and Site Management Plan.

4.2 Operations, Monitoring, and Maintenance of Engineering Controls

This section addresses the operations, monitoring and maintenance, which are necessary to implement the selected site engineering controls that will consist of a protective cover across the exposed surface soil on the site, and a SSDS would be installed within existing and planned buildings prior to occupancy with floor sealing in existing buildings and vapor barrier beneath new buildings.

4.2.1 Protective Cover

Site redevelopment will include a cover, which may consist either of structures such as buildings, pavement and sidewalks, or a two-foot thick layer of soil that meets RRUSCOs.

For areas of where cover will be concrete or asphalt, the material will be of normal design thickness for the proposed use (e.g., parking lot, driveway, roadway), and may have different thicknesses for the different uses and/or traffic types.

The cover will be inspected on an annual basis to ensure it remains intact and effective in preventing direct contact with underlying contaminated media. Annual inspections will be recorded on a Site inspection form and submitted to the NYSDEC. If the owner becomes aware of any damage to the cover, they will repair the damaged cover and inform Chazen so that the repair can be included in the annual report.

4.2.2 Floor Seals and Vapor Barrier

In existing buildings, the owner will check floors for damage or unsealed penetrations on a monthly basis, and those areas will be sealed as needed to limit the flow of subsurface vapors into the building. In new buildings where a vapor barrier is installed beneath the slab consistent with design plans, the owner/s monthly inspection will document any new penetrations and how they were sealed to prevent migration at the penetration point. Monthly inspection findings will be recorded in a written log. Any indication of unusual or problematic performance will be conveyed to the project engineer and the system will be evaluated and maintained or repaired accordingly to ensure system effectiveness. On an annual basis, the project engineer will visually inspect the system.

4.2.3 Annual Sampling

Annual sampling will include collecting an indoor air sample and one SSDS exhaust sample from each building plus one outdoor air sample for VOCs analysis via method TO-15. Annual inspections will be recorded on a Site inspection form and submitted to the NYSDEC with annual sampling results. For warehouse type structures, it is anticipated that the SSDS and compliance air sampling will be focused on office areas that do not have high air exchanges due to overhead doors.
5.0 GREEN REMEDIATION GOALS OF THIS REMEDIAL WORK PLAN

Green remediation principals and techniques will be implemented to the extent feasible in the management of the remedy, as per DER-31.

Considerations for the environmental impacts of treatment technologies and remedy stewardship will be continuously evaluated over the long term operations of engineering controls. Special consideration will be applied to the following:

- Reducing direct and indirect greenhouse gas and other emissions;
- Minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials that would otherwise be considered a waste.

The selected remedy, Alternative 2, would comply with these goals while continuing to meet the remedial action objectives with the protection of human health and the environment.

6.0 IMPLEMENTATION SCHEDULE

Once the developer is identified, it is expected that the Brownfields Cleanup Agreement will be amended to add the developer as a volunteer, and then they will implement the proposed remedial action engineering controls (i.e., soil removal, and installation of cover and vapor barrier). These systems will be operated and maintained according to the Site Management Plan.

While the protective cover and vapor barrier will be maintained according to the SMP until NYSDEC determines that site management is no longer required, it is expected that these engineering controls will remain in effect for the LSS Site.
Appendix A

Health and Safety Plan
Health and Safety Plan
Lower South Street Redevelopment Area
Brownfield Cleanup Program
NYSDEC Site No. C360145
1005, 1009, 1011, 1013 and 1017 Lower South Street
City of Peekskill
Westchester County, New York

May 2016

THE
Chazen
COMPANIES
Engineers
Environmental Professionals
Land Surveyors
Landscape Architects
Planners

Prepared for:

City of Peekskill
840 Main Street
Peekskill, NY 10566

New York State Department of
Environmental Conservation – Region 3
21 South Putt Corners Road
New Paltz, New York

Prepared by:

Hudson Valley Office:
The Chazen Companies
21 Fox Street
Poughkeepsie, New York 12601

Capital District Office
(518) 273-0055

North Country Office
(518) 812-0513
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The Chazen Companies
May 2016
1.0 INTRODUCTION AND OBJECTIVES

The Chazen Companies (Chazen) have prepared this Health and Safety Plan (HASP) for employees of Chazen for the Lower South Street Redevelopment Area Brownfields Cleanup (BCP) Program Site (herein after referred to as the LSS Site) located in the City of Peekskill, Westchester County, New York. This HASP is applicable to the remedial investigation as described in the Work Plan and has been prepared to specifically address potential hazards associated with the proposed scope of work.

The activities, equipment, and procedures described in this plan are designed to provide personal protection against potential environmental hazards which may be present on the work site. This plan includes delineation of site characteristics; establishes an emergency chain-of-command; details the use of basic safety equipment, personal protective equipment, and air monitoring devices, and describes equipment decontamination procedures.

The objectives of this HASP are to:

- Review the physical, chemical, and biological hazards which may be present during the proposed site investigative activities
- Specify the protective measures necessary to control those hazards
- Define emergency procedures.
- Specify training and medical qualification criteria for personnel.

This HASP must be read and understood by all Chazen personnel who perform field activities at the LSS Site.

2.0 PROJECT PERSONNEL & EMERGENCY RESPONSE CONTACTS

The personnel and emergency response contacts associated with the proposed scope of work at the site are presented below.
## DIAL 911 FOR EMERGENCY IN WESTCHESTER COUNTY

<table>
<thead>
<tr>
<th>Title/Project Responsibility</th>
<th>Name</th>
<th>Main Phone</th>
<th>Mobile/Other Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Personnel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Manager</td>
<td>Arlette St. Romain</td>
<td>518-266-7328</td>
<td>518-260-1811</td>
</tr>
<tr>
<td>Field Operations Leader and on-site Health &amp; Safety</td>
<td>William Olsen</td>
<td>845-486-1521</td>
<td>845-532-0602</td>
</tr>
<tr>
<td>Representative</td>
<td>Eric Orlowski</td>
<td>845-486-1520</td>
<td>518-928-5823</td>
</tr>
<tr>
<td>Health &amp; Safety Officer</td>
<td>Kip Score</td>
<td>518-266-0300</td>
<td>518-281-6358</td>
</tr>
<tr>
<td>LSS Site Emergency Contact</td>
<td>James Pinto</td>
<td>914-734-4215</td>
<td></td>
</tr>
</tbody>
</table>

**Emergency Personnel – DIAL 911 In Westchester County**

### Hospital

New York-Presbyterian Hudson Valley Hospital
1980 Crompond Road
Cortlandt, New York
(Hospital Route Map Attached On Next Page)

<table>
<thead>
<tr>
<th>Emergency-Dial 911</th>
<th>(914) 737-9000 non-emergency</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Peekskill Fire Department</td>
<td>Dial 911</td>
</tr>
<tr>
<td>City of Peekskill Police Department</td>
<td>Dial 911</td>
</tr>
<tr>
<td>NYSDEC Spills Hotline</td>
<td>(800) 457-7362</td>
</tr>
<tr>
<td>NYSDEC Regional Office</td>
<td>(845) 256-3000</td>
</tr>
<tr>
<td>Poison Control Center</td>
<td>(800) 336-6997</td>
</tr>
<tr>
<td>National Response Center</td>
<td>(800) 424-8802</td>
</tr>
</tbody>
</table>

### 2.1 Hospital Route

New York-Presbyterian Hudson Valley Hospital is located approximately 2.9 miles from the LSS Site. The travel time from the LSS Site to New York-Presbyterian Hudson Valley Hospital is approximately nine minutes. Directions are provided below and a route plan map is shown on the following page.
Directions to New York-Presbyterian Hudson Valley Hospital:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Drive NORTH on Lower South Street toward Louisa Street</td>
<td>0.6 miles</td>
</tr>
<tr>
<td>2.</td>
<td>Turn RIGHT onto HUDSON AVENUE.</td>
<td>0.7 miles</td>
</tr>
<tr>
<td>3.</td>
<td>Turn LEFT onto WELLS STREET.</td>
<td>0.2 miles</td>
</tr>
<tr>
<td>4.</td>
<td>Turn RIGHT at the 2nd cross street onto CROMPOND ROAD</td>
<td>0.1 miles</td>
</tr>
<tr>
<td>5.</td>
<td>Turn slight RIGHT onto US-202 E / CROMPOND ROAD</td>
<td>1.2 miles</td>
</tr>
<tr>
<td>6.</td>
<td>New York-Presbyterian Hudson Valley Hospital is on the LEFT.</td>
<td></td>
</tr>
</tbody>
</table>

Total estimated time = 9 minutes 2.9 miles
1. Hospital Route Map
3.0 SITE CHARACTERIZATION

3.1 Site Location & Description

The LSS Site is an 11.43-acre property located at 1005, 1009, 1011, 1013 and 1017 Lower South Street in the City of Peekskill, Westchester County, New York. The 1005 and 1009 Lower South Street parcels (the Former L\&L Site) are currently unused land containing stockpiles of soil, rock and other debris from former site operations. The 1011 and 1013 Lower South Street parcels are each developed with one-story steel buildings and are currently utilized by the City of Peekskill for Department of Public Works vehicle parking, as well as other City vehicle and equipment parking/storage. The 1017 Lower South Street parcel contains two buildings constructed by a prior owner in support of their scrap metal / recycling operations; these buildings are vacant and unused.

3.2 Historic Site Uses

The 2.81-acre Former L\&L Site has been vacated by the prior salvage and junkyard owner/operator. This area includes an inactive scale pit, a soil pile (previously estimated at 14,100 cubic yards), a pile of cobbles and boulders, a pile of mixed debris including cobbles, boulders, and concrete, some vehicle parts, and vegetated areas. The Former L\&L Site appears to have been initially developed as a residential site with a junkyard present from 1950.

The 8.79-acre Former Global Recycling Site (formerly owned by Karta Corporation) was previously used for a residence, processing wood waste, and operating a transfer station for construction and demolitions (C\&D) waste. The Former Global Recycling Site contains four single-story, slab-on-grade buildings (building numbering from other reports is used here for consistency). The office building on the western side of 1017 LSS was constructed circa 1981, Building #6 on the eastern side of 1017 LSS was constructed in 1988-1989, Building #4 on the southern end of 1011 LSS was constructed circa 2000, and Building #3 on 1013 LSS was constructed between 2002 and 2004. Two additional buildings (#1 and #2) were constructed on the northern area of 1011 LSS circa 2002 and then demolished between April 2004 and October 2006. Paved driveways lead up to the buildings with paved areas on the fronts sides of the structures.

Various environmental investigations have occurred on the LSS Site since 2011. These investigations identified areas of the LSS Site (including some stockpiled soils) to be impacted with semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals (lead, barium, and mercury) at varying concentrations. While volatile organic compounds (VOCs) have not been identified in soil in areas of planned investigation, VOCs are included in this document as they were identified in soils that were excavated and stockpiled on the Former L\&L Site. While groundwater has not been encountered in the proposed work areas, or generally at the LSS Site except for limited perchoked groundwater, this HASP includes groundwater in case it should be encountered.

3.3 Proposed Project Scope/Site Investigation Activities

The investigative activities proposed at the site include the following:

- Drilling with Geoprobe and/or a hollow-stem auger (HSA) rig, and sampling,
- Soil sample screening with PID and XRF spectrometer, and
- Soil sample collection.

The Chazen Companies
May 2016
4.0 SITE HAZARD EVALUATION AND CONTROL

The potential for exposure to chemical, physical, and mechanical hazards at the LSS Site is considered to be minimal. Hazards which may be encountered at the LSS Site are summarized in Table 1. Additional information pertaining to these hazards is provided in later sections of this HASP.

Table 1: Potential Hazards at the Site

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Hazard Anticipated</th>
<th>Associated Investigative Activities</th>
<th>Comments</th>
<th>Hazard Control Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>Chemicals of Concern (COCs) in Soil including SVOCs, PCBs and Metals</td>
<td>Drilling with Hollow stem augers or Geoprobe*, installation of soil borings, soil sample collection, XRF screening, PID headspace screening</td>
<td>Considered minimal</td>
<td>PPE, Training on Identification of COCs Safety Training &amp; Standard Safety Operations</td>
</tr>
<tr>
<td>Physical</td>
<td>Slip, Trip &amp; Fall</td>
<td>Any site work</td>
<td>Construction and Industrial equipment, and stockpiles on-site</td>
<td>Safety Training &amp; Standard Safety Operations</td>
</tr>
<tr>
<td>Biological</td>
<td>Tick, insect bites, poisonous plants, heat/ cold-related disorders</td>
<td>Any site work</td>
<td>Considered minimal</td>
<td>Safety Training &amp; Standard Safety Operations</td>
</tr>
<tr>
<td>Electrical</td>
<td>Working around utilities</td>
<td>Drilling, soil sample collection</td>
<td>Considered minimal to moderate</td>
<td>Utility Mark Out in planned boring locations, Safety Training &amp; Standard Safety Operations</td>
</tr>
</tbody>
</table>

The Chazen Companies
May 2016
4.1 Hazard Evaluation

4.1.1 Chemical Hazards

Based on available historical information, the primary chemicals of concern (COCs) present in the proposed LSS Site work areas include SVOCs, primarily in the form of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and select metals, including lead and barium. While VOCs have not been identified in soil in areas of planned investigation, VOCs are included in this document as they were identified in soils that were excavated and stockpiled on the Former L&L Site.

Table 2 lists the potential health hazards that may be encountered where these may be encountered in the breathing zone and recommended exposure limits, as well as assessment of all primary exposure routes.

<table>
<thead>
<tr>
<th>COC</th>
<th>Time Weighted Average Airborne Limits</th>
<th>Short-Term Exposure Limit (ppm)</th>
<th>IDLH (ppm)</th>
<th>Primary Routes Of Exposure On Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAHs</td>
<td>0.2</td>
<td>0.1</td>
<td>Not Listed</td>
<td>80  Ca</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2</td>
<td></td>
<td>Inhalation, Dermal</td>
</tr>
<tr>
<td>PCBs</td>
<td>1.0</td>
<td>0.001</td>
<td>Not Listed</td>
<td>5  Ca</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.0</td>
<td></td>
<td>Inhalation, Dermal</td>
</tr>
<tr>
<td>Barium</td>
<td>0.5</td>
<td>0.5</td>
<td>Not Listed</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5</td>
<td></td>
<td>Inhalation, Dermal</td>
</tr>
<tr>
<td>Lead</td>
<td>0.05</td>
<td>0.05</td>
<td>Not Listed</td>
<td>100  Cb</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.05</td>
<td></td>
<td>Inhalation, Dermal</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.1</td>
<td>0.05</td>
<td>Not Listed</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.05</td>
<td></td>
<td>Inhalation, Dermal</td>
</tr>
<tr>
<td>Benzene (VOC)</td>
<td>1.0</td>
<td>0.1</td>
<td>5.0</td>
<td>500  Ca</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1</td>
<td>(1.0 NIOSH)</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Ethylbenzene (VOC)</td>
<td>100</td>
<td>100</td>
<td>125</td>
<td>800</td>
</tr>
<tr>
<td>Toluene (VOC)</td>
<td>200</td>
<td>100</td>
<td>150</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td>Inhalation</td>
</tr>
<tr>
<td>Xylenes (VOC)</td>
<td>100</td>
<td>100</td>
<td>150</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td>Inhalation</td>
</tr>
</tbody>
</table>

1. Some of the most common VOCs are listed above. A conservative permissible exposure limit of 5 ppm for VOCs will be used in the field as measured continuously using a portable photoionization detector (PID)


Ca: NIOSH has identified the compounds as a potential occupational carcinogen

Cb: Ceiling value. Typically a 15-minute TWA that must not be exceeded at any point during the workday

IDLH: Immediately Dangerous to Life & Health

Skin designation indicates the potential for dermal absorption

OSHA PELs are legally enforceable.

RELS and TLVs are published as recommended guidelines
COCs present on the subject property are expected to vary based on location (e.g., source area, soil stockpiles, etc.).

Project investigation activities will involve potential exposure to soil and groundwater. Given the nature of the proposed project activities, the potential for site personnel to encounter the LSS Site COCs during performance of the activities outlined in the Work Plan is considered to be minimal as specified PPE and air monitoring (described later in this plan) will be utilized.

Symptoms of exposure to the COCs are summarized in Table 3.

**Table 3: General Signs and Symptoms of Exposure to COCs**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Signs &amp; Symptoms of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Hydrocarbons (including SVOCs)</td>
<td>Irritation to eyes, skin, nose, respiratory system; headache, nausea, staggered gait; fatigue, anorexia, lassitude (weakness, exhaustion); dermatitis</td>
</tr>
<tr>
<td>Lead</td>
<td>Pain, muscle weakness, abdominal pain, nausea, vomiting, diarrhea, constipation, a metallic taste.</td>
</tr>
<tr>
<td>PCBs</td>
<td>Respiratory tract symptoms, such as cough and tightness of the chest, gastrointestinal effects including anorexia, weight loss, nausea, vomiting, and abdominal pain, mild liver effects, and effects on the skin and eyes, such as chloracne, skin rashes, and eye irritation.</td>
</tr>
<tr>
<td>VOCs (general)</td>
<td>Irritation eyes, skin, nose, respiratory system; headache, nausea; fatigue, anorexia</td>
</tr>
</tbody>
</table>

4.1.2 Physical Hazards
Site work which occurs in the vicinity of drilling and/or excavating equipment and machinery presents a general safety hazard. Uneven ground surfaces and the presence of debris on the site presents a concern for slip, trip, and fall incidents.

The potential for heat-related stress during site work exists. Heat stress may occur even in moderate temperatures and may present any or all of the following symptoms:

**Heat Rash** — Result of continuous exposure to hot humid air and chafing clothes. Heat rash is uncomfortable and decreases the ability to tolerate heat.

**Heat Cramps** — Result of the inadequate replacement of body electrolytes lost through perspiration. Sign include severe spasms and pain in the extremities and abdomen.
**Heat Exhaustion** – Result of the increased stress on the vital organs of the body in the effort to meet the body's cooling demands. Signs include shallow breathing, pale, cool, moist skin, profuse sweating, dizziness, and listlessness.

**Heat Stroke** – Result of overworked cooling system. Heat stroke is the most serious form of heat stress. Body surfaces must be cooled and medical help must be obtained immediately to prevent severe injury and/or death. Signs of heat stroke include red, hot, dry skin, absence of perspiration, nausea, dizziness, confusion and strong rapid pulse. Coma and death can result from heat stroke.

The following any or a combination of the following actions can be taken to prevent heat stress:

- Replace body fluids (water and electrolytes) lost through perspiration. Solutions may include a 0.1% salt and water solution or commercial mixes such as Gatorade and Squench. A fluid/electrolyte replacement will be used as necessary to minimize fluid loss.

- Provide cooling devices to aid in the natural body ventilation. Cooling occurs through evaporation of perspiration and limited body contact with heat absorbing protective clothing. Fans and air conditioners can assist in evaporation.

- Provide hose-down mobile shower facilities, where feasible, to cool protective clothing and reduce body temperature.

- Conduct activities early in the morning or evening during very hot weather.

- Provide shelter against heat and direct sunlight to protect personnel.

The potential for cold stress during site work exists. Working outside in cold temperatures presents a concern for cold-related disorders as described below:

**Hypothermia** – Symptoms of hypothermia include shivering, slurred speech, disorientation, and loss of coordination. Advance stages of hypothermia include feelings of warmth and reckless behavior.

**Frost Bite** – Symptoms of frostbite include cold feelings, red color to the skin, tingling, swelling, and pain. In advanced stated of frostbite, the skin will appear white in color.

To avoid cold stress, take the following precautions:

- Provide a shelter area where warmth is available.

- Wear thermal clothing applied in layers.

- Remain active in order to maintain blood circulation throughout the body.

- Maintain warm/hot drinks in the support zone.

Physical hazards are anticipated to be a concern for all site activities.
4.1.3 Biological Hazards
It is anticipated that the site field work will be performed in the fall, winter and spring months which presents some potential for biological hazards to be present. Biological hazards include poison ivy, snakes, ticks, mosquitoes, and other pests. Given the developed nature of the site, biological hazards are expected to be low, but may still be present during site activities.

4.1.3.1 Tick-Borne Disease
Ticks can carry a number of diseases. In the United States, these diseases include:

- Lyme Disease

- Ehrlichiosis

- Rocky Mountain Spotted Fever (throughout the United States but most prevalent in the east)

*Lyme Disease* - The disease commonly occurs in New York State in the spring and summer and is transmitted during extended attachment (minimum 24 hours) of an infected tick. Symptoms of Lyme disease usually emerge approximately two weeks after exposure and may include a rash or a peculiar red spot, like a bull’s eye, which expands outward in a circular manner. The victim may have recurring headaches, weakness, a stiff neck, swelling and pain in the joints, and eventually, arthritis.

*Ehrlichiosis* - The disease also commonly occurs in New York State in the summer and is similarly transmitted by the bite of infected ticks. Symptoms of ehrlichiosis include more immediate muscle aches, fever, joint aches, and flu-like symptoms, but there is typically no skin rash.

*Rocky Mountain Spotted Fever (RMSF)* - This disease is also transmitted via the extended bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (*Rickettsia rickettsii*) becomes reactivated and can infect humans. The primary symptom of RMSF is the sudden appearance of a moderate-to-high fever. The fever may persist for 2 to 3 weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated.

4.1.3.2 Other Biological Hazards
Poisonous plants, such as poison ivy and sumac, maybe present on the site and present a hazard for site personnel. Signs and symptoms of exposure to such poisonous plants include itching, burning, redness, rash, blistering and swelling.

Snakes may be present on the site property and present the potential for snake bites. Poisonous snakes are not expected to be present on the site, however, even bites from non-poisonous snakes can cause adverse health symptoms such as redness, swelling, and allergic reaction.

Site personnel may be exposed to mosquitoes and/or black flies during site work. While the presence of mosquitoes and/or black flies is not anticipated to be a significant health and safety concern, bites can cause adverse health symptoms such as redness, swelling, and allergic reaction.
4.1.4 Electrical Hazards
Drill rigs will be used on the site to install soil borings. The presence of overhead utilities and
underground obstacles poses a hazard if equipment contacts them. As indicated in Table 1, electrical hazards are considered to be a concern for the installation of borings on the site.

4.1.5 Radiological Hazards
A handheld x-ray fluorescence (XRF) spectrometer will be used to field screen lead content in soil.
The Niton Model XL2 GOLDD XRF will be rented by Chazen and maintained by the rental company,
EcoRental Solutions. Chazen personnel who operate the XRF have had training in the equipment
operation and its safety procedures.

The Niton Model XL2 analyzer contains an x-ray tube which emits radiation only when the user
turns the x-ray tube on. When the x-ray tube is on and the shutter is open, as during a
measurement, the analyzer emits a directed radiation beam. Reasonable effort will be made to
maintain exposures to radiation as far below dose limits as is practical. This is known as the ALARA
(As Low as Reasonably Achievable) principle. For any given source of radiation, three factors will
help minimize radiation exposure: shorter time, greater distance, and increased shielding. Specific
precautions include:

- Avoid holding the front of the analyzer when the x-ray tube is energized and the shutter
  is open. Never point the instrument at yourself or anyone else when the shutter is open
  and the x-ray tube is energized. Never look into the path of the primary beam.

- Ensure sample sizes are larger than the XRF’s measurement window.

- There are no X-ray tube specific US Department of Transportation (DOT) or International
  Air Transport Association (IATA) radiation regulations regarding shipping the Niton XL2
  analyzer. It is recommended that the analyzer be shipped in its carrying case and an over-
  pack to protect the sensitive measuring equipment inside the analyzer. The battery pack
  is disconnected from the analyzer prior to shipment.

- The XRF is secured when not in use.

4.2 Hazard Control

4.2.1 Hazards Associated With Soil Sampling
Soil sampling consists of the installation of soil borings using a hydraulic, direct-push drilling rig or
hollow stem auger rig and the collection of soil samples from the soil borings for analysis. The
hazards associated with the collection of soil samples are considered to be minimal and include
dermal exposure to soil contaminants, inhalation exposure to contaminants, and slip, trip, and fall
hazards from scattered debris and irregular walking surfaces.

All drillers must possess required state or local licenses. The driller is responsible for the safe
operation of the drill rig. The driller is responsible for providing and following his own HASP, which
must be reviewed and approved by Chazen. The driller is responsible for ensuring that the drill
rig is in proper condition and is properly used. Rig conditions will be evaluated daily prior to the
start of work.

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Prior to any subsurface sampling or remedial activities, underground utilities must be located using facility plans and the Dig Safely NY Program (1-800-962-7962). In addition, a utility markout of the planned boring areas is planned. These protective measures will be taken to minimize the potential health and safety risks associated with investigation activities near underground utility lines.

If drilling activities are conducted in the vicinity of overhead power lines, the rig should be positioned such that no part of the drilling rig is within OSHA’s maximum clearance values, which are provided in the following table:

<table>
<thead>
<tr>
<th>Nominal AC Line Voltage (kV)</th>
<th>Minimum Clearance Distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50</td>
<td>10</td>
</tr>
<tr>
<td>51 to 200</td>
<td>15</td>
</tr>
<tr>
<td>201 to 350</td>
<td>20</td>
</tr>
<tr>
<td>351 to 500</td>
<td>25</td>
</tr>
<tr>
<td>501 to 750</td>
<td>35</td>
</tr>
<tr>
<td>751 to 1,000</td>
<td>45</td>
</tr>
<tr>
<td>Over 1,000</td>
<td>Per Utility Owner</td>
</tr>
</tbody>
</table>

To control dermal exposure during soil sampling activities, a minimum of Modified Level D PPE should be worn as described in Section 6.0 of this HASP.

Based on available information, VOCs are not a COC in the planned work areas. However, as a standard precaution, the potential for inhalation exposure to airborne COCs will be evaluated and controlled during site activities as a general safety precaution.

Air monitoring will be performed during site work to evaluate airborne concentrations of VOCs and particulates to which site workers may be exposed. Air monitoring control measures are discussed in Section 6.0 of this HASP. A Community Air Monitoring Program (CAMP) is also required for this site, although the CAMP does not address site health and safety.

General safety precautions will be employed on-site to control for slip, trip, and fall hazards.

4.2.5 Physical Hazards

4.2.5.1 Biological Hazards

Ticks

The best way to prevent tick borne diseases is to avoid tick bites. Preventative measures to reduce the potential for tick bites include, but are not limited to, the following:

- Where possible, land scheduled for eventual clearing should be cleared of brush and overgrown vegetation in advance of environmental investigation.
- Wearing long pants and long sleeved shirts
- Tucking shirts into pants. Tucking pants into socks or boots, or using tape to close the opening where they meet.

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• Using an EPA approved insect repellant or arachnicide (pesticide) which is effective for
ticks, such as DEET (N,N-diethyl-m-toluamide) or pyrethrin. Be sure to heed all
precautionary information, and be aware that some people are sensitive to these
chemicals.

• Wearing light colored clothing so that a tick can be seen more easily.

• Changing clothes when you return from an area where ticks may be located.

• Showering to wash off any loose ticks, followed by self-examination for ticks.

• Throughout the work day, perform Tick Checks and Removal Procedures as follows:
  • Check clothing for ticks. If you find a tick, do a more thorough tick check.
  • Inspect parts that bend (back of knee, between fingers and toes, underarms),
    pressure points where clothing presses against skin (underwear elastic, belts,
    neck); other common areas (belly button, around or in ear, hairline, and top of
    head).
  • Once indoors, do a final tick check and change clothes.
  • If you are in a tick infested area or an area known to have disease carrying ticks,
    perform checks on a more regular basis
  • Remove unattached ticks promptly.
  • Remove attached ticks are removed using fine pointed tweezers:
    1. The mouth parts of the tick are grasped with the tweezers as close to the skin
       as possible
    2. Apply firm steady pressure upward until the tick releases - do not jerk, twist,
       squash or squeeze the tick
    3. Clean the wound and the tweezers with an antiseptic

Do not use petroleum jelly, nail polish remover, or prick or burn the tick. These actions can cause
infected secretions to enter the wound.

Plants

Preventative measures will be implemented to avoid contact with poisonous plants on the site
property. These measures will include, but are not limited to, the following activities:

• Wear clothing that covers arms and hands if possible

• Frequently wash exposed skin

• Avoid skin contact with objects or protective clothing that have touched the plants
• Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance

• If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

Snakes

All personnel walking through vegetated areas must be aware of the potential for encountering snakes. If a snake bite occurs, apply a constriction band and wash the area around the wound to remove any unabsorbed venom.

4.2.5.2 Heat Stress

When feasible, the most stressful site activities should be performed during the coolest parts of the day. Site workers will be instructed to stay hydrated throughout the day. An intake of 5 to 7 ounces of fluids every 15 to 20 minutes is recommended.

Site workers will be monitored for the signs and symptoms of heat stress during work activities. The signs and symptoms of heat stress are dizziness, vomiting, hot, dry skin, rapid heartbeat, throbbing headache, rash, cramps, chest pain, muscle spasms, pain in the hands, feet, or abdomen, loss of coordination, and decreased cognitive ability.

Site workers expressing or demonstrating any of these symptoms will be immediately excused of their duties and instructed to rest in a cool environment. Site work/rest cycles will be determined based on ambient conditions and based on guidance pertaining to heat stress provided by OSHA and NIOSH.

4.2.6 General Health and Safety Controls

4.2.6.1 Communications System

Telephones will be available on site and both on-site and off-site project personnel will be accessible for communication. If there is a lack of cell phone signal at the site, then personnel should locate the closest public payphone prior to work commencement. Personnel should also be trained in the use of standard hand signals for health and safety. Personnel in the work zone will use the following standard hand signals:

• Hand gripping throat ----- Can't breathe
• Grip partner's wrist or both hands around waist ----- Leave area immediately
• Hands on top of head ----- Need assistance
• Thumbs up ----- OK, I am all right, I understand
• Thumbs down ----- No, negative
4.2.6.2 Basic Safety Equipment

Safety equipment will be kept on site for monitoring and responding to emergency situations. Basic safety equipment will include, but is not limited to, the following:

- ABC type fire extinguishers
- First Aid kits
- Air Monitoring Equipment (for particulates and VOCs)
- Reference books containing basic first-aid procedures and information

4.2.6.3 Safe Work Practices

All Chazen personnel and all subcontractors working on site are expected to follow established safe work practices for their specialties (i.e., excavators, surveying, etc.). The need to exercise caution in the performance of specific work tasks is frequently made more acute due to:

- Weather conditions
- Restricted mobility and reduced peripheral vision caused by protective gear
- The need to maintain the integrity of the protective equipment

Work at the LSS Site will be conducted in accordance with established protocols and guidelines for the safety and health of all involved. General safety practices employed at the LSS Site will include but are not limited to the following:

- No smoking, eating, or drinking in an exclusion zone or before personnel decontamination. Ingestion of contaminants is the second most likely means of introducing toxic substances into the body.
- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Personal protective equipment is never 100% effective, so all personnel must minimize contact with potentially contaminated material. Do not place equipment on potentially contaminated ground. Do not sit or kneel on potentially contaminated material. Avoid standing in or walking through puddles or stained soil.
- Avoid heat and other work stresses related to the wearing of protective equipment and clothing. Work breaks should be scheduled (and actually taken) to prevent stress-related accidents or fatigue.
- As often as possible, the handling of contaminated materials should be done remotely. Every effort should be made to identify the contents of containers found on-site before they are handled.

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- Personnel must be observant of not only their own immediate surroundings, but also of others.

- Rigorous contingency planning and dissemination of plans to all personnel minimizes the impact of rapidly changing safety protocols in response to changing site conditions.

- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication. Avoid field work while feeling ill. Company policies prohibit use of alcohol while working.

The site Health and Safety Officer or their designee will maintain project Health and Safety records in a safe and secure manner. Since there is no on-site location to maintain the Health and Safety records, they will be retained in Chazen’s Poughkeepsie office.
5.0 PERSONAL PROTECTIVE EQUIPMENT

Site workers will be provided with the appropriate personal protective equipment (PPE) and will be trained on the use of this equipment. PPE will be selected to provide an appropriate level of protection against known and reasonably anticipated site hazards. Given the available data, the level of PPE selected for the LSS Site is a modified Level D which will include the items listed in Table 4.

<table>
<thead>
<tr>
<th>Area</th>
<th>PPE Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Hard Hat (OSHA approved)</td>
</tr>
<tr>
<td>Feet</td>
<td>Work Boots (steel-toed, unless conducting electromagnetic survey)</td>
</tr>
<tr>
<td>Skin</td>
<td>Nitrile Gloves</td>
</tr>
<tr>
<td>Hearing</td>
<td>Ear Plugs/Hearing Protection</td>
</tr>
<tr>
<td>Vision</td>
<td>Safety Glasses</td>
</tr>
</tbody>
</table>

Table 4: Site-Specific PPE Components

The level of PPE should be continually evaluated and will be modified as necessary, depending on site conditions. If upgraded PPE appears necessary, the scope and necessity of work must be examined, and if the exposure cannot be avoided the level of PPE must be upgraded to one of, or a combination of the following levels:

**Level C protection consists of:**

(a) Full-face air-purifying respirator  
(b) Tyvek or Poly-tyvek coveralls  
(c) Chemical-resistant gloves taped to coveralls  
(d) Chemical-resistant boots taped to coveralls

**Level B protection consists of:**

(a) Level C protection for the body, plus  
(b) Positive pressure Self-contained Breathing Apparatus (SCBA) or a tethered cascade breathing system.

It will be the responsibility of the Health and Safety Officer to insure that all personnel and subcontractors are knowledgeable of the level of personal protection required in all work situations. Further, it is the obligation of the Health and Safety Officer to see that proper equipment is worn and work rules are observed. All subcontractors are responsible for supplying their personnel with the necessary equipment.
6.0 AIR MONITORING

Air monitoring for volatile organic compounds and particulates will be periodically performed in the work area breathing zone during outdoor site activities. Monitoring will be performed with a hand-held PID and particulate meter. Results will be compared to exposure values listed in Table 2 and appropriate responsive action taken, as needed, including moving to upwind locations, reducing scale or pace of work advance, or adjustments of PPE.

Periodic air monitoring will also be conducted as described in the CAMP, to document ambient concentrations of particulates and VOCs at the downwind perimeter of the work zone and at an upwind location.

7.0 TRAINING & MEDICAL SURVEILLANCE

7.1 Personnel Safety Training

As part of Chazen policies and in conformance with OSHA requirements for personnel conducting hazardous waste investigation, or assessments on site where they may be exposed to hazardous wastes, Chazen field personnel working on this site shall have received a minimum of 40 hours of comprehensive health and safety training (29 CFR 1910.120) and an annual 8 hour refresher course.

All workers must recognize and understand the potential hazards to health and safety that are associated with the investigation activities and must be thoroughly familiar with programs and procedures contained in the safety plan.

The objectives of Chazen training program, for employees involved in hazardous site activities are:

- To make workers aware of the potential hazards they may encounter.
- To provide the knowledge and skills necessary to perform the work with minimal risk to the health and safety of the workers.
- To make workers aware of the purpose and limitations of safety equipment.
- To ensure that workers can safely avoid or escape from emergencies.

7.2 Medical Surveillance

All Chazen personnel meeting applicable exposure criteria are currently involved in a medical monitoring program, in accordance with 29 CFR 1910.120.

Based on the proposed scope of work, the potential for exposure to site COCs is considered to be negligible following the health and safety procedure described herein. Medical monitoring for common COCs is performed as part of the existing Chazen medical monitoring program. Any provisions for alterations to the existing medical surveillance program will be made by the Health & Safety Officer based on the site characterization and job hazard analysis.
8.0 WORKING ZONE

The primary work area around the drill rig and sampling vehicles will have a nearby area for decontamination (primarily hand washing). The LSS Site investigation work is not expected to be hazardous or to necessitate the establishment of Exclusion, Contamination Reduction, or Support Zones; however, the following sections are provided, should these zones be needed.

8.1 Exclusion Zone

An Exclusion Zone will be established around areas where work activities will occur. The Exclusion Zone will be cordoned off while work is in progress. Entry to and exit from this area will be provided only to those persons directly involved in the work activities and only if the prescribed level of personal protection is worn.

The personnel working in the Exclusion Zone will be the health and safety officer, work crews, and specialized personnel. All personnel within the Exclusion Zone must wear the level of protection required by the site safety plan. All personnel in the Exclusion Zone will be HAZWOPER health and safety trained.

8.2 Contamination Reduction Zone

If needed, a Contamination Reduction Zone (CRZ) will be established at the perimeter of the exclusion zone, where personal decontamination will take place. The CRZ is a transition zone between contaminated and uncontaminated areas of the site.

When personnel, equipment, or materials suspected to be contaminated are taken out of the exclusion zone, they will be properly contained, or decontaminated in the CRZ.

8.3 Support Zone

The Support Zone is considered the area outside the CRZ. The Support Zone will be reserved for the support vehicle and for clean equipment storage. It is separated from the CRZ, and is considered a "Clean" area. Only uncontaminated or decontaminated personnel or materials may enter this zone from the CRZ.

The support vehicle serves as the communications center, clean storage area, and source of emergency assistance for field operations. Certain safety equipment (i.e. fire extinguisher, first aid kit, etc.) are stored in the support vehicle.
9.0 DECONTAMINATION

Use of mechanized equipment (see QAPP) and PPE serve to minimize worker contact with site contaminants. However, procedures may be necessary to remove and/or minimize contaminants that have accumulated on equipment and personnel.

9.1 Personnel and Equipment Decontamination

All personnel and equipment leaving the work zone must be decontaminated. Decontamination procedures prior to leaving Level "D" areas will consist of brushing loose soil from clothing and equipment, washing equipment and clothing with water and a mild detergent. Disposable gloves, scoops, paper towels and any Tyvek suits will be discarded in trash receptacles provided within these areas. All wastes generated in Level "D" areas will be bagged and disposed of on site without any additional restrictions.

If Level C working conditions are required, a decontamination work area will need to be established. If needed, this will involve establishing a plastic-lined work table, and plastic liner to "catch" wash solutions and contaminated soil. When exiting the work zone, workers will enter the decontamination zone. Instruments, sample containers, and reusable equipment will be placed on a plastic covered table. These items will be cleaned with the appropriate cleaning solutions. The workers will then decontaminate their protective clothing. Disposable items will be discarded in trash receptacles which will be provided within the decontamination area.
10.0 EMERGENCY/CONTINGENCY PLAN

10.1 Personnel Roles, Lines of Authority, and Communication

The Health & Safety Officer (HSO) or the on-site designee is the primary authority for directing site operations under emergency conditions. All Health and Safety related emergency communications both on and off site will be directed through the Health and Safety Officer.

10.2 Site Evacuation

The emergency response capabilities of the local authorities and agencies will be assessed prior to the initiation of work.

Prior to the evacuation of any off site area, the Exclusion Zone and the CRZ will be expanded. Monitoring of the expanded CRZ will be conducted to determine if offsite evacuation is truly necessary.

When the HSO determines that conditions may actually warrant the evacuation of downwind residences and commercial operations, local agencies will be notified and assistance requested. Designated personnel will initiate evacuation of the immediate off site area without delay.

All work crews should be aware of surrounding conditions including the wind conditions while working outdoors. When conditions warrant moving away from a work site, the field crew will relocate up wind. If site access is restricted, or limited in any way, the crew may be instructed by the HSO to evacuate the site rather than move upwind, especially if an upwind withdrawal moves the field crew away from an acceptable escape route.

If conditions warrant a site evacuation, the field crew will proceed upwind of the work site and will notify the HSO or their designated representative. If the decontamination area is upwind and more than 500 feet from the work site, the crew will pass through the decontamination area to remove their outer suits. Following decontamination, the field crew will proceed to the support vehicle and an assessment of the situation will be made by the HSO, or their designated representative. As soon as it is practical, and as additional information about site conditions is received from the field crew, the situation will be communicated to the Health and Safety Supervisor, Health and Safety Manager, the project manager, and if applicable the appropriate local emergency response agencies.

10.3 Emergency Medical Treatment and First Aid

First aid will be available to any person injured. A First Aid Kit will be on hand. The injured person may be transported to a medical center for further examination and treatment. The preferred transport method is a professional emergency transportation service; however, if this option is not readily available or would result in excessive delay, other transport is authorized.

Under no circumstances should an injured person transport themselves to a medical facility for treatment, no matter how minor the injury may appear.

If an injury occurs in the Exclusion Zone, provisions for decontamination of the victim will be made. However, if injuries are deemed life-threatening, then normal decontamination
procedures may be dispensed with. In such cases arrangements will be made with the emergency response personnel to provide the necessary containment or decontamination.

10.4 Spill Response

Should an equipment release occur from a vehicle or equipment being used on the LSS Site, the spill will be reported to NYSDEC Spill hotline within 48 hours, unless the spill is

1. Less than 5 gallons,

2. Contained and controlled,

3. Not impacting water or land, AND

4. Cleaned within 2 hours.

The LSS Site is not a registered Petroleum Bulk Storage facility.
Appendix B

Community Air Monitoring Plan
New York State Department of Health
Generic Community Air Monitoring Plan

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

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

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

Community Air Monitoring Plan

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

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.
Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

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

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

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

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

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

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

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m³) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m³ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m³ of the upwind level and in preventing visible dust migration.

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

June 20, 2000
Appendix C

NYSDEC Request to Import/Reuse Fill or Soil Form
*This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.*

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that would pass a size 80 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.5 (other material), no chemical testing needed.
SELECTION 3 CONT’D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the “If Ecological Resources are Present” column in Appendix 5,

---

SELECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

Revised August 2014
The information provided on this form is accurate and complete.

__________________________    _________________________
Signature                                      Date

__________________________
Print Name

__________________________
Firm

Revised August 2014
Lower South Street Redevelopment Area
Brownfield Cleanup Program
Peekskill, Westchester County
Site No. C360145
November 2017

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation
DECLARATION STATEMENT - DECISION DOCUMENT

Lower South Street Redevelopment Area
Brownfield Cleanup Program
 Peekskill, Westchester County
 Site No. C360145
 November 2017

Statement of Purpose and Basis

This document presents the remedy for the Lower South Street Redevelopment Area site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Lower South Street Redevelopment Area site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

- Reducing direct and indirect greenhouse gases and other emissions;

- Increasing energy efficiency and minimizing use of non-renewable energy;

- Conserving and efficiently managing resources and materials;

- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;

- Maximizing habitat value and creating habitat when possible;
• Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

• Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of contaminant source areas, including:

• Soils exceeding the 6 NYCRR Part 371 hazardous criteria for lead;

• Soils that exceed a cleanup level for PCBs of 1 part per million (ppm) in the surface soils (0 to 2 feet) and 10 ppm in subsurface soils; and

• Soil that creates a nuisance condition, as defined in Commissioner Policy CP-51.

Approximately 2,083 cubic yards of contaminated soil will be removed from the site.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. On-site soil which does not exceed SCOs for restricted-residential use and protection of groundwater may be used to backfill the bottom of the excavation areas.

4. Stockpile Removal

Removal and off-site disposal of several material stockpiles. Approximately 3,300 cubic yards of contaminated soil will be removed from the site. Confirmatory samples will be completed beneath the footprint of the stockpiles to ensure that the material beneath the stockpile meets the soil cleanup objectives (SCOs) for restricted residential use.

5. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with 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). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, cement, paved surface parking areas, sidewalks, building foundations and building slabs.
6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- Restrict the use of groundwater as a source of potable or process water, without necessary quality treatment as determined by the NYSDOH or County DOH; and

- Require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A site management plan is required, which includes the following:

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

Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

Engineering Controls: The cover system discussed in Paragraph 5.

This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

- Descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;

- A provision for evaluation of the potential for soil vapor intrusion if any existing buildings are reoccupied and if any new buildings are developed on the site, including provision for implementing actions recommended to address exposure related to soil vapor intrusion;

- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 5 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
o Provisions for the management and inspection of the identified engineering controls;

o Maintaining site access controls and Department notification; and

o The steps necessary for the periodic reviews and certifications of the institutional and/or engineering controls.

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

o Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s). The plan includes, but is not limited to:

o Procedures for operating and maintaining the system(s); and

o Compliance inspection of the system(s) to ensure proper O&M as well as providing the data for necessary reporting.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

November 22, 2017

Date

George Heitzman, Director
Remedial Bureau C
SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Field Library
Attn: Lauren Wolven
4 Nelson Avenue
 Peekskill, NY 10566
Phone: 914-737-1212

NYSDEC Region 3
Attn: Please call for an appointment
21 S. Putt Corners Road
New Paltz, NY 12561
Phone: 845-256-3154
Receive Site Citizen Participation Information By Email

Please note that the Department’s Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Lower South Street Redevelopment Area site is located at 1005, 1009, 1011, 1013 and 1017 Lower South Street in an urban area in the City of Peekskill. The site is situated east of South Street, south of Travis Lane, and west of Route 9.

Site Features: The northwestern portion of the site (1005 and 1009 Lower South Street) includes a scale pit, a soil pile, a pile of cobbles and boulders, a pile of mixed debris including cobbles, boulders, concrete, and some vehicle parts, and vegetated areas. The southern-central portion of the site (1011, 1013 and 1017 Lower South Street) contains four unoccupied buildings; an office building and three others. Paved driveways lead up to the buildings, with paved areas on the front side of the structures. Two additional buildings were constructed on the northeastern section of the site but were demolished between April 2004 and October 2006.

Current Zoning and Land Use: The site is zoned M-2A: Industrial Design District and is currently not in use. The City plans to rezone the site to be consistent with the intended use, mixed-use commercial (e.g., hotel, sports facility) and may include multi-family housing. The adjacent properties are of mixed use including industrial, commercial and residential. The nearest residential properties are within 1,000 feet to the east and north of the site.

Past Use of the Site: Historic uses of 1005 and 1009 Lower South Street (Former L&amp;L Salvage) include a junkyard and residential. Historic uses of 1011, 1013 and 1017 (Former Global Recycling) include a residence, waste wood processing, and solid waste transfer station for construction and demolition waste.

Site Geology and Hydrogeology: Soil includes both natural and fill materials. Bedrock typically exists between 1 and 13 feet below ground surface (bgs). Fill depths range from 1 foot to 15 feet thick, and consist of brick, concrete, wood, rock, asphalt, coal/ash, tile and glass. Sand, silt and rocks underlie the fill.

Limited perched groundwater has been encountered in the overburden at depths ranging from approximately 2 feet below ground surface (bgs) to 13 feet bgs. Bedrock groundwater in the area is expected to flow to the west toward the Hudson River based on topography.

A site location map is attached as Figure 1.
SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- sub-slab vapor
6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

- benzo(a)anthracene
- benzo(a)pyrene
- benzo(b)fluoranthene
- benzo[k]fluoranthene
- chrysene
- dibenz[a,h]anthracene
- indeno(1,2,3-CD)pyrene
- barium
- cadmium
- copper
- lead
- mercury
- polychlorinated biphenyls (PCB)
- MTBE (methyl-tert-butyl ether)
- tetrachloroethene (PCE)
- trichloroethene (TCE)
- dichloroethene (cis-1,2-)
- vinyl chloride
- methane
- hydrogen sulfide

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.
6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: Soil and perched groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs) and pesticides. Based upon investigations conducted to date, the primary contaminants of concern include SVOCs, metals and PCBs.

Soil - Polycyclic aromatic hydrocarbons (PAHs), including benzo(a)anthracene (up to 23 parts per million (ppm)), benzo(a)pyrene (up to 18.7 ppm), benzo(b)fluoranthene (up to 23.3 ppm), benzo(k)fluoranthene (up to 7.6 ppm), chrysene (up to 12.7 ppm), dibenzo(a,h)anthracene (up to 1.5 ppm) and indeno(1,2,3-cd)pyrene (up to 11.6 ppm), metals, including barium (up to 680 ppm), cadmium (up to 17.7 ppm), copper (up to 15,400 ppm), lead (up to 11,700 ppm) and mercury (up to 1.87 ppm) and polychlorinated biphenyls (PCBs) (up to 8 ppm) in the site soil above restricted residential use soil cleanup objectives (SCOs). Volatile organic compounds (VOCs) and pesticides were not detected above restricted residential use SCOs in the soil.

Data does not indicate any off-site impacts in soil related to this site.

Perched Groundwater - One perched groundwater sample at the former Global Recycling property collected in 2012 indicated the presence of methyl tert-butyl ether (MTBE) (up to 24 parts per billion (ppb)) and SVOCs, including phenol (up to 11 ppb), naphthalene (up to 14 ppb), benzo(a)pyrene (up to 12 ppb), benzo(b)fluoranthene (up to 12 ppb), benzo(k)fluoranthene (up to 11 ppb), chrysene (up to 11 ppb) and indeno(1,2,3-cd)pyrene (up to 9.3 ppb) in excess of standards. During the 2016 investigation, perched groundwater was encountered in only one soil boring and the water met standards for VOCs, SVOCs, PCBs and pesticides. Sodium (71,500 ppb) and manganese (1,070 ppb) were detected above standards in this sample.

Data does not indicate any off-site impacts in perched groundwater related to this site.

Soil Vapor and Sub-Slab Vapor - Eight soil vapor samples were collected from the northern end of the 1011 parcel in 2011. Cis-1,2-dichloroethene (DCE) up to 305 µg/m³ and vinyl chloride up to 1,303 µg/m³ were detected in the soil vapor on this parcel. Two soil vapor samples were collected from the area northwest of the building located on the 1013 parcel. Trichloroethylene (TCE) up to 12.8 µg/m³ and vinyl chloride up to 48.6 µg/m³ were detected in soil vapor along with compounds associated with petroleum and automotive fluids on this parcel. Historically, methane up to 8.9% and hydrogen sulfide up to 2 ppm, were also detected in soil gas. During the 2016 investigation, two soil vapor samples were collected from the 1013 parcel and two soil vapor sample was collected from the former L&R Site (1005 and 1009 Lower South Street). Tetrachloroethylene (PCE) up to 130 µg/m³ and trichloroethylene (TCE) up to 36.5 µg/m³ were detected in soil vapor on the 1013 parcel. Sub-slab vapor samples were obtained from beneath...
the un-occupied buildings on the 1011, 1013 and 1017 parcels. One of the buildings, on the
1017 parcel, showed PCE at 35.9 ug/m³, TCE at 6.99 ug/m³ and vinyl chloride at 7.92 ug/m³.
No concurrent indoor air samples had been collected at that time.

Six soil vapor samples were collected around the perimeter of the site in August 2017 to evaluate
the extent of soil vapor contamination. While PCE was detected in one of the six samples near
the northwest corner of 1009 Lower South Street at a concentration of 44.8 ug/m³ PCE or other
chlorinated VOCs were not detected in the remaining perimeter soil vapor samples. The results
obtained in soil vapor samples and other environmental samples to date indicate soil vapor
intrusion is not a concern for off-site buildings. However, groundwater conditions are unknown
at this site. If additional information becomes available, additional sampling may be needed in
the future to evaluate the potential for soil vapor intrusion concerns in off-site buildings.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related
contaminants. Chemicals can enter the body through three major pathways (breathing, touching
or swallowing). This is referred to as exposure.

Access to the site is unrestricted. Persons who enter the site could contact contaminants in the
soil by walking on the soil, digging or otherwise disturbing the soil. Contaminated groundwater
at the site is not used for drinking or other purposes and the site is served by a public water
supply that obtains water from a different source not affected by this contamination. Volatile
organic compounds in soil vapor (air spaces within the soil) may move into overlying buildings
and affect the indoor air of buildings. This process, which is similar to the movement of radon
gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion.
The potential exists for people to inhale contaminants in indoor air due to soil vapor intrusion in
any future on-site buildings or if existing buildings become re-occupied. Environmental
sampling to date indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection
process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to
pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or
mitigate all significant threats to public health and the environment presented by the
contamination identified at the site through the proper application of scientific and engineering
principles.

The remedial action objectives for this site are:

**Groundwater**

**RAOs for Public Health Protection**

- Prevent ingestion of groundwater with contaminant levels exceeding drinking
  water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.
Soil

RAOs for Public Health Protection
- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection
- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection
- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Stockpile Removal, Cover, SSDS and Institutional Controls remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
• Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;

• Maximizing habitat value and creating habitat when possible;

• Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

• Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

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• Soils exceeding the 6 NYCRR Part 371 hazardous criteria for lead;

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Approximately 2,083 cubic yards of contaminated soil will be removed from the site.

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5. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with 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). Substitution of
other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, cement, paved surface parking areas, sidewalks, building foundations and building slabs.

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- Restrict the use of groundwater as a source of potable or process water, without necessary quality treatment as determined by the NYSDOH or County DOH; and

- Require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A site management plan is required, which includes the following:

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

Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

Engineering Controls: The cover system discussed in Paragraph 5.

This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

- Descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;

- A provision for evaluation of the potential for soil vapor intrusion if any existing buildings are reoccupied and if any new buildings are developed on the site, including provision for implementing actions recommended to address exposure related to soil vapor intrusion;
A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 5 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);

- Provisions for the management and inspection of the identified engineering controls;
- Maintaining site access controls and Department notification; and
- The steps necessary for the periodic reviews and certifications of the institutional and/or engineering controls.

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

- Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s). The plan includes, but is not limited to:

- Procedures for operating and maintaining the system(s); and
- Compliance inspection of the system(s) to ensure proper O&M as well as providing the data for necessary reporting.
The City’s vision for this area is summarized below, the result of numerous plans, meetings, studies and charrettes that have taken place since 1998.

Development proposals should:
- Be financially feasible and sustainable (align with current market demand)
- Create jobs (all skill levels)
- Augment tax base
- Improve infrastructure (roadway geometry/site lines, water and sewer lines, curbing, storm drains, sidewalks, lighting, landscaping, streetscapes)
- RemEDIATE contamination
- Capitalize on Hudson River assets and proximity to train station

Re-use recommendations from prior studies:
- Expand industrial and construction uses, while attracting a more diverse mix of uses
- Flex space buildings with manufacturing, retail, arts and recreation
- Hotels, conference centers, indoor and outdoor recreation centers, sports facilities
- Year round facility for indoor training, team sports and individual sports such as biking, running, and track and field.
- Multifamily housing with retail and artistic endeavors in mixed use buildings
- Destination retail and entertainment uses
- Terraced buildings, green roofs/gardens, rooftop restaurants, with increase the allowable building height
- River-oriented recreation, capitalizing on the proximity of the waterfront trail
Lower South Street Zoning
2018

M-2B:

The City-owned parcels that are south of Louisa Street and east of Lower South Street are zoned M-2B, and subject to Design Guidelines (see attached Zoning Map).

As-of-right uses: (all in fully enclosed buildings):
- Restaurants, retail stores
- Business, professional, governmental offices and schools.
- Personal services
- Museums, artist studios and galleries, theaters
- Indoor recreation uses, health clubs, martial arts & dance studios
- Amusement centers
- Manufacturing, assembling, processing and storage of products (< 5% of lot for outdoor storage, all covered)
- Warehouse and distribution facilities
- Printing businesses
- Car wash facilities
- Auto repair (minor and major) and auto body

Special Permit uses: (all in fully enclosed buildings):
- Day care centers
- Construction businesses
- Storage and sales of building materials
- Hotels
- Adult uses
- Tattoo studios

Maximum building height is 4 stories or 48 feet, and maximum lot coverage for all buildings is 60%.