Remedial Action Work Plan

Ebenezer Plaza 1
Brownfield Cleanup Program

NYSDEC Site No. C224240

94 New Lots Avenue
Brooklyn, Kings County, New York

June 29, 2017 Draft
August 31, 2017 Final
March 8, 2018 Revised Final

THE Chazen COMPANIES®
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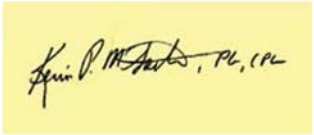
I Kevin P. McGrath certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Report was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



Kevin P. McGrath, PG, CPG

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EXECUTIVE SUMMARY

The Chazen Companies (Chazen), on behalf of BCP Volunteer Ebenezer Plaza Owner, LLC have prepared this Remedial Action Work Plan (RAWP) for submission to the New York State Department of environmental Conservation (NYSDEC) to satisfy the requirements of the New York State Brownfields Cleanup Program (BCP) for Site No. C224240. This RAWP was prepared in accordance with NYSDEC DER-10 guidance and specifies the activities that will be undertaken during Site preparation and development to mitigate contaminant impacts identified at the Ebenezer Plaza 1 Site (hereinafter referred to as the "Site") located at 94 New Lots Avenue in Brooklyn, New York. This RAWP considers the future planned Site use and is based upon the findings presented in Chazen's *Remedial Investigation Report* (RIR) dated June 2017 and *December 2017 Supplemental Investigation Report* (SIR) dated January 16, 2018. The proposed remedy is intended be protective of public health and the environment by mitigating the historic environmental impacts documented in the RIR.

The proposed remedial actions are intended to be protective of public health by mitigating exposures to contaminants consistent with the proposed future use of the Site. The planned future Site use includes development that meets NYSDEC Part 375 Restricted-residential land use criteria. Consequently, a Track 2 (NYSDEC Part 375 Restricted-Residential Soil Cleanup Objectives [RRUSCOs]) will be used as the primary remedial action objective (RAO) for soil. However, the proposed remedy may not fully mitigate groundwater impacts or fully eliminate the potential for off-site migration of impacted groundwater, therefore, an overall Track 4 clean-up will be achieved. Additionally, Protection of Groundwater Soil Cleanup Objectives (POGSCOs) will be used as the RAO for soil in select areas of the Site beyond the anticipated construction excavation limits.

The Site is a 1.26-acre currently zoned M1-1: Manufacturing District. It is located in a dense urban area with highly diverse uses including a multiple commercial Sites including a plaza, community garden, residences, surface railway and railyard, a community center, recreation park and fields, a nursing home, and commercial warehouses. Former Site uses included used car sales, auto repair, auto wrecking, dry cleaning, a coal and coke distribution business, and a gasoline filling station. Historic mapping indicates vehicle repair garages on Site as early as 1928, with a dry cleaner and gasoline filling station on the eastern Site area prior to 1980.

Site buildings were demolished during 2017 leaving behind approximately two feet of brick rubble. Preparation of the Site for new construction requires the removal of the rubble, then the excavation, at a minimum, of 40 to 45 percent of the Site area to a depth of 6.5- feet below ground surface (bgs) with the remaining area excavated to approximately 14 feet bgs or greater to accommodate basement areas. The excavation will be conducted in phases, beginning with the removal of the first 6.5-feet of soil across the Site. The volume equivalent of the entire Site to a depth of 6.5 feet is approximately 13,250 cubic yards (yd^3). The excavation will be extended

vertically, as necessary and as practical to meet the RRUSCOs and POGSCOs, based on field screening and endpoint soil sampling results.

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. A representative number of confirmatory samples will be taken at the excavation limits for laboratory analysis to confirm the RRUSCOs are achieved. These samples will also quantify the magnitude of Site contaminants left in place.

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.

After soil removal and post-excavation sampling confirms achievement of the soil clean-up objectives, a new multi-story affordable housing complex will be constructed on the Site with a sub-slab depressurization system (SSDS) and/or vapor barrier system to protect future occupants from potential soil vapors. The remedial efforts, new construction, and vapor mitigation system(s) will be protective of human health and the environment from residual environmental impacts for the life of the buildings.

1.0 INTRODUCTION

This RAWP describes the remedial activities that will be implemented to allow the redevelopment of the Site. The Site is identified as NYS BCP number C224240 and is comprised of one city block of developed land bounded in the Brownsville section of Brooklyn, Kings County, New York. The Site is bounded by New Lots Avenue, Sackman Street, Powell Street, and Hegeman Avenue. The Site is approximately 55,500 square feet and was previously occupied by seven one to three story structures constructed circa 1930 with a total footprint of 32,250 square feet; these structures were demolished during 2017. The Site is currently an open area predominantly covered with two feet of brick rubble and portions of the original blacktop surface

Site preparation and remedial action plans for the Site include the demolition of all existing structures, removal of all blacktop, concrete, and floor slabs, shallow excavation and removal of on-Site soils across the entire property, followed by the redevelopment of the property by the construction of a new multi-story affordable housing complex with street-level retail spaces and a church. Based on the June 2017 RIR and December 2017 SIR, shallow soils are expected to consist primarily of urban fill impacted with volatile organic compounds (VOCs), chlorinated volatile organic compounds (CVOCS), semi-volatile organics compounds (SVOCs) and metals (arsenic, barium, cadmium, copper, and lead).

VOCs, CVOCs, and perfluorinated compounds (PFCs) were also identified in the groundwater. Concentrations of VOCs, CVOCs, and PFCs greater than applicable Standards, Criteria, and Guidance were reported in property boundary wells. The PFCs appear to be a pass-through issue not directly related to the Site. However, although no off-site data is available for confirmation, historical on-site releases of VOCs and CVOCs have occurred and have likely migrated off-site.

The proposed remedial actions are intended to be protective of public health by mitigating exposures to contaminants consistent with the proposed future use of the Site. The planned future Site use includes development that meets NYSDEC Part 375 Restricted Residential Use criteria. A Track 2 (NYSDEC Part 375-6.8(b)) clean-up will be used as the remedial action objective (RAO) for soil. However, the proposed remedy does not mitigate groundwater impacts or fully eliminate the potential for off-site migration of impacted groundwater; consequently, an overall Track 4 clean-up will be achieved.

Attainment of the RAO will be demonstrated by field screening and post-excavation confirmatory laboratory analysis of samples and/or the use of engineering and administrative controls to prevent direct contact with residual impacted materials.

1.1 Site Description

A detailed description of historical background information including the Site history and uses, area geology and hydrogeology, evaluation of impacts, delineation of areas of concern, and

assessment of remedial options, are included RIR (**Appendix A1**) and SIR (**Appendix A2**). A brief summary follows:

1.1.1 Site Location

The Site is a 1.26-acre currently zoned M1-1: Manufacturing District. It is located in a dense urban area with highly diverse uses including multiple commercial Sites including a plaza, community garden, residences, surface railway and railyard, a community center, recreation park and fields, a nursing home, and commercial warehouses. A Site Location Map is attached as **Figure 1.** The Site and surrounding areas are shown on an orthophotograph included as **Figure 2**. A copy of the NYC digital tax map is included as **Figure 3**.

1.1.2 Property Uses

The Site is currently an open, fenced-in area being prepared for redevelopment. Former commercial site structures were demolished in 2017. As of December 2017, the Site was covered with brick rubble and portions of the existing blacktop. s

1.1.2.1 Past Property Uses

Former Site uses included a used-car auto dealership with an automotive storage yard, auto repair and maintenance shops, auto wrecking, dry cleaning, a coal and coke distribution business, a church, a newspaper distributor, a cabinet installation company, and a gasoline filling station. Historic mapping indicates vehicle repair garages on Site as early as 1928, with a dry cleaner and gasoline filling station on the eastern Site area prior to 1980.

1.1.2.2 Current Property Use

The Site is currently a vacant parcel. All previously existing above grade structures/parking lots, driveways, and walkways have been removed in preparation for remedial action.

1.1.2.2 Proposed Future Property Uses

Conceptual redevelopment plans for the Site includes the construction of a new multi-story affordable housing complex, with street-level retail spaces and a church.

1.1.3 Environmental Setting

This section provides information on the Site geology, soils, hydrogeology, and surface water resources.

1.1.3.1 Geology

Site soils consist of variable thicknesses of miscellaneous urban fill overlying a relatively well sorted fluvial sand deposit. As of December 2017, the existing grade across the majority of the Site had been raised by approximately one to two feet by a layer of brick-rubble from recent building demolition activity.

- The urban fill consists of a black and/or blackish orange silty-Sand with variable amounts of broken brick, concrete, and asphalt. The fill ranges from less than 1 foot to an observed maximum of 13.5-feet in thickness.
- The sand is characterized as mostly medium-sized, with lesser but varying amounts of fine and coarse-sized sand. Borings completed at the Site did not encounter bedrock at depths up to 25 to 27 feet.

The Surficial Geologic Map of New York (Lower Hudson Sheet, 1989) identifies the native soils as glacially derived outwash sand and gravel. The Geologic Map of New York (Lower Hudson Sheet, 1970), indicates that bedrock is greater than 200 feet below grade and likely to be significantly deeper (up to 2,000 feet below grade).

Available soil boring logs are included in the attached RIR and SIR, and stratigraphic cross-sections (referenced on **Figure 4a**) describing subsurface conditions are provided as **Figure 7a and 7b**. .

1.1.3.2 Hydrogeology

Groundwater is at approximately 15 feet below grade across the Site with minimal seasonal variation. The hydraulic conductivity of the native soils is unknown but expected to range from at 10^{-2} to 10^{-3} cm/sec based on grain size distribution. Consequently, groundwater flows slowly at less than 16 feet per year towards the southeast under the observed on-site hydraulic gradient of 0.0016 ft/ft.

1.1.3.3. Surface Water Resources

No surface water bodies are present on the Site. The nearest surface water body is Fresh Creek, a tidal tributary to Jamaica Bay, located approximately 4,000 feet southeast of the Site.

1.1.4 Environmental History

Multiple previous investigations, underground storage tank closures, and limited remedial actions have been conducted on the Site. These are summarized in the February 2017 Remedial Investigation Report prepared by Chazen.

1.2 Nature and Extent of Contamination

The RIR prepared by Chazen in June 2017 is provided in **Appendix A1**. The investigation objective was to gather data to assess soil and groundwater quality, delineate the nature and extent of contaminant impacts for use in a fate and transport assessment, and gather additional geologic and groundwater information for use in evaluating appropriate remedial methods and designing a remedial action. Investigation objectives were met through the collection and laboratory analysis of soil and groundwater samples. Limited in-situ chemical oxidation (ISCO) remedial measures were also implemented to address impacted groundwater areas.

The SIR report prepared by Chazen is provided in **Appendix A2**. Expanding upon the Site data record, the investigation objectives were to further delineate soil impacted by VOCs in a known groundwater plume area, verify native soils were not impacted by metals in the overlying urban fill, and provide a site-wide baseline assessment of soil vapor quality.

The results summarized in the RIR and SIR indicate metals, petroleum-range VOCs and SVOCs, and CVOCs are the contaminants of concern (COCs) for the Site:

- Metal impacts (arsenic, barium, cadmium, copper, and/or lead) were detected in near-surface, urban fill soils at four locations that exceeded RRUSCOs. Significant metal concentrations were not detected in the underlying sand, indicating the identified metal impacts are presumably confined to the urban fill which is found throughout the Site.

- Petroleum-range VOC impacts were found in soils at and just below the water table in a limited area within the eastern half and north-central part of the Site. These impacts are related to Spill No. 09-06674, the source of which is located at the former 650 Powell Street building location. While most VOCs were reported below RRUSCOs, trimethylbenzene exceeded this SCO at four locations downgradient of the spill. The December 2017 SIR confirmed the extent of these impacts and identified VOCs exceeded POGSCOs in nine locations.

- Dissolved-phase petroleum-range VOCs exceeding standards are present within a plume area beneath the eastern half of the Site, with the highest total VOC concentrations found near and downgradient of Spill No. 09-06674. As of 2016, total reported VOC concentrations ranged from 4 µg/L to 1,103 µg/L within the estimated plume area.

- CVOCs were found in soil vapor throughout the Site with total concentrations ranging from 10.63 $\mu g/m^3$ to 17,897 $\mu g/m^3$. The distribution of CVOCs in the soil vapor suggests a relatively small and concentrated pocket of CVOCs exists in soil within the southwestern quadrant of the Site.

Maps of the soil sampling locations and the results that exceed RRUSCOS and POGSCOs listed in 6 NYCRR Part 375-6.8(b) are included as **Figure 4a** and **Figure 4b**, respectively. Groundwater sampling locations and results that exceed Part 703 groundwater standards in are shown on included as **Figure 5**. Soil vapor sampling locations and the distribution of total CVOC concentrations are provided in **Figure 6**.

2.0 REMEDIAL ACTION ALTERNATIVES

2.1 Remedial Goals and Remedial Action Objectives

The intent of the remedial action for the Site is to protect human health and the environment through administrative or engineering controls that will mitigate residual impacts and 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 Site.

The Remedial Action Objectives (RAOs) for the Site are:

- SOIL: Prevent direct contact or ingestion of impacted soils;
- GROUNDWATER: Prevent direct contact or ingestion of impacted groundwater
- AIR/VAPOR: Prevent inhalation of residual volatile organic vapors identified in the subsurface

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

- Removal of all on-Site soils from grade to a minimum of two feet below the final grade elevations of planned building floor slabs with confirmatory sampling;
- Removal of all on-Site soils that exhibit hazardous characteristics (none have been identified, but if discovered they will also be removed);
- Removal of identified "hot-spots" or those discovered during the excavation/removal process that are below the base of planned excavations that exceed RRSCOs.
- Removal of on-Site soil at or below the water table that exceeds POGSCOs, to the extent practical.
- Installation of site-wide composite cover system (clean-fill and/or concrete slabs;
- Administrative controls the prevent the extraction and/or use of on-site groundwater; and,
- Installation of an active Vapor Mitigation System beneath all new building floor slabs.

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 to the Site-specific conditions, 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 Report, an AA was performed to assess reasonable and appropriate Site remediation options and to select an appropriate alternative for mitigation the Site and to provide for the contemplated redevelopment use of the Site. Two alternatives determined to be relevant were considered and evaluated. These are summarized as follows and the selected alternative is identified.

Alternative 1
No Further Action

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

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

This alternative was considered as a baseline in the assessment process, and will not 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.

Alternative 2

Excavation and Disposal of Impacted Soil, New Construction with Sub-slab Depressurization System (SSDS) and/or a Vapor Barrier System; monitoring compliance with environmental easement and SMP requirements

Under Alternative 2, Site buildings would be demolished, and soil not meeting RRUSCOs and POGSCOs would be excavated and disposed off-Site to the extent possible. The entire Site will be capped with a vapor barrier and impermeable concrete floor slabs, at a minimum. Following the excavation remedy phase, soil vapor conditions would be reevaluated to assess the need for an SSDS to mitigate soil vapor contaminants. An environmental easement would be issued as an institutional control to restrict Site use options (e.g., restricted-residential use, no groundwater usage).

This alternative is the best alternative because it is protective of human health or the environment, meets the remedial goals and objectives, is consistent with the planned redevelopment of the Site, and is economically feasible.

The analysis of this alternative is presented below.

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 soil removal action would prevent potential contact with soil contamination, and the selected vapor mitigation system would prevent the exposure of future Site occupants to residual VOC vapor present beneath the building foundation.

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 Site would comply with the SCGs as the vapor barrier would mitigate exposure to remaining impacted soil vapor.

Long-term Effectiveness and Permanence

The vapor mitigation system would be effective in the long term, as exposures would be prevented. The 2013-2015 ISCO groundwater treatments significantly reduced VOC concentrations in the subsurface, which decreases the potential for residual VOCs to volatilize

and collect in vapor beneath the building foundation. The vapor mitigation system would reduce potential exposures to sub-slab vapor.

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 physical removal of soils will reduce the volume of Site impacts associated with toxicity and mobility of contaminants at the Site. Remaining VOC impacts are expected to attenuate naturally over time.

Short-Term Impact and Effectiveness

This alternative would be immediately effective as the concrete slab-on grade floors and soil vapor barrier system would prevent exposure to Site soils and to VOC-impacted soil vapor. This alternative would be implemented coincident with Site redevelopment activities, and would be effective in achieving the Site RAOs. The vapor mitigation system would remain in place for the life of the building.

Implementability

The soil removal action and vapor barrier alternative is technically feasible as it would be easily implementable. It would include the physical removal of impacted soil, one engineering control, and institutional controls (environmental easement, SMP). The environmental easement required to leave residual contamination in place at concentrations greater than Unrestricted Use SCOs would include a land use restriction (e.g., 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 relative to the planned future use of the Site.

Land Use

The vapor mitigation alternative is consistent with the planned future use of the Site for residences on the second floor and commercial uses, as exposure to the remaining subsurface contamination would be reduced.

The vapor barrier system would be considered an engineering control 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 RAWP will be obtained during the public comment period, and will be addressed when the RAWP is finalized. Community acceptance will be evaluated as part of the RAWP process. It is expected that the planned future use of the Site would be highly beneficial to the local community and easily gain acceptance.

2.3 Selected Remedial Action Option

Based on the information available and presented above, the recommended remedy is Alternative 2 - Excavation and Disposal of Impacted Soil, New Construction with Vapor Mitigation System.

3.0 REMEDIAL MEASURES WORK PLAN

The remedial work performed at the Site shall be conducted in accordance with the procedures described below and the appended Health and Safety Plan (HASP), Community Air Monitoring Plan (CAMP), Field Sampling Plan (FSP), and Quality Assurance Project Plan (QAPP).

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, temporary utility installation/connections, and any or all other non-intrusive activities necessary to secure the work zone(s), required permits, and prepare the site.

Prior to mobilization, the buildings will be razed including floor slabs and footings that are to be replaced and removed for off-site disposal. A temporary demarcation barrier will be placed on the site and a thin layer of crushed/broken brick from the demolition will be placed on the barrier. The barrier and cover will limit potential exposure to the soils and suppress dust or fugitive VOC emissions during the scheduled delay between demolition activity and commencement of the site remediation.

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

A Site-Specific Health and Safety Plan (HASP) is provided in **Appendix B.** This HASP is specific to the remediation activities to be performed**.** A detailed Construction HASP for the project will be prepared by the demolition and construction contractor(s) prior to commencing the work. The CHASP will include the attached HASP. The attached plan includes directions to the nearest hospital, identifies 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 C.** The CAMP will be implemented during intrusive activities to protect downwind receptors from potential VOCs and air-born particulates emanating from the Site with the following modifications:

- Air monitoring stations will be established at the Site perimeter and used to collect data during the work day following the commencement of Site excavation work. Monitoring will be performed whenever intrusive activities including load-out of impacted soils is being performed on-site.

- The air monitoring data will be provided to NYSDEC digitally.

3.1.3 Waste Characterization Sampling

Waste characterization profile sampling was performed during the May 2017 supplemental site investigation. The results indicated that no hazardous concentrations or characteristics were present in the on-site soils. Sufficient data is available to characterize the waste streams for off-site disposal. Additional samples may be required during the remdial action based on the requirements of the selected disposal facilities and the quantities of materials generated during the remedial action.

The results of the waste profile sampling are included in the June 2017 investigation report in Appendix A1.

3.2 Soil Removal Action

3.2.1 Soil Excavation

Preparation of Site for new construction requires the excavation of 13,260 cubic yards of impacted urban fill, across the entire 55,000 square feet of the property to an average depth of 6.5-feet below ground surface (bgs). The excavation will be extended to approximately 14 feet below grade over 31,550 ft² to accommodate basement areas. Stratigraphic cross-sections included in the RIR have been revised and are attached as **Figures 7a and 7b**.

The calculated volume of soil that has to be removed to achieve the RAOs is estimated at 18,000 yd^3, not including anticipated hot spot removals, and includes the following:

- Removal of 13,000 yd^3 of urban fill across the entire Site to achieve the RRUSCOs;
- Removal of 4,500 yd^3 of VOC-impacted soil related to Spill No. 09-06674 in the eastern and northern regions of the Site to achieve the POGSCOs.
- Removal of approximately 500 yd^3 of an isolated pocket of CVOC-impacted soil within the southwestern Site quadrant to achieve the POGSCOs.
- Approximately 10,000 cubic yards of non-impacted soils will also be excavated and removed to achieve final ground elevation grades for construction building grades. These soils will be tested for chemical and geotechnical suitability as backfill and either reused on site as backfill or removed for off-site disposal.

The planned excavation areas relative to the Site redevelopment and the RAOs are provided as **Figures 8a and 8b**, which include soil volume estimates for each delineated construction and remedial area.

The excavation will be conducted in phases, beginning with the removal of the urban fill to the base of the fill. To the extent practical, the fill will be excavated and directly loaded for removal and off-site disposal.

Once all impacted urban fill has been removed and confirmed by post-excavation sampling, non-impacted native soils will be removed down to the planned target depths for the planned final grades of the new constructions. This phase will include the removal of non-impacted soils located above the water table in the planned basement excavation sublevels and the area above the delineated soils that exceed the PoG-SCOs.

Once the planned final grades have been achieved for the building basement areas and the area above the delineated soil source area below the water table, the excavation will be extended as necessary to remove soils at or below the water table that exceed the PoG-SCOs.

The vertical and areal extent of impacted soils below the water table that exceed the protection of groundwater standards were delineated and the limits of excavation predetermined. Along the outermost edge of the delineated zone, impacts extend to approximately 19-20 feet below current grade and thicken toward the center of the impacted zone extending to 24 feet below current grade near the location of the former USTs. Soil excavation in this area will be continued until no obvious visual or olfactory evidence of impacts or PID measurements exceeding 100 ppm are observed at the base or sidewalls of the excavation.

Post excavation soil samples and groundwater samples will be collected and analyzed to document the final soil and water quality at the completion of the excavation. Based on the

analytical results, a sustained-release oxidizer agent may be added to the backfill to increase the dissolved oxygen content of the groundwater and stimulate biological degradation of residual impacts to the soil and/or groundwater. The selection and quantities of the materials to be used will be determined and approved by NYSDEC prior to backfilling.

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.

At a minimum, soils will be screened using an off-set grid spacing of approximately 25 feet. A representative number of confirmatory laboratory samples will be taken at the excavation limit to confirm the RRUSCOs are achieved. These samples will also confirm the magnitude of Site contaminants left in place.

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)

Weathered petroleum impacts are expected to be encountered. Soils exhibiting significant nuisance characteristics (staining or odors) will also be excavated for disposal regardless of field screening results.

3.2.3 Soil Loading and Transport

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 course of 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 established at a later date and will be reported to the NYSDEC Project Manager. The minimum total quantity of waste soil to be disposed off-site as part of this remedy is approximately 8,100 cubic yards. Additional excavation of soils to be managed under this RAWP is expected but cannot be quantified. Waste characterization sampling will be conducted in accordance with the requirements of the selected disposal facility. The approximate limits and depths of excavations and volumes of impacted soils that must be removed to achieve the RAOs for the proposed clean-up are included as **Figures 8a and 8b**.

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 Table 4 of the NYSDEC CP-51 Soil Cleanup Guidance document. Excavated soils that meet the restricted residential SCO may be considered for Site fill with approval of the DEC Site manager.

3.2.5 Backfill materials

Documentation of the source of backfill materials to be used on-Site shall be provided in the excavation contractor's material management plan. This plan will be submitted to NYSDEC for approval prior to importing materials to the site.

Gravel, rock, or stone consisting of virgin materials will be used without analytical testing. Finer materials secured from a New York State permitted mine or quarry facility (or equivalent) will also be used without additional testing.

Material secured form an non-permitted borrow source must be sampled and analyzed for chemical composition in according to Table 4 of NYSDEC CP-51 and/or Table 5 of DER-10 to show the quality of imported material is consistent with the RRUSCOs.

Any excess native soils generated on-site from deep excavations (basements, footings, etc.) that were not advanced to remove "hotspots", may be reused on-site to the extent practical. Excess native soils that cannot be reused on-site may be staged for reuse as backfill on the adjacent EP-2 Site (BCP 224241).

3.2.6 Monitoring Well Decommissioning

Existing monitoring wells on the Site will be destroyed during Site demolition and excavation activities and therefore will be considered decommissioned at such time.

3.2.7 Water Treatment Contingency

Stormwater will be managed on-Site in open retention pits and allowed to infiltrate into the on-Site soils. If groundwater is encountered during the excavation of basement areas or footers, a skid mounted portable carbon filter system will be utilized to pre-treat the groundwater to remove potential VOCs or SVOCs prior to discharge of the groundwater to retention pits.

In the event that the quantity of storm water or groundwater exceeds the infiltration capacity of the on-Site soils, a temporary sewer discharge permit will be obtained from NYC DEP so that excess quantity can be discharged to the sewers. A permit issued by the local sewer authority would be secured prior to discharging any construction waste water to the sewer system.

Excavation and removal of the estimated 4,200 cubic yards of soils that exceed the PoG-SCOs at and below the water table may result in the generation of a significant quantity of groundwater that will need to be managed during the removal action.

It is estimated that between 250,000 to 600,000 gallons (30,000 to 50,000 gallons per day) of groundwater may need to be managed during the impacted soil removal action. It is assumed that groundwater will be removed, treated on-site, and discharged to surface pits or the City of New York combined sewer system under permit with DEP. Due to the high permeability of the soils and volume of the available storage pits (the south tower basement area could hold more than 300,000 gallons of water at one time if needed), managing the groundwater during excavation below the water table may require installation and operation of a water table depression system.

Due to the documented potential for area-wide PFCs impacts to be mobilized to the site during an aggressive dewatering operation, as a contingency; a design/evaluation of dewatering minimization and/or optional remedies for the PoG impacted soils may be performed and provided to NYSDEC in advance of implementation.

3.2.8 Confirmatory Endpoint Sampling

Confirmatory endpoint samples will be collected from the base of the excavation(s) to demonstrate that the remedy has achieved the RRUSCOs. Confirmation sampling will be completed in general accordance with DER-10 Section 5.4 except as noted.

SIDEWALL SAMPLES

- As the entire property is being excavated to a preset depth, one sidewall sample will be collected near the base of the excavation for each 30 linear feet along the entire 990 foot (33 samples) property boundary cut-wall (if possible). One grab sample and one 5 point composite sample will be collected for each 30 feet of side wall. Grab samples will be analyzed for VOCs by EPA method 8260C. Composite samples will be

analyzed for SVOCs by method 8270D and arsenic, barium, cadmium, copper, and lead by EPA method 6010c.

- Additional sidewall samples will be collected from deeper interior excavations advanced to remove hotspots and planned basement areas (estimated to be an additional 10-15 samples)

BASE SAMPLES

Historical and Supplemental sampling indicates that SVOCs and PP-Metals are contained in the shallow urban fill.

- In areas where the urban fill has been completely removed and no deeper "hotspots" were identified and excavated, one grab sample and one 5-point composite sample will be collected for each 2,500 ft^2 of the final excavation footprint. Samples will be collected from the 0 to 6 inch depth interval. VOC samples shall be collected from the 6 to 12 inch depth interval if more than 24 hours has passed following the excavation.

- If urban fill is left in place, or deeper excavations are advanced to remove hotspots, one grab sample and one 5-point composite sample will be collected for each 900 ft^2 of the excavation footprint for those areas only following the same sampling protocol described above.

Additional waste characterization profile samples will be collected during the removal action based on the requirements of the selected disposal facilities. Analysis for additional parameters may be included in the confirmatory sampling based on results of the waste characterization samples. The waste characterization results will be provided to NYSDEC when available.

3.2.9 QA/QC and Data Validation

Sampling will be performed in accordance with the final approved Quality Control Project Plan. A copy of the QAPP is included in **Appendix E**.

Analytical results for 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 (DUSRs) by a qualified third-party data validator.

3.3 Vapor Mitigation System

New buildings are planned to be constructed over the entire footprint of the Site. Construction design plans shall include installation of a vapor mitigation system (VMS) consisting of a sub-slab depressurization system (SSDS) will be utilized to prevent soil vapors from entering interior

building spaces. The design and specifications for the SSDS will be submitted to NYSDEC for review when available.

4.0 OPERATIONS, MONITORING, AND MAINTENANCE

The Vapor Mitigation System (VMS) is an engineering control that may require operation, monitoring, or maintenance, depending on the final system design. A VMS that incorporates an active SSDS would require long-term operation, maintenance, and monitoring until proven to be no longer necessary.

The VBS is not considered an engineering control relative to the RAWP but is included to satisfy local building ordinance.

5.0 INSTITUTIONAL AND ENGINEERING CONTROLS

5.1 Institutional Controls

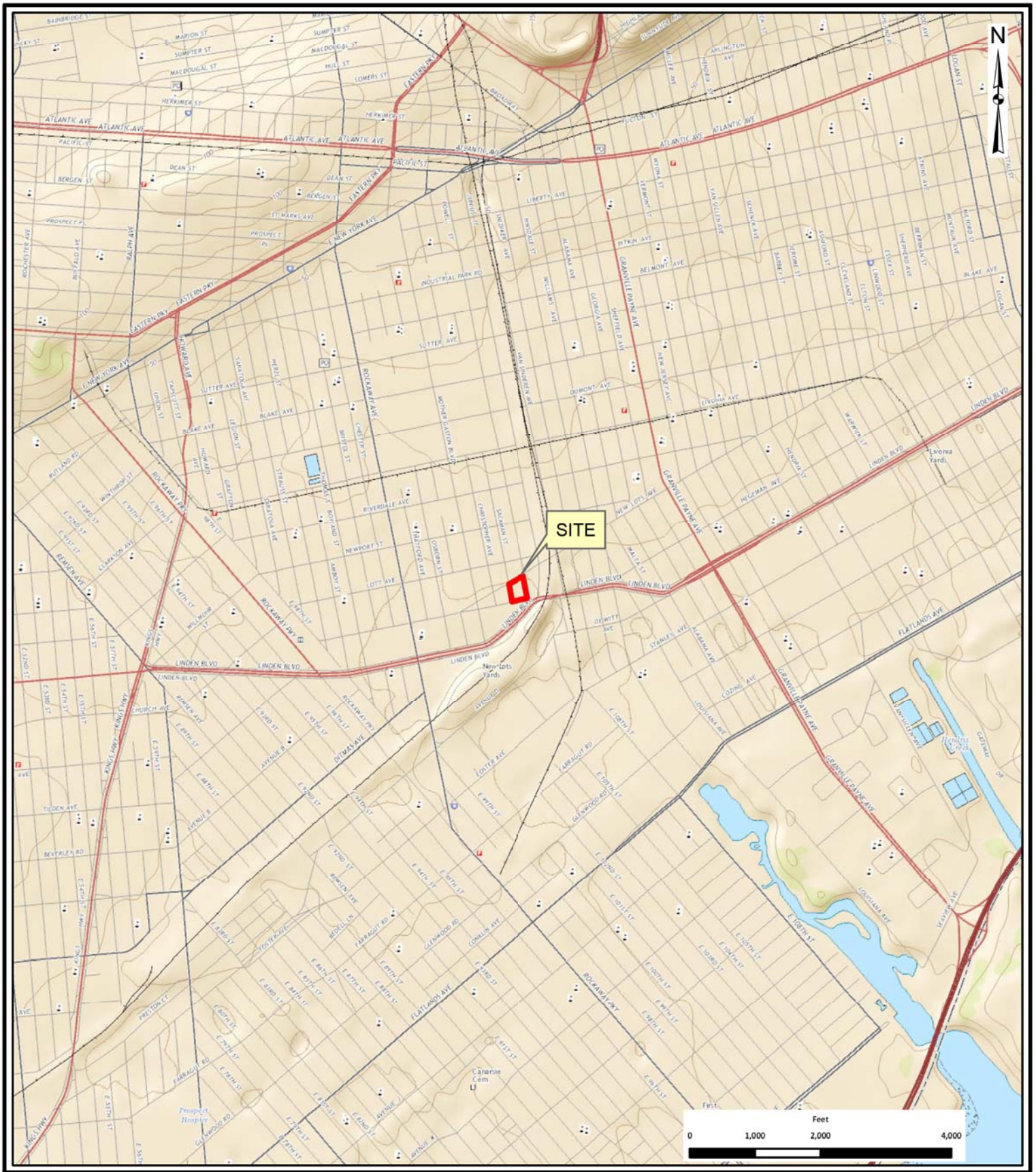
Imposition of institutional controls under the BCP is defined within an approved environmental easement and the SMP. The institutional controls are combined with the engineering controls described in this remedial work plan to constitute the extent of the Site remedial actions under the BCP. The institutional controls imposed on this project 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 compliance with a Department-approved environmental easement and Site Management Plan.

5.2 Engineering Controls

A Vapor Mitigation System (VMS) consisting of a sub-slab barrier system and an SSDS will be designed and installed beneath the foundational floor-slabs of the new buildings to be constructed on site. The VMS will mitigate potential exposure to VOCs by preventing soil vapor from migrating into interior building spaces. This remedy will allow for the full use and occupation of the basement and above-grade building levels with no further action. Operation, maintenance, and monitoring of the VMS will be included in the Site Management Plan.

Figures



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Ebenezer Plaza 1

Figure 1: Site Location Map

Hegeman and New Lots Avenues
Borough of Brookly, Kings County, New York

Source: US Topo. 2013 - USGSTopo (MapServer) Layer: USGS TNM Topo Base Map. Accessed 8 February 2017

Drawn:	STF
Date:	2/8/2017
Scale:	1 inch equals 2,000 feet
Project:	20918.05
Figure:	1

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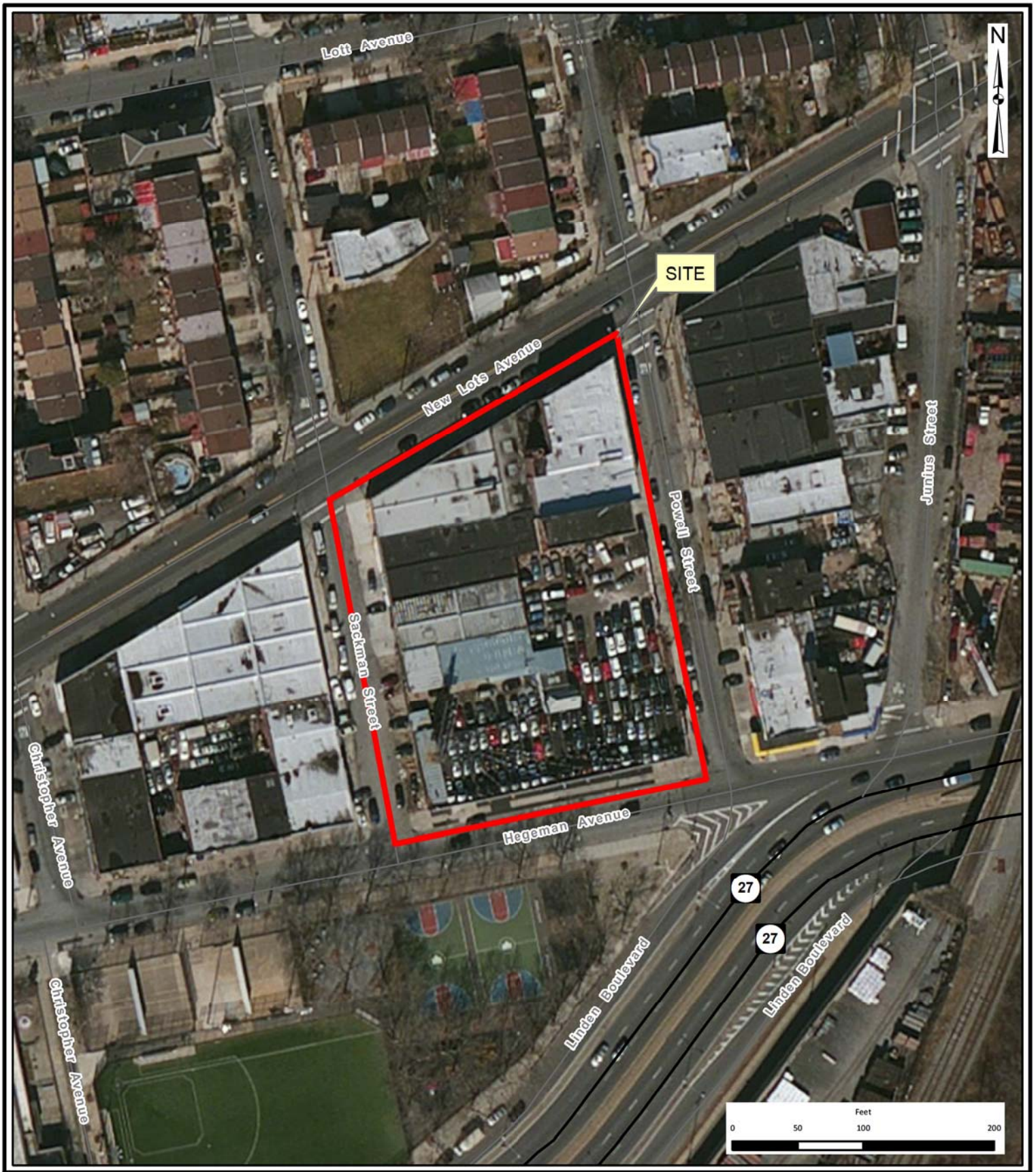

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Figure 2: Orthophoto

Hegeman and New Lots Avenues
Borough of Brookly, Kings County, New York

Source: NYS Department of Transportation 2008 Roads dataset;
NYS Department of Technology 2015 orthophoto image.

Drawn:	STF
Date:	2/8/2017
Scale:	1 inch equals 100 feet
Project:	20918.05
Figure:	2

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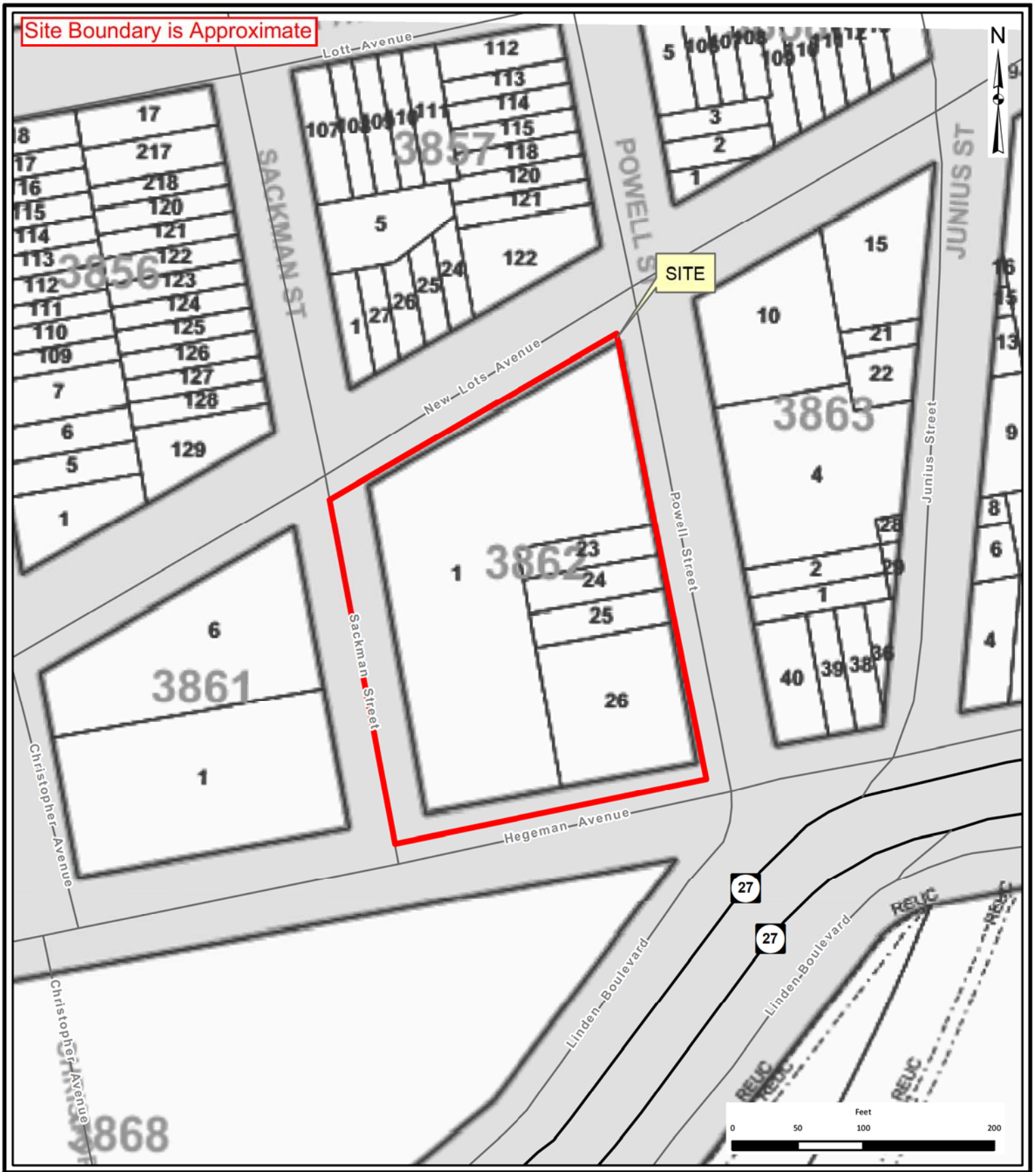

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Ebenezer Plaza 1

Figure 3: Tax Map

Hegeman and New Lots Avenues
Borough of Brookly, Kings County, New York

Source: NYS Department of Transportation 2008 Roads dataset;
NYC.gov Digital Tax Map Service, Accessed 10/6/2015

Drawn:	STF
Date:	2/8/2017
Scale:	1 inch equals 100 feet
Project:	20918.05
Figure:	3

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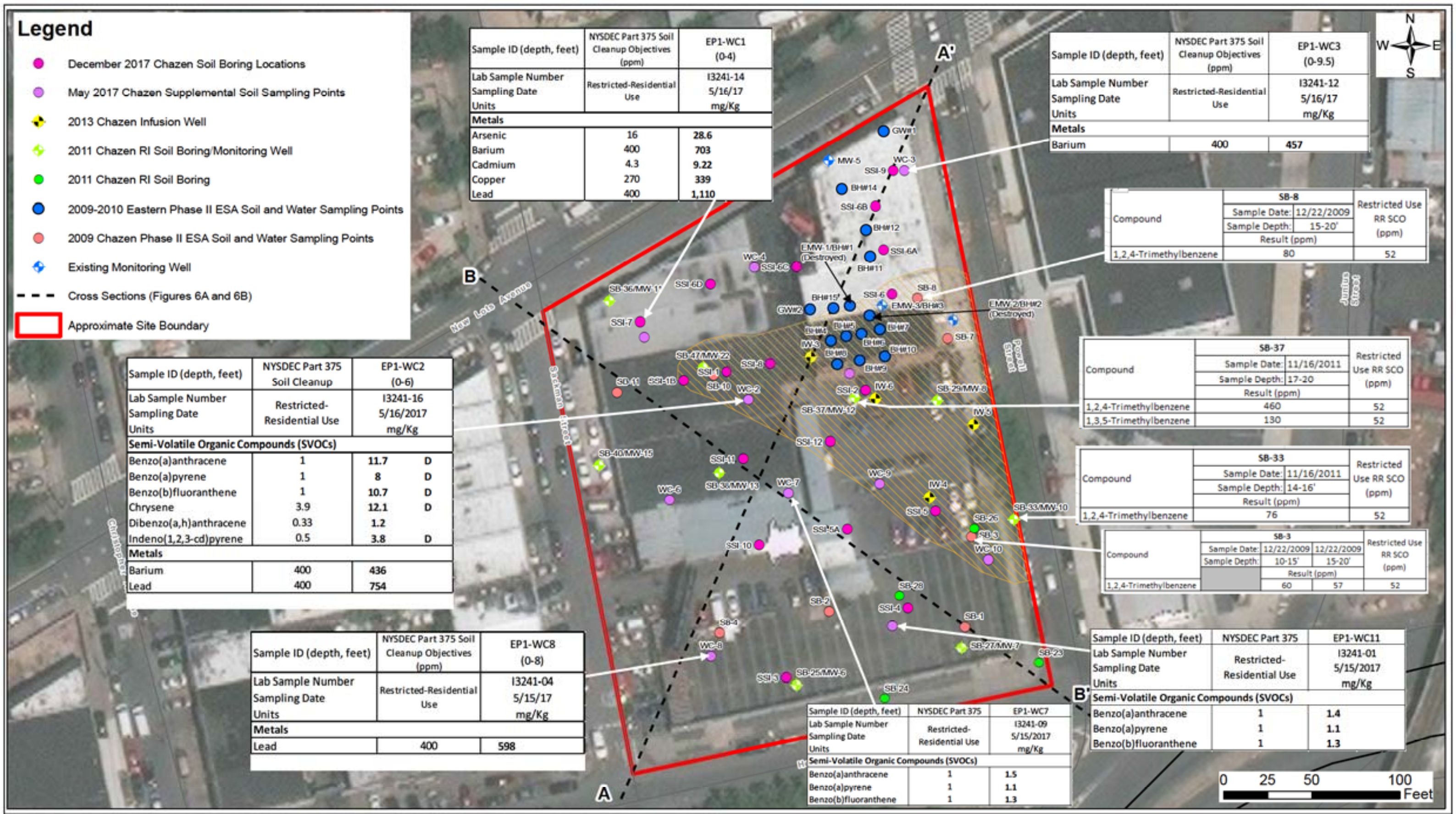

Sample ID (depth, feet)	NYSDEC Part 375 Soil Cleanup Objectives (ppm)	EP1-WC1 (0-4)
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-14 / 5/16/17 / mg/Kg
Metals		
Arsenic	16	**28.6**
Barium	400	**703**
Cadmium	4.3	**9.22**
Copper	270	**339**
Lead	400	**1,110**

Sample ID (depth, feet)	NYSDEC Part 375 Soil Cleanup Objectives (ppm)	EP1-WC3 (0-9.5)
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-12 / 5/16/17 / mg/Kg
Metals		
Barium	400	**457**

Compound	SB-8	Restricted Use RR SCO (ppm)
Sample Date:	12/22/2009	
Sample Depth:	15-20'	
	Result (ppm)	
1,2,4-Trimethylbenzene	80	52

Compound	SB-37	Restricted Use RR SCO (ppm)
Sample Date:	11/16/2011	
Sample Depth:	17-20	
	Result (ppm)	
1,2,4-Trimethylbenzene	460	52
1,3,5-Trimethylbenzene	130	52

Compound	SB-33	Restricted Use RR SCO (ppm)
Sample Date:	11/16/2011	
Sample Depth:	14-16'	
	Result (ppm)	
1,2,4-Trimethylbenzene	76	52

Compound	SB-3		Restricted Use RR SCO (ppm)
Sample Date:	12/22/2009	12/22/2009	
Sample Depth:	10-15'	15-20'	
	Result (ppm)		
1,2,4-Trimethylbenzene	60	57	52

Sample ID (depth, feet)	NYSDEC Part 375 Soil Cleanup	EP1-WC2 (0-6)	
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-16 / 5/16/2017 / mg/Kg	
Semi-Volatile Organic Compounds (SVOCs)			
Benzo(a)anthracene	1	**11.7**	D
Benzo(a)pyrene	1	**8**	D
Benzo(b)fluoranthene	1	**10.7**	D
Chrysene	3.9	**12.1**	D
Dibenzo(a,h)anthracene	0.33	**1.2**	
Indeno(1,2,3-cd)pyrene	0.5	**3.8**	D
Metals			
Barium	400	**436**	
Lead	400	**754**	

Sample ID (depth, feet)	NYSDEC Part 375 Soil Cleanup Objectives (ppm)	EP1-WC8 (0-8)
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-04 / 5/15/17 / mg/Kg
Metals		
Lead	400	**598**

Sample ID (depth, feet)	NYSDEC Part 375	EP1-WC11
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-01 / 5/15/2017 / mg/Kg
Semi-Volatile Organic Compounds (SVOCs)		
Benzo(a)anthracene	1	**1.4**
Benzo(a)pyrene	1	**1.1**
Benzo(b)fluoranthene	1	**1.3**

Sample ID (depth, feet)	NYSDEC Part 375	EP1-WC7
Lab Sample Number / Sampling Date / Units	Restricted-Residential Use	I3241-09 / 5/15/2017 / mg/Kg
Semi-Volatile Organic Compounds (SVOCs)		
Benzo(a)anthracene	1	**1.5**
Benzo(a)pyrene	1	**1.1**
Benzo(b)fluoranthene	1	**1.3**

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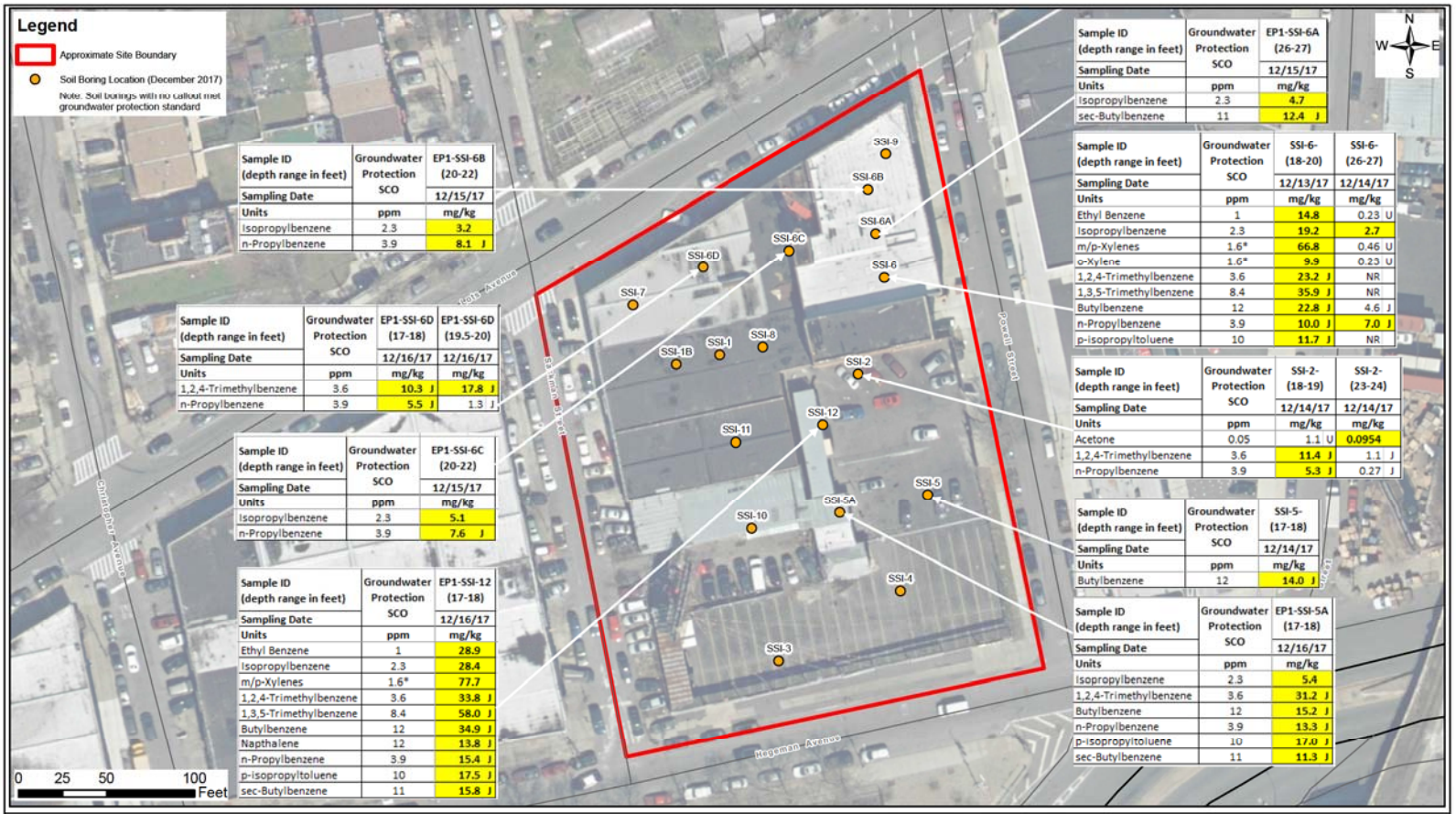
Ebenezer Plaza 1 - BCP Site No. C224240

Figure 4a: Soil Analytical Results Exceeding Restricted-Residential Use SCOs

Hegeman and New Lots Avenues
Borough of Brooklyn, Kings County, New York

Source: NYS Department of Transportation 2008 Roads Dataset; NYS Office of Technology 2015 Orthophoto Imagery

Drawn:	AT
Date:	01/30/2018
Scale:	1 inch = 50 feet
Project:	20918.06
Figure:	4a



Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-6B (20-22)
Sampling Date		12/15/17
Units	ppm	mg/kg
Isopropylbenzene	2.3	3.2
n-Propylbenzene	3.9	8.1 J

Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-6D (17-18)	EP1-SSI-6D (19.5-20)
Sampling Date		12/16/17	12/16/17
Units	ppm	mg/kg	mg/kg
1,2,4-Trimethylbenzene	3.6	10.3 J	17.8 J
n-Propylbenzene	3.9	5.5 J	1.3 J

Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-6C (20-22)
Sampling Date		12/15/17
Units	ppm	mg/kg
Isopropylbenzene	2.3	5.1
n-Propylbenzene	3.9	7.6 J

Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-12 (17-18)
Sampling Date		12/16/17
Units	ppm	mg/kg
Ethyl Benzene	1	28.9
Isopropylbenzene	2.3	28.4
m/p-Xylenes	1.6*	77.7
1,2,4-Trimethylbenzene	3.6	33.8 J
1,3,5-Trimethylbenzene	8.4	58.0 J
Butylbenzene	12	34.9 J
Napthalene	12	13.8 J
n-Propylbenzene	3.9	15.4 J
p-isopropyltoluene	10	17.5 J
sec-Butylbenzene	11	15.8 J

Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-6A (26-27)
Sampling Date		12/15/17
Units	ppm	mg/kg
Isopropylbenzene	2.3	4.7
sec-Butylbenzene	11	12.4 J

Sample ID (depth range in feet)	Groundwater Protection SCO	SSI-6- (18-20)	SSI-6- (26-27)
Sampling Date		12/13/17	12/14/17
Units	ppm	mg/kg	mg/kg
Ethyl Benzene	1	14.8	0.23 U
Isopropylbenzene	2.3	19.2	2.7
m/p-Xylenes	1.6*	66.8	0.46 U
o-Xylene	1.6*	9.9	0.23 U
1,2,4-Trimethylbenzene	3.6	23.2 J	NR
1,3,5-Trimethylbenzene	8.4	35.9 J	NR
Butylbenzene	12	22.8 J	4.6 J
n-Propylbenzene	3.9	10.0 J	7.0 J
p-isopropyltoluene	10	11.7 J	NR

Sample ID (depth range in feet)	Groundwater Protection SCO	SSI-2- (18-19)	SSI-2- (23-24)
Sampling Date		12/14/17	12/14/17
Units	ppm	mg/kg	mg/kg
Acetone	0.05	1.1 U	0.0954
1,2,4-Trimethylbenzene	3.6	11.4 J	1.1 J
n-Propylbenzene	3.9	5.3 J	0.27 J

Sample ID (depth range in feet)	Groundwater Protection SCO	SSI-5- (17-18)
Sampling Date		12/14/17
Units	ppm	mg/kg
Butylbenzene	12	14.0 J

Sample ID (depth range in feet)	Groundwater Protection SCO	EP1-SSI-5A (17-18)
Sampling Date		12/16/17
Units	ppm	mg/kg
Isopropylbenzene	2.3	5.4
1,2,4-Trimethylbenzene	3.6	31.2 J
Butylbenzene	12	15.2 J
n-Propylbenzene	3.9	13.3 J
p-isopropyltoluene	10	17.0 J
sec-Butylbenzene	11	11.3 J

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Ebenezer Plaza 1 - BCP Site No. C224240
Borough of Brooklyn, Kings County, New York
December 2017 - Supplemental Sampling Investigation

Figure 4b: Soil Sample Locations and Results Exceeding POGSCOs

Source: NYS Department of Transportation 2008 Roads Dataset; NYS Office of Technology 2013 Orthophoto Imagery

Drawn:	AT
Date:	January 10, 2018
Scale:	1 inch = 50 feet
Project:	20918.06
Figure:	4b

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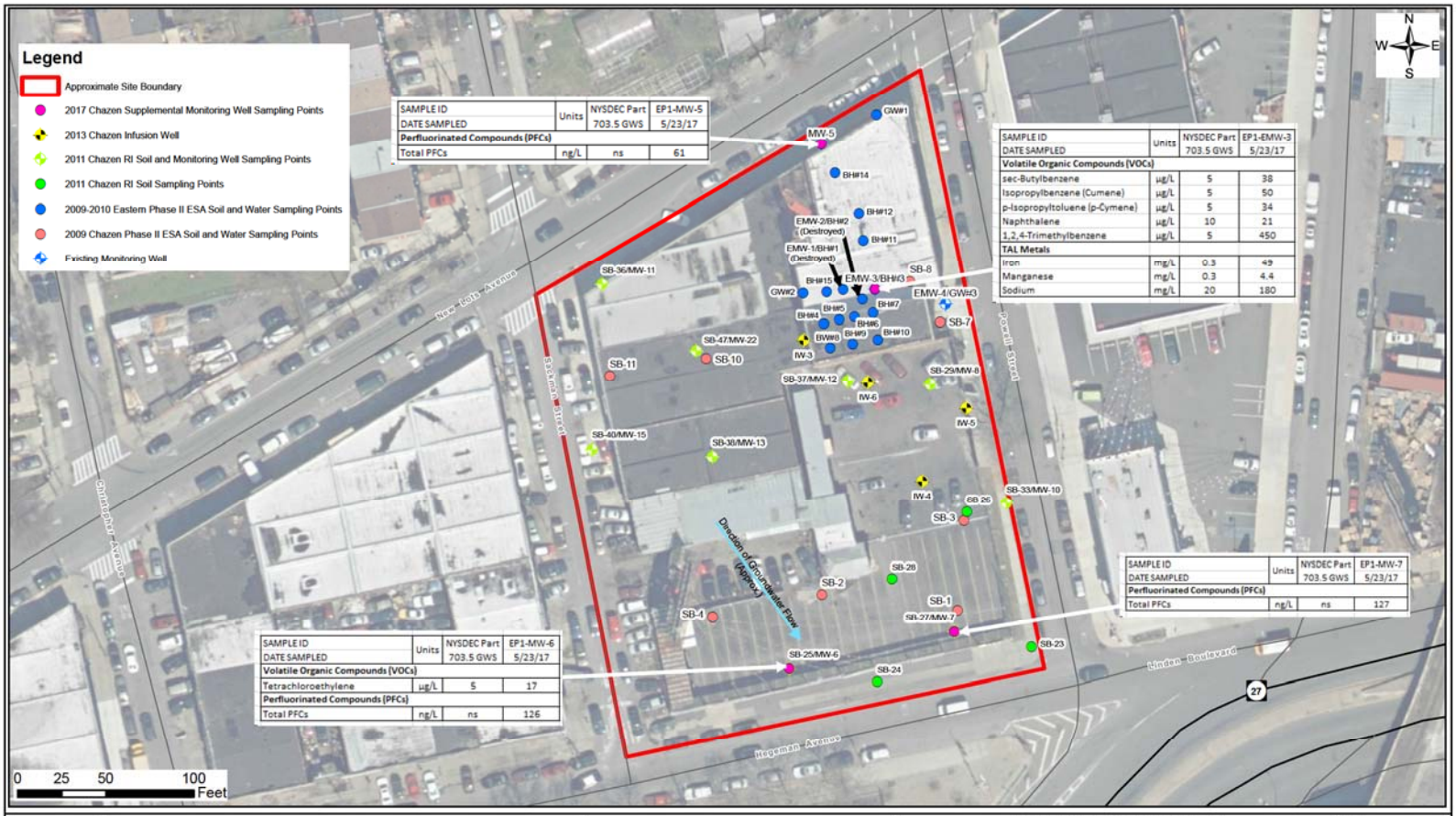

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Ebenezer Plaza 1 - BCP Site No. C224240

Figure 5: Groundwater Sample Locations and Results Exceeding Part 703.5 SCGs

Borough of Brooklyn, Kings County, New York

Source: NYS Department of Transportation 2008 Roads Dataset; NYS Office of Technology 2013 Orthophoto Imagery

Drawn: AT
Date: June 26, 2017
Scale: 1 inch = 50 feet
Project: 20918.06
Figure: 5

Document Path: Z:\projects\20900-20999\20918.06 EP-1\GIS\Maps\RAWP Revised Figures\F5-GroundwaterSampleLocations.mxd

Sample ID	EP1-SV-8
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	1.32
Tetrachloroethene	99.7
1,1,1-Trichloroethane	0.82
Methylene Chloride	2.99
Additional TO-15 CVOCs	
Chloroform	1.42 J
Dichlorodifluoromethane	1.78 J
Trichlorofluoromethane	11.8
TOTAL CVOCs	**119.8**

Sample ID	EP1-SV-7
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Trichloroethene	0.32
Tetrachloroethene	0.95
Methylene Chloride	2.95
Additional TO-15 CVOCs	
1,1,2-Trichlorotrifluoroethane	0.54 J
Chloroform	0.59 J
Chloromethane	0.97 J
Dichlorodifluoromethane	3.02
Trichlorofluoromethane	1.29 J
TOTAL CVOCs	**10.63**

Sample ID	EP1-SV-6
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	0.25
cis-1,2-Dichloroethene	1.23 J
Trichloroethene	8.6
Vinyl Chloride	2.81
Tetrachloroethene	881
1,1,1-Trichloroethane	9.28
Methylene Chloride	3.82
Additional TO-15 CVOCs	
Chloroform	2.88
Chloromethane	0.83 J
Dichlorodifluoromethane	2.57
Trichlorofluoromethane	17.4
TOTAL CVOCs	**931**

Sample ID	EP1-SV-5
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	0.44
cis-1,2-Dichloroethene	2.18
Trichloroethene	72.6
Tetrachloroethene	2,305
1,1,1-Trichloroethane	0.27
Methylene Chloride	9.38
Additional TO-15 CVOCs	
Chloroform	1.47 J
Chloromethane	0.83 J
Dichlorodifluoromethane	2.32 J
Trichlorofluoromethane	10.7
TOTAL CVOCs	**2,405**

Sample ID	EP1-SV-4
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
1,1-Dichloroethene	1.03 J
cis-1,2-Dichloroethene	2,220
Trichloroethene	1,343
Vinyl Chloride	11.2
Tetrachloroethene	14,240
Methylene Chloride	12.5
Additional TO-15 CVOCs	
Chloroform	6.35
Dichlorodifluoromethane	1.68 J
trans-1,2-Dichloroethene	59.5
Trichlorofluoromethane	2.02 J
TOTAL CVOCs	**17,897**

Sample ID	EP1-SV-9
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	0.63
Trichloroethene	0.21
Tetrachloroethene	9.49
1,1,1-Trichloroethane	0.16
Methylene Chloride	12.5
Additional TO-15 CVOCs	
Chloroform	7.81
Chloromethane	0.52 J
Dichlorodifluoromethane	6.43
Trichlorofluoromethane	15.2
TOTAL CVOCs	**53.0**

Sample ID	EP1-SV-10
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	1.64
Trichloroethene	1.67
Tetrachloroethene	222
Methylene Chloride	1.29 J
Additional TO-15 CVOCs	
1,2-Dichloroethane	1.9 J
Bromodichloromethane	1.27 J
Chloroform	5.37
Chloromethane	0.39 J
Dichlorodifluoromethane	1.78 J
Trichlorofluoromethane	1.8 J
TOTAL CVOCs	**239**

Sample ID	EP1-SV-12
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Carbon Tetrachloride	0.31
Trichloroethene	0.32
Tetrachloroethene	383
Methylene Chloride	22.9
Additional TO-15 CVOCs	
Dichlorodifluoromethane	3.21
Trichlorofluoromethane	6.74
TOTAL CVOCs	**416**

Sample ID	EP1-SV-11
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Tetrachloroethene	48.8
1,1,1-Trichloroethane	1.64
Methylene Chloride	3.47
Additional TO-15 CVOCs	
1,1,2-Trichlorotrifluoroethane	2.07 J
Chloroform	0.88 J
Dichlorodifluoromethane	2.82
Trichlorofluoromethane	66.9
TOTAL CVOCs	**126.6**

Sample ID	EP1-SV-1
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Tetrachloroethene	42.7
1,1,1-Trichloroethane	0.22
Methylene Chloride	2.01
Additional TO-15 CVOCs	
Chloromethane	1.38
Dichlorodifluoromethane	2.37 J
Trichlorofluoromethane	5
TOTAL CVOCs	**54**

Sample ID	EP1-SV-3
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Trichloroethene	15.6
Tetrachloroethene	3,458
Methylene Chloride	5.91
Additional TO-15 CVOCs	
Chloromethane	0.45 J
Dichlorodifluoromethane	1.29 J
Trichlorofluoromethane	1.74 J
TOTAL CVOCs	**3,483**

Sample ID	EP1-SV-2
Lab Sample Number	17005-03
Sampling Date	12/15/2017
Units	µg/m³
NYSDOH SVI Matrices Compounds	
Trichloroethene	10.8
Tetrachloroethene	1,084
1,1,1-Trichloroethane	0.55
Methylene Chloride	1.08 J
Additional TO-15 CVOCs	
Bromodichloromethane	1.61 J
Chloroform	183
Dichlorodifluoromethane	1.34 J
Trichlorofluoromethane	2.19 J
TOTAL CVOCs	**1,285**

THE Chazen COMPANIES
Engineers/Surveyors
Planners
Environmental Scientists
Landscape Architects

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Ebenezer Plaza 1 - BCP Site No. C224240
Borough of Brooklyn, Kings County, New York
December 2017 - Supplemental Sampling Investigation

Figure 6: CVOCs in Soil

Source: NYS Department of Transportation 2008 Roads Dataset; NYS Office of Technology 2013 Orthophoto Imagery

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Figure:	6

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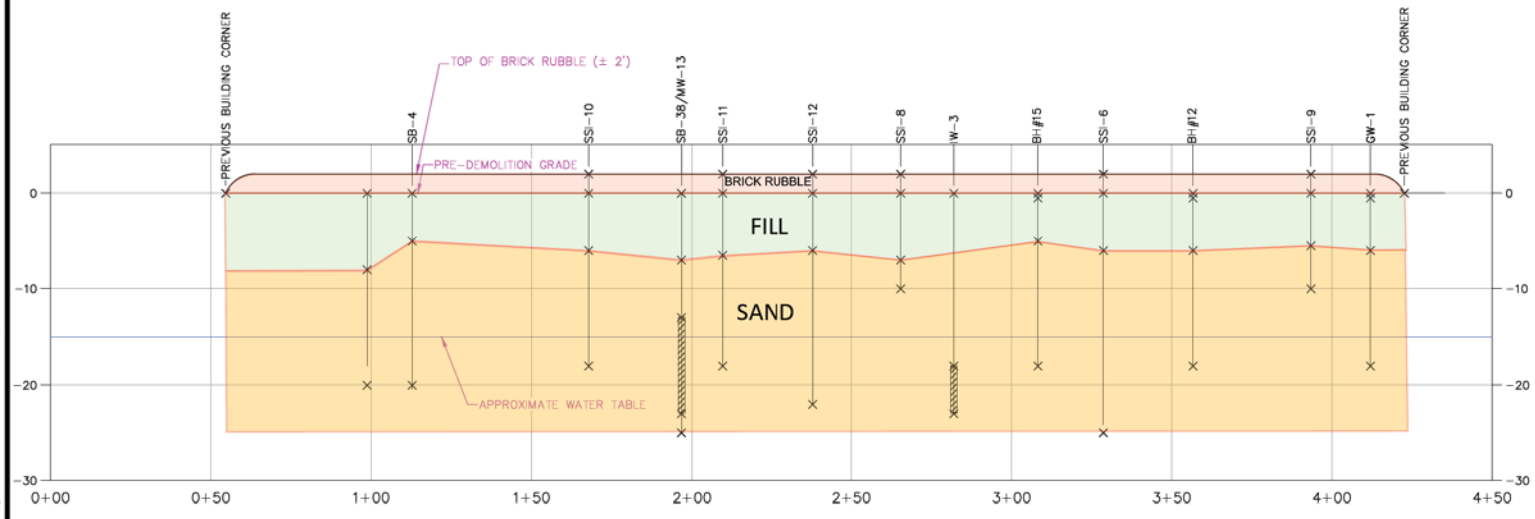

1 **STRATIGRAPHIC CROSS-SECTION**

SCALE: HORIZONTAL SCALE– 1"=30'
VERTICAL SCALE–1"=10'

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Tennessee Office
3200 West End Avenue, Suite 500
Nashville, Tennessee 37203
Phone: (615) 783-1628

EBENEZER PLAZA 1

STRATIGRAPHIC CROSS-SECTION A-A'

BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK

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date	scale
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20918.06	
sheet no.	
FIG-7a	

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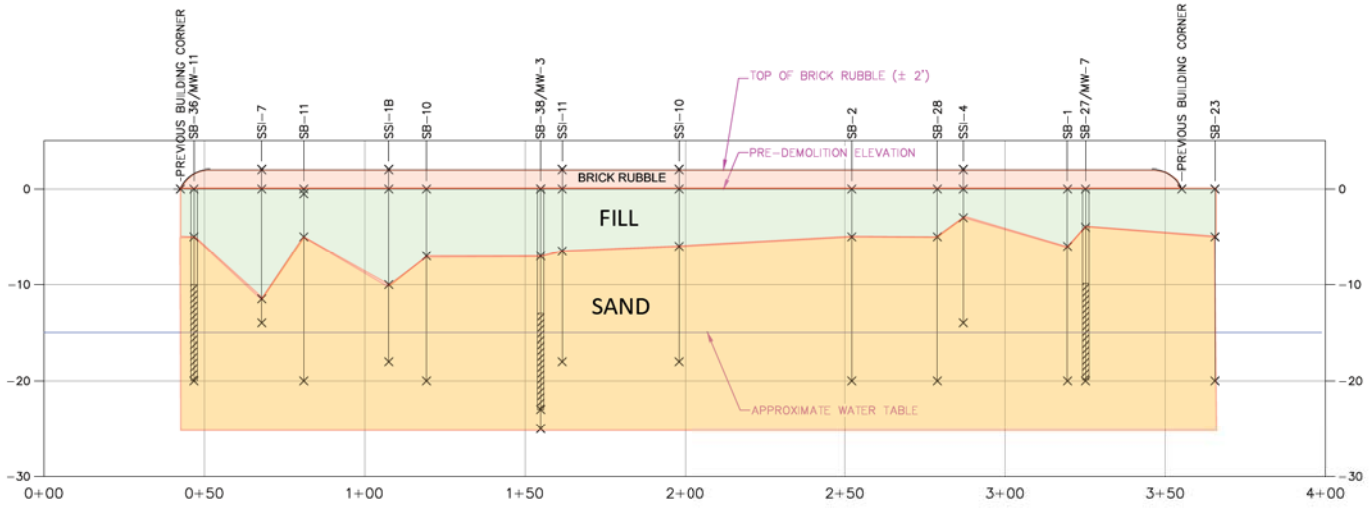

2 **STRATIGRAPHIC CROSS-SECTION**

SCALE: HORIZONTAL SCALE– 1"=30'
VERTICAL SCALE–1"=10'

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Nashville, Tennessee 37203
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EBENEZER PLAZA 1

STRATIGRAPHIC CROSS-SECTION B-B'

BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK

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date	scale
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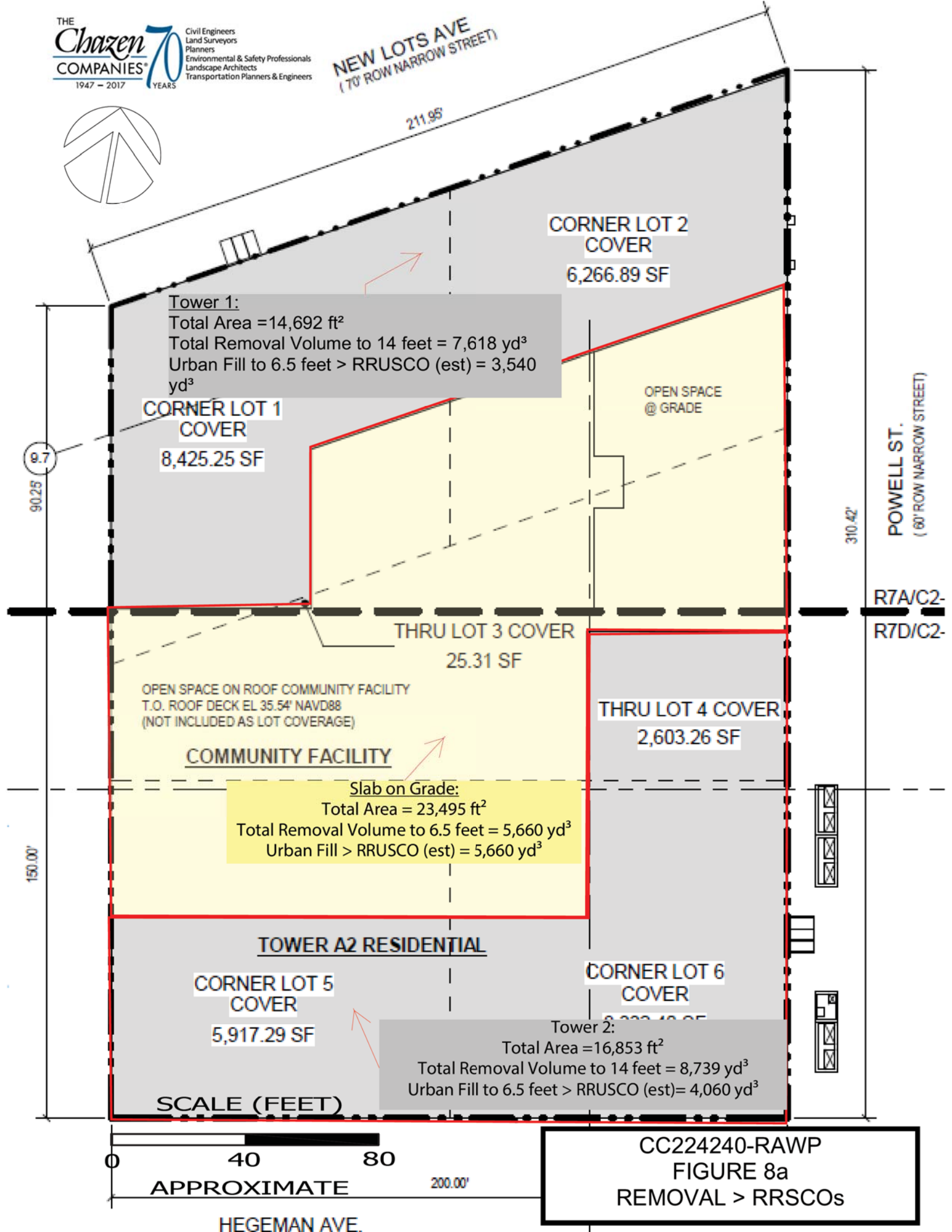
sheet no.	
FIG-7b	

Drawing Name: Z:\projects\20900-20999\20918.05 Ebenezer--Procida\25\Ebenezer 1.dwg Date Printed: Jan 30, 2018, 4:53pm


THE Chazen COMPANIES 1947 – 2017 70 YEARS
Civil Engineers
Land Surveyors
Planners
Environmental & Safety Professionals
Landscape Architects
Transportation Planners & Engineers
NEW LOTS AVE
(70' ROW NARROW STREET)
211.95'
CORNER LOT 2
COVER
6,266.89 SF
Tower 1:
Total Area =14,692 ft²
Total Removal Volume to 14 feet = 7,618 yd³
Urban Fill to 6.5 feet > RRUSCO (est) = 3,540 yd³
CORNER LOT 1
COVER
8,425.25 SF
OPEN SPACE
@ GRADE
9.7
90.25'
310.42'
POWELL ST.
(60' ROW NARROW STREET)
R7A/C2-
R7D/C2-
THRU LOT 3 COVER
25.31 SF
OPEN SPACE ON ROOF COMMUNITY FACILITY
T.O. ROOF DECK EL 35.54' NAVD88
(NOT INCLUDED AS LOT COVERAGE)
THRU LOT 4 COVER
2,603.26 SF
COMMUNITY FACILITY
Slab on Grade:
Total Area = 23,495 ft²
Total Removal Volume to 6.5 feet = 5,660 yd³
Urban Fill > RRUSCO (est) = 5,660 yd³
150.00'
TOWER A2 RESIDENTIAL
CORNER LOT 5
COVER
5,917.29 SF
CORNER LOT 6
COVER
Tower 2:
Total Area =16,853 ft²
Total Removal Volume to 14 feet = 8,739 yd³
Urban Fill to 6.5 feet > RRUSCO (est)= 4,060 yd³
SCALE (FEET)
0
40
80
APPROXIMATE
200.00'
HEGEMAN AVE.
CC224240-RAWP
FIGURE 8a
REMOVAL > RRSCOs

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Ebenezer Plaza 1 - BCP Site No. C224240

SOIL REMOVAL AREAS and VOLUMES > RRSCOs or PoGSCOs
Borough of Brooklyn, Kings County, New York

Source: NYS Department of Transportation 2008 Roads Dataset; NYS Office of Technology 2013 Orthophoto Imagery

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