Chapter 10: Hazardous Materials

A. INTRODUCTION

This chapter assesses the potential for the presence of hazardous materials resulting from previous and existing uses both onsite and in the surrounding area, and potential risks to the proposed projects with respect to any such hazardous materials. A "hazardous material" is generally defined as a substance that poses a threat to human health or the environment. It is sometimes used interchangeably with the term "contaminated material," but should not be confused with "hazardous waste," which is a regulatory term.[1]

As detailed in Chapter 1, "Project Description," the existing Coleman, Link, and Reiss Pavilions and the Cronin Building on the East Site would be demolished and replaced with new residential buildings, some with retail space and medical offices on the lower floors. The existing Raskob and Smith Buildings, Spellman Pavilion and Nurses' Residence on the East Site would be converted to residential use. Existing extensions in the rear yards of the Nurses' Residence and the Spellman Pavilion would be removed for construction of a courtyard in the center of the residential development on the East Site. Construction on the East Site would entail subsurface disturbance to depths of approximately 18~~20~~ to 38~~25~~ feet below street grade. The Materials Handling Facility on the Triangle Site would be demolished to allow for the creation of a new publicly accessible open space. ~~The area used for the storage of medical gases on the west end of the Triangle Site would be retained for use by North Shore-Long Island Jewish Health Care System (NSLIJ).~~ The existing O'Toole Building would be renovated for use as a Center for Comprehensive Care. The conversion would entail interior demolition and reconstruction, as well as limited expansion of the ground floor and limited subsurface disturbance for the expansion.

PRINCIPAL CONCLUSIONS

Significant adverse impacts related to hazardous materials would be avoided during and following construction with the incorporation, as part of the proposed projects, of an approved Remedial Action Plan (RAP) and environmental Construction Health and Safety Plan (CHASP), and the adherence to applicable regulatory requirements during demolition and renovation activities. The September 2005 Phase I Environmental Site Assessment (ESA) and updates in July 2009 and February 2011 identified historical and present potential sources of contamination including potential historical petroleum storage tanks, potential historical disposal of laboratory chemicals into the sewer system, and surface staining noted: near the hydraulic elevators in the

[1] "Hazardous waste" is defined in both the Environmental Protection Agency (EPA) regulations (40 CFR Part 261) and New York State regulations (6 NYCRR Part 371) and refers to a subset of solid wastes that are either specific wastes listed in the regulations (listed wastes) or solid wastes possessing the characteristic of ignitability, reactivity, corrosivity or toxicity (characteristic wastes).

Materials Handling Facility on the Triangle Site; near the emergency generator fuel pump in Coleman Pavilion; and in the generator room adjacent to the Nurses' Residence. Potential off-site sources included two dry cleaners located on the East Site block, one approximately 190 feet north of the O'Toole Building and others on blocks to the north and east.

The August 2011 Phase II subsurface investigation included the advancement of ten borings with collection of 19 soil samples and 7 groundwater samples for laboratory analysis. Laboratory results were compared to New York State Department of Environmental Conservation (DEC) Soil Cleanup Objectives (which assume long-term exposure to soils) and Class GA Water Quality Standards (which assume use for drinking water). Since neither of these assumptions occurs now or would be expected to occur in the future, comparisons to these criteria are highly conservative. In summary, the laboratory results identified generally low levels of analytes in the soil and groundwater, typical of those often found in developed areas.

To avoid adverse impacts, the following measures would be undertaken prior to and during the proposed projects:

- Although the Phase II detected soil and groundwater constituents at levels generally below the most stringent DEC guidelines, to minimize the potential for impacts to the community and construction workers, all soil disturbance would be performed in accordance with a New York City Department of Environmental Protection (DEP) - approved RAP and CHASP, the scope of which would be based on the findings of the Phase II. ~~At a minimum, t~~ The RAP ~~would~~ provides for the appropriate handling, stockpiling, testing, transportation, and disposal of excavated materials, as well as any unexpectedly encountered tanks, in accordance with all applicable federal, state, and local regulatory requirements. Although the Phase II detected no elevated concentrations of volatile organic compounds (VOCs) in soil or groundwater, the RAP ~~would~~ also provides for a vapor barrier beneath new construction as a precautionary vapor control measure~~s such as vapor barriers or placing residential uses above separately ventilated parking areas~~. The CHASP outlines procedures to ~~would~~ ensure that all subsurface disturbance is done in a manner protective of both workers, the community, and the environment. The applicant will enter into a Restrictive Declaration with the City to ensure the RAP/CHASP are ~~prepared,~~ approved and implemented.
- All demolition and renovation would be conducted in accordance with applicable regulatory requirements including those relating to asbestos, lead-based paint and polychlorinated biphenyls (PCBs). These requirements would also be applicable to any demolition/ renovation that could occur in the future without the proposed projects.

With these measures, significant adverse impacts related to hazardous materials would be avoided during and following construction. These measures will be incorporated as part of the proposed projects through a Restrictive Declaration.

B. POTENTIAL CONTAMINANTS OF CONCERN

Soil and groundwater can become contaminated as a result of past or current activities either on a site or on adjacent areas. Some activities associated with hospitals (such as laboratories) and other activities common in mixed-use neighborhoods—such as gas stations and dry cleaners—can result in contamination due to improper management of chemicals and/or waste materials, or inadvertent spills.

Subsurface soil and groundwater contamination may remain undetected for many years, without posing a threat to nearby workers, residents, passersby, or other receptors. Excavation,

earthmoving, dewatering, and other construction activities can, however, expose the contaminants, provide a pathway of exposure and, if such contaminants are not properly managed, introduce potential risk to construction workers and others nearby.

Demolition of existing structures that have asbestos-containing materials, lead-based paint or electrical equipment containing polychlorinated biphenyl also have the potential to release contaminants, if these materials are not properly managed.

Based on the types of contaminants that are typically found in New York City and past and present site uses, some of the potential contaminants of concern are described below. The list provides a summary of potential categories of contaminants and is not a comprehensive list of all contaminants that may be encountered:

- ***Volatile organic compounds (VOCs)*:** These include aromatic compounds—such as benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertiary butyl ether (MTBE), which are found in petroleum products (especially gasoline)—and chlorinated compounds, such as tetrachloroethene (also known as perchloroethylene or "perc") and tricholoroethene, which are common ingredients in solvents, degreasers, and cleansers. VOCs represent the greatest potential for concern since, in addition to contaminating soil and groundwater, they can generate vapors that migrate into buildings.
- ***Semivolatile organic compounds (SVOCs):*** The most common SVOCs in urban areas are polycyclic aromatic hydrocarbons (PAHs), which are constituents of partially combusted coal- or petroleum-derived products, such as coal ash and fuel oil. PAHs are commonly present in New York City urban fill materials, which may be present under the project area. In addition, petroleum-related SVOCs could be associated with the known on-site underground tank and other potential tanks currently or formerly located on-site.
- ***Polychlorinated biphenyls (PCBs)*:** Historically used in transformers (as a dielectric fluid), some underground high-voltage electric lines, hydraulically operated machinery, and fluorescent lighting ballasts. PCBs tend to travel only short distances in soil.
- ***Metals (including lead, arsenic, cadmium, chromium, and mercur*y):** Metals are often used in smelters, foundries, and metal works and are found as components in paint, ink, petroleum products, and coal ash. Metals tend not to migrate far in soil; therefore, they would be of greatest concern at the site where they were generated. Metals at levels above natural background levels are frequently present in fill material throughout the New York metropolitan area. In addition, the age of the on-site buildings indicates that they may contain lead-based paint, which was allowed for use in New York City residential buildings until 1960, and restricted for use in commercial buildings by the Consumer Products Safety Commission in 1977.
- ***Fuel oil and gasoline from storage tanks*:** The Phase I ESA identified a diesel aboveground storage tank (AST) and a fuel oil underground storage tank (UST) it the project area, as well as four petroleum storage tanks (which may have been removed or may remain buried in place) associated with a historically on-site filling station and sidewalk features potentially indicating past or present petroleum storage tanks. Some of these tanks or associated piping may have leaked, although no reported petroleum spills are identified in the regulatory databases for the project area.
- ***Fill materials of unknown origin*:** In the past, waste materials, including coal and incinerator ash, demolition debris, and industrial wastes, were used as fill in urban areas.

Even fill material consisting primarily of soil may exhibit elevated levels of PAHs, metals, PCBs, or other contaminants. Such materials are potentially present it the project area.

- ***Asbestos:*** Asbestos is a generic name for a group of naturally occurring minerals. Before 1990, these minerals were commonly used in various building materials, such as insulation, fireproofing, roofing, plaster, and floor and ceiling tiles, due to their excellent fire resistance and insulating properties. Asbestos-containing materials (ACM) are classified as friable or non-friable. Friable ACM, such as spray-applied fireproofing and thermal system insulation, are those which can be crumbled, pulverized, or reduced to powder when dry by hand or other mechanical pressure and present a greater health concern than non-friable ACM (such as vinyl floor tiles and some asphaltic roofing materials) as they more readily release asbestos fibers. In 1990, use of most ACM, except some non-friable ACM, was banned by the federal Clean Air Act. However, since on-site buildings were built before 1990, they are likely to contain ACM. In addition to materials within existing structures, subsurface utility lines may be coated with asbestos or encased in the ACM "transite."

C. EXISTING CONDITIONS

TOPOGRAPHY, GEOLOGY, AND GROUNDWATER

Based on surveyed project drawings, the streets surrounding the project area are located at an elevation of approximately 21 to 24 feet above Mean Sea Level, sloping slightly downward towards the west. Based on U.S. Geological Survey mapping, bedrock is expected at a depth of approximately 40 to 70 feet below-grade. The August 2011 Phase II investigation encountered fill materials (generally sand with silt, gravel, brick, ash, coal slag, wood, plant roots and/or mica fragments) to depths of 4 to 20 feet beneath the surface in 4 of 10 borings. Sand with silt, gravel and/or mica fragments, which may be fill or native soil, underlay the fill and was encountered from the surface down in the remaining borings, where no definite evidence of fill material (e.g., building materials) was noted. Trace weathered schist was noted in several borings.

Groundwater was first encountered in the Phase II borings and an existing monitoring well north-adjacent to the O'Toole Building Site at depths ranging from approximately 18 to 22.5 feet below sidewalk grade. Based on area topography, groundwater would be expected to flow towards the Hudson River, but actual groundwater flow direction is likely influenced by dewatering associated with the subway tunnels in the vicinity as well as potential past filling activities, the presence of subsurface openings such as basements and underground parking garages, and other factors. Groundwater in Manhattan is not used as a source of potable water.

ENVIRONMENTAL INVESTIGATIONS

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

A Phase I ESA was prepared for the project area (GZA GeoEnvironmental, Inc., September 2005) to assess the potential for contaminated materials in buildings or the subsurface from past or present uses at or near the project area. The Phase I ESA was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E1527-00 and included:

- A visual inspection to identify on-site uses/activities and interviews with site personnel;
- A visual inspection, from public rights-of-way, of adjacent properties;
- An evaluation of land use history using available historical maps and aerial photographs;

- A review of federal and state databases regarding hazardous materials for both the project area and for the surrounding area;
- A review of electronic DOB files for pertinent information, including historic and current petroleum tanks;
- A review of local City Directories (current and historic business listings); and
- A review of available geologic, hydrologic, hydrogeologic, and topographic information from existing data sources.

The findings of the Phase I ESA were updated by AKRF in July 2009 and February 2011. The updates included a reinspection of the site and surrounding area, and a review of updated federal and state regulatory databases.

The Phase I ESA and the updates identified the following:

On-site

- An active, vaulted 3,000-gallon diesel AST was present in the sub-basement of the Coleman Pavilion. Evidence of staining and leakage within the vault was noted during the September 2005 Phase I ESA, but not in 2009. In 2011, apparent water staining was noted within the vault, and potential oil staining was noted in the fuel pump room near the vault. It was noted that the tank is registered with DEC as an underground vaulted tank with access.
- An approximately 50-gallon day tank was located in the generator room on the 19th floor of the Coleman Pavilion (supplied by the 3,000-gallon diesel AST). Staining was noted on the concrete floor on and adjacent to the tank's secondary enclosure during the 2009 and 2011 site visits.
- An active, 6,000-gallon diesel UST was buried beneath the sidewalk north of and adjacent to the Reiss Pavilion, for an emergency generator south-adjacent to the Nurses' Residence. This tank was registered with DEC. Saint Vincent's representatives indicated that this tank was also registered with the New York City Fire Department (FDNY), and had passed a tightness test in February 2009. During the 2011 site visit, staining was noted in the Nurses' Residence emergency generator room.
- A diesel-powered emergency generator was reportedly historically located on the western portion of the Triangle Site based on interviews with a Saint Vincent's facilities manager in 2011; the manager was not certain of the associated tank's size or date of removal.
- A former filling station and oil change/auto repair shop with four 550-gallon buried gasoline tanks was historically located at the site of the O'Toole Building from approximately 1939-1963. Although the status of the tanks is unknown, based on the depth of the O'Toole Building's basement (approximately 15 feet), the tanks were most likely removed for the construction of the building, though subsurface contamination could remain.
- Fourteen possible fill ports for historical USTs or ASTs were identified. Six were in the West 12th Street sidewalk between Sixth and Seventh Avenues north of and adjacent to the eastern portion of the site; six were in the West 11th Street sidewalk south of and adjacent to the eastern portion of the site; and the West 12th and West 13th Street sidewalks each contained one adjacent to the O'Toole Building.
- Eleven online DOB records indicated Oil Burner Applications: two dated 1950 and 1970 for the present site of the Materials Handling Facility; six (two each dated 1939, 1940, and 1949) for the present site of the O'Toole Building; two dated 1936 and 1949 for the present site of the Cronin Building; and a 1941 application for the 130 West 12th Street (which is to

the east of the project area). This final listing may relate to the 6,000-gallon tank buried under the sidewalk north of the adjacent Reiss Pavilion. Based on the building construction dates indicated in the Phase I ESA, except for the 130 West 12th Street (not on the project area), these applications pre-date the current on-site buildings. As such, potential fuel oil tanks associated with these applications, if ever installed, were likely removed for the construction of the current buildings (all of which have basements), though some could still be present beneath the site.

- Online DOB records indicated a Gasoline Tank Application in 1961 for 151 West 11th Street (the present site of the Link Pavilion). No details of the application were provided. However, a summary of City Directory listings in the Phase I ESA did not identify uses likely associated with gasoline tanks on-site, and historical Sanborn maps for 1904 through 1985 showed a hospital building at this address; this building was not noted to contain uses typically associated with gasoline tanks (such as filling stations or garages).
- An inactive historical boiler room in the basement of the 130 West 12th Street was historically immediately east adjacent to the project area. Although the boiler may have burned oil, no information about any associated fuel oil tanks was identified. According to the building's owner, the boiler has been removed, and no evidence of petroleum storage tanks was noted.
- Two hydraulic elevators were noted in the Materials Handling Facility. The elevator equipment and two approximately 50-gallon hydraulic oil tanks were located in the building's basement. Some staining was noted on the concrete floor adjacent to the tanks. A hydraulic elevator was also located in the O'Toole Building, with elevator equipment and an approximately 50-gallon hydraulic oil tank located in the basement.
- Medical, laboratory, maintenance and cleaning chemicals were historically stored throughout the project area. At the time of the 2011 site visit, most chemicals had been removed or were scheduled to be removed; some maintenance-related chemicals continued to be used, and a dental office continued operating on the second floor of the O'Toole Building. Some staining was noted in basement maintenance shops and former chemical storage areas in the portion of the site east of Seventh Avenue. Laboratory reagents may have been historically disposed of in sinks. Laboratory chemicals and other leaks or spills may have been released into the subsurface through sewer leaks or cracks in the floors. Regulatory databases listed the project area as a generator of hazardous waste including metal waste, spent halogenated and non-halogenated solvents, and various other chemicals. According to Saint Vincent's representatives interviewed in 2009, chemicals and reagents used in maintenance shops and laboratories were collected for appropriate disposal or recycling by private contractors (including disposal as medical waste for chemicals used in tissue analysis), and only non-hazardous chemicals in concentrations within regulatory guidelines (such as sodium chloride and some dilute laboratory reagents) were approved by the Chief Chemist of Saint Vincent's for disposal in on-site sinks.
- The presence of asbestos-containing materials was identified by past site studies, as well as the likely presence of lead-based paint and/or potentially PCBs or mercury-containing fluorescent lighting fixtures or other chemical equipment. Some damaged wall and ceiling sheetrock was noted in the basements of the East Site and in O'Toole Building stairwells, and damaged pipe insulation and ceiling tiles were observed in East Site basements.

Off-Site

- Potential off-site sources included two dry cleaners located on the East Site block, one approximately 190 feet north of the O'Toole Building and others on blocks to the north and east.
- Two apparent groundwater monitoring wells were observed in sidewalks north of and adjacent to the O'Toole Building and south of and adjacent to the Link Pavilion. These wells may have been installed during a past environmental investigation or may have been installed for other purposes (e.g., geotechnical studies); however, spill listings on the project block and adjacent blocks did not note environmental investigations. Saint Vincent's representatives interviewed in 2009 were not aware of the purpose of the monitoring wells.
- A spill with an active status was reported at a former gas station at 61 Greenwich Avenue, approximately 165 feet south-southwest of the East Site in December 2009; the spill listing noted a petroleum-like odor at the soil-groundwater interface (approximately 23-30 feet below-grade) during a subsurface investigation. This spill may have affected subsurface conditions beneath the project area. No other active spill listings were identified within 400 feet of the project area.
- A 100-gallon No. 2 fuel oil spill was reported at West 12th Street and Greenwich Avenue, potentially adjacent to the Site, in February 1987; some fuel oil entered the sewer system, the remaining fuel oil was reportedly cleaned up, and the listing was closed the day it was reported. Nine minor petroleum spills (less than 10 gallons in size) were reported in Consolidated Edison transformer vaults or manholes in roads or sidewalks adjacent to the project area. All of these spill listings had a status of closed, with no impact to the subsurface (outside of the vault/manhole) indicated. None of these spills are likely to have affected subsurface conditions beneath the project area.
- Four 1,000-gallon aboveground gasoline tanks registered with DEC as having been removed from 1-7 Seventh Avenue (an alternate address for the Link Pavilion) in 2006. Saint Vincent's representatives interviewed during the 2009 site visit were not aware of these tanks. Based on the owner contact information given in the listing, the address was erroneous, and the tank registration was for a condominium development at One Seventh Avenue South, approximately 3,000 feet southwest of the site.

SUBSURFACE (PHASE II) INVESTIGATION

A Subsurface (Phase II) Investigation (AKRF, August 2011) was conducted of the East Site, Triangle Site and the O'Toole Building Site to determine whether current or former, on- or off-site activities have adversely affected subsurface conditions of the project area. The Phase II was conducted in accordance with a Work Plan and Health and Safety Plan (HASP); the Work Plan, HASP and Phase II report were submitted to DEP for review and were approved in a letter dated August 4, 2011 (see **Appendix B**).

The Phase II included the advancement of ten borings with the collection of 19 soil samples and 6 groundwater samples (from temporary wells installed in the borings) for laboratory analysis. An additional groundwater sample was collected from an existing permanent monitoring well in the West 13th Street sidewalk, north-adjacent to the O'Toole Building Site. Soil sample analytical results were compared to DEC Part 375 Unrestricted Use Soil Cleanup Objectives (USCOs) and Part 375 Soil Cleanup Objectives for Restricted Residential Use (RRSCOs). Both of these sets of objectives assume future long-term exposure to soils, so are extremely conservative given current and potential future site use. Groundwater sample analytical results

were compared to the DEC Class GA Ambient Water Quality Standards, which are intended for current or potential potable water supplies. Again this is very conservative as groundwater in Manhattan is not a potable source. The Phase II identified the following:

- No VOCs were detected in soil samples at levels exceeding USCOs or RRSCOs. VOCs were detected in the groundwater samples, but only at levels meeting Class GA standards. Low levels of certain VOCs were detected in some samples, possibly related to historical uses it the project area (including petroleum storage and laboratories) or more likely off-site sources/low level regional contamination.
- No SVOCs were detected soil samples at levels exceeding USCOs or RRSCOs. Detected SVOCs were primarily polycyclic aromatic hydrocarbons (PAHs), a class of compounds found in coal ash and urban fill as well as some petroleum products. Detected SVOCs are likely attributable to urban fill rather than a release or spill. SVOCs were detected in three groundwater samples; one compound, bis(2-ethylxehyl)phthalate, slightly exceeded its Class GA standard in one well, but this compound is commonly found in many plastics and may be a laboratory/sampling artifact, but in any event is not indicative of a significant release or spill.
- No metals were detected in soil samples at levels exceeding RRSCOs. Lead and mercury exceeded their respective USCOs in two and one samples, respectively, but the levels detected were typical of those found in urban environments and are most likely attributable to the urban fill materials rather than a release or spill. Metals were detected in both the unfiltered and filtered groundwater samples, with concentrations of 14 metals exceeding Class GA standards in the unfiltered groundwater samples. However, as is commonly the case, the detected concentrations in the filtered samples were significantly lower, with only three common metals (iron, manganese and sodium) exceeding Class GA standards. The reason for the more elevated concentrations in the unfiltered samples is most likely that there were suspended sediments in the unfiltered samples. The three more elevated metals detected in the filtered samples are likely naturally occurring and in any event do not indicate a spill or leak.
- No pesticides were detected in soil samples at levels exceeding RRSCOs. One compound, 4,4'-DDT, slightly exceeded the USCO in one soil sample. The detected concentrations are attributable to historical use at/near the site and/or the urban fill materials. No pesticides were detected in the groundwater samples.
- No PCBs were detected in soil samples at levels exceeding USCOs or RSCOs. Trace concentrations were detected in two soil samples collected near an underground electrical transformer vault in the West 12th Street sidewalk and near hydraulic elevator equipment in the basement of the Materials Handling Facility. The detected concentrations may be attributable to PCB-containing equipment in the transformer vault, PCB-containing elevator hydraulic fluid and/or urban fill materials, but the levels do not appear to indicate a significant release. No PCBs were detected in the groundwater samples.

D. THE FUTURE WITHOUT THE PROPOSED PROJECTS

It is assumed for this EIS that the East Site would remain vacant and that the O'Toole Building would be reoccupied with physicians offices and similar health care uses; some interior work might be required but no soil disturbance would be associated with this reuse. The Triangle Site would exist as it does today. No soil disturbance is anticipated in the future without the proposed

projects. Any renovation activities could increase pathways for human exposure (related to ACM; potential lead-based paint; potential PCB-containing fluorescent lighting fixtures, electrical and/or hydraulic equipment; and potential mercury-containing fluorescent lights), the potential for significant adverse impacts could be avoided by conducting all renovation activities in accordance with applicable regulatory requirements.

Specifically, procedures would include:

- Prior to any activities with the potential to disturb ACM, the affected areas would be surveyed for asbestos, and all confirmed ACM would be removed and properly disposed of in accordance with applicable regulatory requirements. Air monitoring would be performed by New York State-licensed asbestos project air sampling technicians during all abatement of friable ACM by an independent third-party monitor not associated with the abatement contractor. Air monitoring is performed before, during, and after abatement activities. Pre-abatement monitoring establishes baseline background levels. Monitoring during abatement is intended to detect any airborne asbestos which escapes from the containment systems used to enclose the abatement area. If asbestos concentrations exceeding action levels are detected, work is stopped while barriers are inspected and restored, and any surfaces impacted by fugitive asbestos are cleaned. Post-abatement monitoring is performed to confirm that no airborne asbestos is present prior to the start of renovation or demolition.
- Activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 - *Lead Exposure in Construction*). When conducting renovation/demolition, lead-based paint is generally not stripped from surfaces. Structures are disassembled or broken apart with most paint still intact. Dust control measures (spraying the building with water) would be used during demolition. Although the lead content of any resulting dust is expected to be low, work zone air monitoring may be performed during certain demolition activities with a high potential for releasing airborne lead, such as manual demolition of walls with lead paint, or cutting of steel with lead-containing coatings. This monitoring would be performed to ensure that workers performing these activities are properly protected against lead exposure.
- Suspected PCB-containing equipment (such as fluorescent light ballasts) that would be disturbed by building renovation would be evaluated prior to disturbance. Unless labeling or test data indicate that the suspected PCB-containing equipment does not contain PCBs, it would be assumed to contain PCBs and removed and disposed of at properly licensed facilities in accordance with applicable regulatory requirements.
- Disposal of any on-site chemicals would be in accordance with applicable requirements.
- If the existing petroleum storage tanks would remain in service, these tanks would be maintained in accordance with applicable regulatory requirements. If any existing tanks are removed from service, these tanks would be properly assessed, closed and removed along with any contaminated soil, in accordance with applicable regulatory requirements including DEC requirements for spill reporting and cleanup.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECTS

The Phase II investigation identified no evidence of significant soil or groundwater contamination, with soil and groundwater constituents detected at levels generally below the most stringent guidelines. However, hazardous materials (e.g., asbestos-containing materials,

lead-based paint and/or PCB-containing items) are likely present in on-site buildings. Although contaminated materials might be encountered during demolition, excavation, and renovation, these materials would only threaten human health or the environment when exposure actually occurs, and, even then, a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. In order to prevent any such exposure pathways and unacceptable doses, the proposed projects would include appropriate health and safety and investigative/remedial measures that would precede or govern the demolition, conversion, and soil disturbance activities as described below, in addition to the measures described above in the "Future Without the Proposed Projects" section:

- Although no significant soil or groundwater contamination was identified by the Phase II, it is recommended that to minimize the potential for impacts to the community and construction workers, soil disturbance activities should be conducted under a DEP-approved RAP and CHASP. The RAP ~~would~~ provides for the appropriate handling, stockpiling, testing, transportation, and disposal of excavated materials, as well as any unexpectedly encountered tanks, in accordance with all applicable federal, state, and local regulatory requirements. Although the Phase II indicated at most low levels of VOCs in soil and groundwater, the RAP ~~should~~ specify~~ies~~ a vapor barrier ~~or other form of vapor control~~ below the~~any~~ proposed new construction to reduce the potential for vapor intrusion. The CHASP ~~would~~ includes measures to protect workers, the public and the environment, including ~~detailed~~ procedures for managing both known contamination issues and any unexpectedly encountered contamination, as detailed below. If contaminated soil is found beneath an area, any portions of the overlying project area that would not be capped with structures or paved surfaces (i.e., landscaped areas) would be covered with a layer of imported clean fill.
- Any existing petroleum storage tanks that would be removed from service as part of the proposed projects, and any unexpectedly encountered petroleum storage tanks, would be registered with DEC and/or FDNY, if required, and properly assessed, closed and removed along with any contaminated soil, in accordance with applicable regulatory requirements including DEC requirements for spill reporting and cleanup.
- If dewatering is required for construction, testing would be performed to ensure that the water would meet DEP sewer discharge requirements. If necessary, pretreatment would be conducted prior to discharge to the City's sewer system, as required by DEP permit/approval requirements.

REMEDIAL ACTION PLAN

A RAP has been prepared based on the findings of the Phase II investigation, ~~and~~ submitted to ~~would be prepared for~~ DEP for review and approved in a letter dated December 12, 2011 (see **Appendix B**). ~~approval based on the findings of the Phase II investigation~~. The RAP includes ~~It is anticipated it would include~~ the following:

WASTE MANAGEMENT

The RAP ~~would~~ addresses procedures for stockpiling, testing, loading, transporting (including truck routes), and properly disposing of all excavated material. Sampling would be performed to classify the material (e.g., as hazardous waste, petroleum-contaminated wastes, historic fill containing construction/demolition debris, or uncontaminated native soils) before disposal. The extent and parameters of this testing are dependent on the requirements of the waste disposal facilities, each of which may have different requirements for representative waste sampling and

laboratory analysis prior to accepting material for disposal. All excavated material would be handled and disposed of properly to comply with federal, state, and local environmental laws. Any waste disposal that would occur outside of New York State would be regulated by similar federal and individual state requirements.

PETROLEUM STORAGE TANKS

All known tanks requiring removal and any unexpectedly encountered underground petroleum storage tanks would be removed. Tank removal is regulated by DEC (6 NYCRR Section 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Any contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater are also subject to DEC regulations (6 NYCRR Section 611.6). Remediation of any identified spills would be completed (with all work performed under appropriate health and safety plans including air monitoring) and all documentation would be provided to properly "close" these spills with DEC.

GROUNDWATER AND VAPOR CONTROL

The Phase II identified low levels of VOCs in the soil and groundwater. Since groundwater is not used as a source of drinking water in Manhattan, the concern associated with VOCs in the subsurface is that such VOCs could migrate up from the groundwater, through the subsurface, into the existing or proposed buildings. Although the detected levels were below the most stringent guidelines (DEC Part 375 USCOs for soil and Class GA standards for groundwater), to reduce the potential for vapor intrusion, the ~~any~~ new proposed buildings would incorporate vapor barriers as ~~elements that provide~~ safeguards against such migration ~~(such as water/vapor barriers or placing residential uses above separately ventilated parking levels)~~.

CONSTRUCTION HEALTH AND SAFETY PLAN

The CHASP was submitted with the RAP to DEP for review and was approved in the letter dated December 12, 2011. The CHASP ~~would~~ describes in detail the health and safety procedures to minimize exposure of hazardous materials to workers and the public. The hazards across the project area were~~ould be~~ evaluated (using data from the Phase II investigation) by determining the subsurface contaminants of concern and their chemical and physical characteristics, and health hazards were ~~would be~~ considered within the potential exposure associated with the work to be performed. The CHASP was ~~would be~~ developed in accordance with OSHA regulations and guidelines, and ~~. The CHASP is expected to~~ includes the elements described below:

SITE SAFETY

Appropriate personnel ~~would be~~ are designated to ensure that all requirements of the CHASP would be implemented, including an on-site Site Safety Officer (SSO). The SSO ~~would be~~ is responsible for coordinating and reporting all health and safety activities ~~and would be a competent person responsible for~~including the implementation of the CHASP, ~~who would have completed the 40-hour training course for~~ per the Hazardous Waste Operations Worker ~~that meets OSHA~~ requirements codified in 29 CFR Part 1910. The SSO ~~would have~~ has stop-work authorization, which he/she ~~would~~ executes on his/her determination of an imminent safety hazard, emergency situation, or other potentially dangerous situation.

The CHASP ~~would~~ requires that on-site personnel are qualified and have received the required training. All those who enter the work area while intrusive activities were being performed must have received instruction regarding the potential hazards to health and safety. All construction personnel upon entering the site must have attended a training meeting, its purpose being to:

- Make workers aware of the potential hazards they may encounter;
- Provide the knowledge and skills necessary for them to perform the work with minimal risk to health and safety;
- Make workers aware of the purpose and limitations of safety equipment; and
- Ensure that they can safely avoid or escape from emergencies.

Each member of the construction crew would be instructed in these objectives before he/she went onto the site. The SSO or other suitably trained individuals would be responsible for conducting the training program. Others who enter the site would need to be accompanied by a suitably trained worker.

The CHASP ~~would~~ includes contingency response plans. All excavation would be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil which shows evidence of potential contamination, such as discoloration, staining, or odors. If any of these were to be detected, excavation in the area would be halted, and appropriate personnel would be notified, including the SSO and DEC. The affected area would be cordoned off and no further work would be performed at that location until the appropriate contingency response plan described in the CHASP were to be implemented. All contingency response actions would be carried out in accordance with special contingency health and safety procedures.

An emergency response plan is ~~would~~ also ~~be~~ included in the event that monitoring data indicate a potential major hazard, and protocols for reporting spills or other concerns to relevant governmental agencies are ~~would be~~ defined.

DUST CONTROL AND AIR MONITORING

To prevent the potential off-site transport of dust, dust control measures would be implemented during all earth-disturbing operations. Water would be available on-site for sprinkling/wetting to suppress dust in dry weather or as necessary. Water would be used as needed to suppress dust on the site and on equipment. All haul trucks would have tarp covers, and dust or mud would be removed from tires before leaving the site. Vehicle speeds would be limited. Any stockpiled excavated material would be securely covered with tarps or plastic sheeting to prevent dust or run-off.

Air quality monitoring during subsurface disturbance would be conducted during petroleum storage tank removal and if petroleum, solvents, or other contamination that could contain VOCs are encountered. ~~m~~Monitoring~~ed~~ would be conducted for dust (measured as respirable particulate matter of diameter less than 10 microns—PM_{10}) and VOCs ~~if petroleum, solvents or other contamination that could contain VOCs are encountered~~. Action levels were ~~would be~~ identified, and the appropriate response actions (which could include increased monitoring and/or corrective actions) established~~, which could include increased monitoring and/or corrective actions~~. Background readings and any readings that trigger response actions would be recorded in the project logbook, which would be available on-site for agency review.

Following the completion of the proposed projects, the use and storage of chemicals associated with health care uses in the O'Toole Building, the disposal of any medical or hazardous waste,

and any petroleum storage (e.g., for heating fuel or emergency generators) would be conducted in accordance with applicable regulatory requirements. If required, the storage and handling of all chemicals and petroleum-based products would be incorporated into a facility Spill Prevention, Control and Countermeasure Plan and facility operating procedures. With the performance of the work in accordance with the above, no significant hazardous materials impacts are expected to result from the proposed projects. ✷