Chapter 7: Hazardous Materials

A. INTRODUCTION

This section assesses hazardous materials issues related to the proposed project, specifically the potential presence of hazardous materials in the existing project site buildings or in the soil or groundwater beneath them.

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 "contaminated material," but should not be confused with the term "hazardous waste," which is a regulatory term for a subset of wastes with certain properties or contained on certain lists.

To identify any potential environmental concerns resulting from past or current on- and off-site operations, the following reports were reviewed: March 2005 *Phase I Environmental Site Assessment* (ESA) and July 2006 *Phase II Site Assessment*, prepared by Quay Consulting; May 2010 *Final Asbestos-Containing Materials Survey Report* prepared by CHA; and an April 2011 *Draft Environmental Assessment* (EA) prepared by the Army National Guard Environmental Programs Division.

The Phase I included a visual inspection of the project site; a review of available records and historical maps to determine previous on-site and adjacent land uses; and an evaluation of regulatory databases for the project site and neighboring properties. The Phase II included results of laboratory analyses of soil, groundwater, and polychlorinated biphenyl (PCB) wipe samples. The asbestos survey included the results of laboratory analysis of suspect asbestos-containing materials from the Building B and the Timber Shed structures.

The proposed project would entail the rehabilitation and/or reconstruction and adaptive reuse of two existing buildings, demolition of the remaining structures, and construction of three new buildings that would involve subsurface disturbance.

As described in detail below, the proposed project would include appropriate health and safety and investigative/remedial measures that would precede or govern demolition, renovation, and soil disturbance activities on the project site. With the implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to result from the proposed project. Following construction, there would be no potential for significant adverse impacts.

B. EXISTING CONDITIONS

The project site has been unused for over 20 years, and the structural condition of the existing buildings is generally severely deteriorated. The site structures, in addition to former residences, include a building formerly used for timber storage for shipbuilding (the Timber Shed) and previously included Building 198, a maintenance and shower building that later was converted

to a transformer substation. Building 198 has been demolished, and its former location is currently being remediated by the United States Army-National Guard Bureau (NGB) for PCBs.

The project site is located approximately 10 feet above sea level. Groundwater, first encountered at a depth of between 3 and 7 feet during the Phase II, would be expected to flow toward the East River, located approximately 1,100 feet from the project site. Some of the Phase II borings encountered fill materials (e.g., brick and other construction debris) in shallow soils.

The U.S. government acquired the project site in 1801 for use by the Navy, and it was subsequently developed with officers' houses. The Phase I concluded that on-site activities that could have resulted in environmental impairments were limited to releases from the site's electrical transformers, historical fill materials, potential asbestos containing material (ACM) in the structures and steam lines, and lead-based paint.

The Phase I identified the project site as listed in the New York State Inactive Hazardous Waste Disposal Site Registry (New York State Department of Environmental Conservation [DEC] Site I.D. No. 224019) as a "P" (potential) site that would require investigation prior to future development. This listing was related to the presence of transformers that may include PCB containing oils. No spills were reported for the project site, but spills and other sites listed under various programs were reported in the vicinity. No aboveground or underground tanks were observed on the project site or noted in regulatory databases or on historical maps. The Phase I did note the presence of waste oil drums and solid wastes, including spent sandblast material during the site inspection. The site is no longer listed on the Inactive Hazardous Waste Disposal Site Registry, as indicated in the EA.

The Phase II included the results of 18 soil samples, 4 groundwater samples, and 12 wipe samples (in the vicinity of two oil filled transformers in Building 198).

Soil sampling results indicated:

- Levels of volatile organic compounds (VOCs) were well below 6 NYCRR Part 375-6 Restricted Use Commercial Soil Cleanup Objectives (SCOs). Xylene was detected in one sample at 0.01 parts per million (ppm)—the SCO is 500 ppm. Acetone and methylene chloride were detected (at levels less than one thousandth of the SCO) in multiple samples but were seemingly indicative of laboratory contamination.
- Semi volatile organic compounds (SVOCs) were detected in all soil samples, but only one compound was found in excess of its SCO: benzo(a)pyrene at 17 ppm (SCO 1 ppm). All of the detected SVOCs were polycyclic aromatic hydrocarbons (PAHs) and the levels detected were typical of the type of historical urban fill materials likely to be present on the project site.
- Metals levels were below SCOs with the exception of the arsenic level in one sample: 17.8 ppm (SCO 16 ppm). Other metals were detected at levels below SCOs, but at levels typical of historical urban fill materials.
- PCBs were detected at a level of 470 ppm (above the SCO of 1 ppm and the hazardous waste threshold of 50 ppm) in a sample collected in Building 198. PCBs were not detected at any other location.
- Pesticides were detected in some soil samples, but at levels well below SCOs. Herbicides were not detected in any soil samples.

Groundwater sampling results indicated:

- No VOCs, SVOC, PCBs or pesticides were detected.
- Levels of metals exceeded 6 NYCRR Part 703.5 Groundwater Standards for antimony, iron, lead, manganese and sodium. These results are likely indicative of historical fill materials, excessive sediment in the samples, and/or regional groundwater conditions. They do not appear to be related to site soil conditions or appear to indicate a site release.

Wipe sampling results indicated that all six concrete wipe samples collected in the vicinity of the transformer known to have had fluids containing PCBs exceeded the applicable standard: 36 to 490 mg/wipe, standard 10 mg/wipe. The other six samples (collected in the vicinity of the other transformer in Building 198) had PCB levels less than one thousandth of the standard.

The Asbestos Survey confirmed the presence of ACM in Building B and the Timber Shed, including pipe insulation, floor tiles, and roofing materials. The Phase I also identified the potential for lead-based paint (LBP) to be present.

The EA indicates that two of the several soil piles on a concrete pad to the north of the Timber Shed appeared to contain stained soils and will undergo additional analysis and potentially be removed and disposed of off-site by the NGB.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

This analysis assumes that without the proposed project, the project site would remain unused. Currently, there are no known significant health risks associated with the site. Likewise, there would be no significant health risks at the project site in the future without the proposed project. Remediation of the former Building 198 site and potential removal of soil piles will occur, further reducing the potential for adverse impacts.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed project would involve demolition of the majority of the existing structures on the project site. These structures may contain lead-based paint, asbestos-containing materials, and PCB-containing fluorescent lighting fixtures. Various earthmoving/excavating activities and dewatering for the construction of the proposed new buildings would be required.

Although the above activities might encounter contaminated materials, these materials 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 doses, the proposed project would include appropriate health and safety and investigative/remedial measures that would precede or govern the demolition, renovation, and soil disturbance activities as described below:

- Suspect ACM that would be disturbed by the proposed renovation or demolition activities would be surveyed for asbestos, and all confirmed ACM would be removed and disposed of in accordance with all applicable regulatory requirements. In accordance with New York City requirements, air monitoring would be performed during all abatement of friable ACM by an independent third-party monitor not associated with the abatement contractor. All monitoring would be performed by New York State-licensed asbestos project air sampling technicians. Air monitoring is generally 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.

- Any project 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 demolition (unlike lead abatement work), 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. The lead content of any resulting dust is therefore expected to be low. Work zone air monitoring for lead may be performed during certain demolition activities with a high potential for releasing airborne lead-containing particulates in the immediate work zone, 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 transformers and other electrical equipment including fluorescent light ballasts) that would be disturbed by building renovation or demolition 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 all applicable regulatory requirements.

  As mentioned above, the former site of Building 198 is currently being remediated by the NGB independent of the proposed project; activities have included or will include removal and disposal of an electrical transformer, the building itself, and PCB-contaminated soil. According to the NGB, additional measures, such as removal of any soil piles found to be contaminated, will be determined as the remediation progresses.
- With the exception of the one area of PCB-contaminated soil, which is being addressed by the ongoing federal cleanup, the Phase II investigation revealed only limited contamination of soil/groundwater, consistent with historical urban fill materials. As a contingency against finding unexpected sources of contamination, soil disturbance activities would be conducted under a Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP), which would be submitted to and approved by the New York City Department of Environmental Protection (DEP). The RAP would include procedures for managing wastes including excavated soil. These would include procedures for handling, stockpiling, reuse or transportation and disposal of excavated material, as well as contingency measures should contamination or petroleum storage tanks be encountered. The CHASP would include measures to protect workers, the public, and the environment, including detailed procedures, such as monitoring, for managing both known contamination issues and any unexpectedly encountered contamination. If additional soil remediation is required by the DEP or the New York City Office of Environmental Remediation (OER) to meet more stringent criteria than used by the federal cleanup, additional excavation and additional endpoint testing would be performed.
- Any portions of the proposed project site that would not be capped with structures or paved surfaces would be covered with a layer of imported clean fill.

- Any petroleum storage tanks unexpectedly encountered would be registered with the DEC and/or the New York City Fire Department, if required, and properly assessed, closed, and removed along with any contaminated soil, in accordance with all 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 groundwater 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.

The above measures would be implemented by the Brooklyn Navy Yard Development Corporation (BNYDC) or incorporated into the lease or other legally binding agreement between it and a developer to be designated pursuant to a Request for Proposals. With their implementation prior to and/or during demolition, renovation, and excavation no significant adverse impacts related to hazardous materials would be expected to result from the proposed project. Following construction, there would be no potential for significant adverse impacts. ✷