Chapter 4: Hazardous Materials

A. INTRODUCTION

This chapter addresses the potential for the presence of hazardous materials resulting from previous and existing uses at or near Projected Development Site 1 (Block 2415, Lot 1; the Proposed Project) and/or Projected Development Site 2 (Block 2415, Lot 6) (collectively, "the Sites"), and potential risks with respect to any such hazardous materials. As described in Chapter 1, "Project Description," the Proposed Project would result in demolition of the existing single-story warehouse building located on Projected Development Site 1, to be followed by the construction of a new nine-story mixed-use building, with a partial cellar. The Proposed Actions could also result in demolition and redevelopment at Projected Development Site 2. No demolition or subsurface disturbance would be anticipated at other lots in the proposed rezoning area.

This assessment is based on an April 2019 *Phase I Environmental Site Assessment* (ESA) of the Sites and a February 2021 *Subsurface (Phase II) Investigation* and March 2021 *Remedial Action Plan* (RAP) of Projected Development Site 1, all prepared by AKRF, Inc. An ESA documents the findings of a reconnaissance of a site and an evaluation of readily available historical information and selected environmental databases and electronic records, in accordance with American Society for Testing and Materials (ASTM) E1527-13. A Phase II consists of the collection and laboratory analysis of soil, groundwater and soil vapor samples. A RAP sets out the procedures that would be followed during subsurface disturbance that would be associated with new construction. For Projected Development Site 1, the Applicant will commit to implementing the RAP and Construction Health and Safety Plan (CHASP), which are anticipated to be approved by the NYC Department of Environmental Protection (DEP) in advance of the issuance of the Final Environmental Impact Statement (FEIS).

As noted in Chapter 1, "Project Description," and in Attachment G, "Hazardous Materials," of the Environmental Assessment Statement, an (E) Designation (E-592) would be mapped on Projected Development Site 2 to prevent any potential significant adverse impacts to hazardous materials resulting from the potential redevelopment by requiring that such redevelopment occur with the oversight of the New York City Office of Environmental Remediation (OER).

B. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The Sites—based on the U.S. Geological Survey Brooklyn, NY Quadrangle map—are approximately 20 feet above mean sea level. The Sites are generally flat, with the ground sloping slightly downward to the west, toward the East River, located approximately 200 feet away. Based on the Phase II investigation subsurface materials consist of apparent historical fill (sand with trace brick, gravel, asphalt, silt, and concrete) to a depth of between approximately 5 and 10 feet below grade (fbg), underlain by sand, gravel, and/or silt extending to the maximum boring depth (between approximately 25 and 30 fbg). Groundwater was encountered at approximately 22.5 fbg,

and is assumed to flow in a westerly direction towards the East River (but may be influenced by tides or other factors). Groundwater in the vicinity is not used as a source of potable water.

PHASE I ESA, APRIL 2019

AKRF, Inc. prepared a Phase I ESA for the Sites in April 2019. It identified evidence of Recognized Environmental Conditions (RECs), i.e., "the presence or likely presence of hazardous substances or petroleum products in, on, or at a property," including the following:

- Historical Sanborn fire insurance maps and City Directories identified prior on-site industrial/automotive uses between circa 1904 and 1985 with potential to have affected the property subsurface, including a tin ware manufacturing facility and a ball bearing manufacturing warehouse at Projected Development Site 1 and a junkyard at Projected Development Site 2.
- Historical Sanborn fire insurance maps and City Directories identified nearby historical industrial/automotive uses, including a "whiting manufacturer" (subsequently a "bung manufacturer"), garages and warehouses with gasoline tanks, iron, paper and bottling works, a truck parking lot, a broom factory (subsequently a printer) and miscellaneous manufacturing uses elsewhere on Block 2415. The surrounding area contained a mixture of predominately industrial uses, including the Domino Sugar Refinery (this facility is also listed in the regulatory database information for petroleum/chemical storage and numerous spills) on blocks to the north, west and south.
- The regulatory database information identified a generator of electroplating hazardous wastes approximately 200 feet east of the Sites.

Other on-site environmental concerns included:

- The subsurface of either Site could include buried debris from former on-site structures, unidentified underground storage tanks (USTs) and/or historical fill of unknown origin; and
- Based on the age of the current buildings on the Sites, asbestos-containing materials (ACMs), lead-based paint (LBP) and/or polychlorinated biphenyls (PCBs) may be present within building components.

SUBSURFACE (PHASE II) INVESTIGATION, FEBRUARY 2021

A September 2019 Work Plan for this investigation of Projected Development Site 1 was prepared by AKRF, Inc. and submitted to the DEP for review. The agency approved the Work Plan in a letter dated December 3, 2019. The investigation included the advancement of six soil borings, the installation of four soil vapor points, and installation of one temporary well, with collection of fifteen soil, four soil vapor, and one groundwater sample for laboratory analysis.

Subsurface materials consisted of apparent historical fill (sand with trace brick, gravel, asphalt, silt, and concrete) to a depth of between approximately 5 and 10 fbg, underlain by sand, gravel, and/or silt extending to the maximum boring depth (between approximately 25 and 30 fbg). No signs of petroleum-contamination were observed in any of the borings. Groundwater was encountered at approximately 22.5 fbg; no evidence of contamination (e.g., sheen or floating product) was noted in the purged groundwater or the groundwater sample.

Laboratory analytical results from the 15 soil samples were compared to the Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Soil Cleanup Objectives (RRSCOs) contained in Sections 6.8(a) and 6.8(b) of 6 NYCRR Part 375.

- The only volatile organic compounds (VOC) detected was methylene chloride in two soil samples, with one exceeding the UUSCO, but not the RRSCO. Methylene chloride can be associated with fill materials, but is more frequently a laboratory artifact.
- Nineteen semivolatile organic compounds (SVOCs) were detected in one or more soil samples. There were exceedances of both UUSCOs and RRSCOs, but only for certain polycyclic aromatic hydrocarbons (PAHs), a class of compounds associated with combustion byproducts (e.g., ash) commonly found in urban fill materials.
- Nineteen metals were detected in one or more samples, but only five metals exceeded UUSCOs and/or RRSCOs. Of note, the concentration of lead exceeded the RRSCO in two samples and the levels found indicate the potential for the levels of leachable lead to exceed hazardous waste thresholds in some soils that might need to be excavated as a part of future construction; while the exceedances of soil hazardous waste thresholds are not directly related to potential exposure risks, separate disposal at a regulated facility accepting this material may be required during soil removal activities.
- Total polychlorinated biphenyls (PCBs) were detected above the UUSCO and RRSCO in one sample (likely related to the fill material). No pesticides were detected in any of the soil samples.

Analytical results from the groundwater sample were compared to the NYSDEC Class GA Ambient Water Quality Standards and Guidance Values (AWQSGVs) contained in the NYSDEC Division of Water Technical Operational and Guidance Series (TOGS) 1.1.1. The AWQSGVs were developed for drinking water; because the groundwater at the site (and this area of Brooklyn) is not used for drinking water, the AWQSGVs are referenced for comparison purposes but are not applicable to the groundwater at the Site.

- Seven VOCs (primarily chlorinated compounds) were detected but only cis-1,2-DCE was above its AWQSGV.
- Four SVOCs (primarily PAHs) were detected, but all were below AWQSGVs.
- Sixteen metals were detected in the unfiltered sample, four of which (iron, manganese, sodium, and selenium) exceeded AWQSGVs. Only sodium exceeded its AWQSGV in the filtered sample.
- No PCBs or pesticides were detected.

The results of the four soil vapor samples were compared to the values in NYSDOH 2006 Guidance for Evaluation Soil Vapor Intrusion, as updated through May 2017. Detected VOCs included petroleum-related compounds, solvents and common refrigerants/propellants. Of note, some of the detected levels of tetrachloroethylene (PCE) and trichloroethylene (TCE), based on the NYSDOH Decision Matrices developed for comparison of soil vapor and indoor air data, indicated that these concentrations beneath a newly constructed building could require mitigation (but the levels found indicated concentrations in the existing building would be orders of magnitude below allowable occupational exposure levels).

C. FUTURE WITHOUT THE PROPOSED ACTIONS

Absent the Proposed Actions, no new development is anticipated to occur within the Project Area. Existing buildings and uses would be anticipated to remain. Regulatory requirements relating to petroleum tanks, ACM, LBP, PCBs, and other hazardous materials would continue to apply, but without the subsurface disturbance associated with the Proposed Actions, the potential for

exposure (to construction workers and the community) to any subsurface hazardous materials would not occur.

D. FUTURE WITH THE PROPOSED ACTIONS

In the Future with the Proposed Actions, Projected Development Site 1 would undergo demolition followed by ground disturbance for construction of a new mixed-use building (which would include a partial cellar) containing light industrial, office, community facility, and retail uses. Additionally, Projected Development Site 2 could undergo demolition and be redeveloped with a nine-story mixed-use building containing office, community facility, and retail uses. The potential for impacts related to hazardous materials would be avoided by incorporating the following as part of the Proposed Actions:

- Prior to any demolition, existing buildings would be surveyed for asbestos by a NYC-certified asbestos investigator and any ACM would be removed and disposed of prior to demolition in accordance with local, state and federal requirements.
- Any demolition would be performed in accordance with applicable LBP requirements (including federal OSHA regulation 29 CFR 1926.62–Lead Exposure in Construction).
- Unless there is labeling or test data indicating that any suspect PCB-containing electrical equipment and fluorescent lighting fixtures do not contain PCBs, and that any fluorescent lighting bulbs do not contain mercury, disposal of these items would be conducted in accordance with applicable federal, state, and local requirements.
- For Projected Development Site 1, the Subsurface (Phase II) Investigation report along with a Remedial Action Plan (RAP) have been submitted to DEP for review and approval. The RAP incorporates a CHASP. These plans set out procedures to be followed to avoid the potential for adverse impacts related to the hazardous materials identified by the Subsurface (Phase II) Investigation as well as other hazardous materials that could be (unexpectedly) encountered. The RAP addresses requirements for items such as soil management (including stockpiling, handling, transportation and disposal), dust control and air monitoring, and contingency measures should USTs or soil contamination be encountered. Based upon the results of the soil vapor testing, the RAP includes requirements for a vapor barrier around the foundation elements and a Sub-Slab Depressurization System (SSDS) to avoid the potential for soil vapor intrusion into the new structure. The CHASP presents a hazard assessment for the construction workers and set out the requirements for real-time air monitoring for respirable dust and/or VOCs; if evidence of contamination (i.e., petroleum-like odors, staining, sheens or other field evidence of potential contamination) is encountered during subsurface excavation associated with redevelopment, monitoring would be performed during its disturbance. Results of this air monitoring would be used to determine appropriate response actions for workers and the community. The Applicant will commit to implementing the RAP and CHASP, which are anticipated to be approved by DEP in advance of the issuance of the FEIS.
- For Projected Development Site 2, an (E) Designation for hazardous materials (E-592) would be placed on the NYC Zoning Map as part of the Proposed Actions to ensure requirements pertaining to hazardous materials would be addressed during any future redevelopment involving soil disturbance. The (E) Designation would impose pre- and post-construction requirements overseen by OER applicable to any future redevelopment at Projected Development Site 2. It would require that a Remedial Investigation (RI) be conducted including the collection of soil, groundwater, and soil vapor samples with laboratory analysis

for a full suite of analytical parameters. Prior to such testing, an RI Work Plan (RIWP) and Health and Safety Plan (HASP) for the investigation would be submitted to OER for review and approval. Based on the results of the RI, a Remedial Action Work Plan (RAWP) and associated CHASP would be prepared for implementation during the subsurface disturbance associated with construction. The RAWP and CHASP would address requirements for items such as petroleum tank removal, dust control, and contingency measures should unforeseen petroleum tanks or soil contamination be encountered. The RAWP would also include any necessary requirements for vapor controls should the RI reveal the potential for soil vapor intrusion. The RAWP and CHASP would be subject to OER approval and, following construction, occupancy permits could only be issued once OER received documentation that the RAWP was properly implemented in a Remedial Action Report (RAR).

- For both Sites, as a part of the RAP (for Projected Development Site 1) or as a part of the (E) Designation requirements (for Projected Development Site 2), prior to or during subsurface disturbance associated with redevelopment, removal of all known petroleum storage tanks and any unforeseen petroleum storage tanks encountered during site excavation would be performed in accordance with applicable regulatory requirements including NYSDEC requirements relating to spill reporting and tank registration, as applicable.
- For both Sites, if dewatering were to be necessary for the proposed construction, water would be discharged to sewers in accordance with DEP requirements.

The (E) Designation program is administered by OER. Approval of a hazardous materials remedy (described in the RAWP and CHASP) by OER is required prior to the granting of building permits by the Department of Buildings. The text of the (E) Designation for hazardous materials for Projected Development Site 2 would be as follows:

- ***Task 1***

  The applicant submits to OER, for review and approval, a Phase 1 ESA for the Project Site along with a soil, soil gas and groundwater testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

- ***Task 2***

  A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER. If remediation is indicated from the test results, a proposed remediation plan must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation (i.e., a closure report) that the work has been satisfactorily completed.

E. CONCLUSION

With the measures outlined above included as part of the Proposed Actions, no significant adverse impacts related to hazardous materials would be anticipated to occur. For Projected Development Site 1, a Phase II Investigation report has been submitted to DEP along with a RAP (incorporating a CHASP), which would be implemented during subsurface work associated with redevelopment. Remedial activities for the Projected Development Site 2 would be conducted in coordination with and subject to OER approval, as outlined in Tasks 1 and 2 above, including the submittal of a RIWP, the implementation of the RI and completion of a RAWP prior to or in connection with ground disturbance associated with redevelopment. ✷