Chapter 9 : Hazardous Materials

I. INTRODUCTION

This chapter assesses the potential for the presence of hazardous materials in soil, groundwater, and/or soil vapor at the Project Site. The chapter further evaluates the potential for hazardous materials impacts resulting from the proposed series of land use actions (the "Proposed Actions"). According to guidance in Chapter 12 of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, a hazardous materials assessment is necessary when a proposed action could lead to increased exposure of people or the environment to hazardous materials, or whether increased exposure would lead to significant public health impacts or environmental damage.

As described in Chapter 1, "Project Description," the Applicant is seeking a set of Proposed Actions in the form of discretionary approvals to include zoning map and text amendments, a large-scale general development (LSGD) special permit, a City Map Amendment to re-establish a portion of Beach 52nd Street south of Rockaway Beach Boulevard to reconnect with Rockaway Freeway, and public funding and/or financing from various City and New York State agencies and/or programs related to affordable housing development on the Project Site. The Project Site is situated in Queens Community District 14 (CD 14). The Proposed Actions would facilitate the Proposed Project to consist of an approximately 2,371,000 gross square feet (gsf) development on the Project Site, comprised of 11 buildings with approximately 2,200 income-restricted dwelling units (DUs), of which 1,927 DUs would be income-restricted up to 80% of the Area Median Income (AMI), to include approximately 201 DUs set aside for Affordable Independent Residences for Seniors (AIRS) senior housing, with the remaining 273 DUs restricted to income levels not exceeding 130% of AMI. In addition to the residential DUs, the Proposed Project would include approximately 72,000 gsf of retail space, including a fitness center and a supermarket, approximately 77,000 gsf of community facility space, approximately 24,000 square feet (sf) of publicly-accessible open space, and approximately 973 accessory parking spaces.

The Proposed Project would require ground disturbance and excavation on the Project Site, comprised of Lot 1 of Block 15842, Lot 1 of Block 15843 ("the North Parcels"), and Lot 1 of Block 15857 (the "South Parcel"). Since this subsurface disturbance and excavation would have the potential to disturb soils contaminated with one or more pollutants, a hazardous materials assessment was prepared in conformance with the 2014 *CEQR Technical Manual* guidelines.

II. PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in significant adverse impacts due to hazardous materials upon implementation of Brownfield Cleanup Agreement and placement of (E) designation on the Project Site. The presence of on-site hazardous materials was confirmed based on the findings of Phase II Environmental Site Assessment (ESA) investigations conducted on the North and South Parcels of the Project Site. Construction of the Proposed Project would require ground disturbance, in which presents the potential for disturbance of on-site hazardous materials. As of October 5, 2017, the North Parcels were accepted to the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) (Site No. C241200) and a Brownfield Cleanup Agreement (BCA) has been executed. Additionally, an (E) designation will be mapped on the North Parcels, pursuant to Section 11-15 of the NYC Zoning Resolution, to ensure that testing and mitigation will be provided as necessary prior to any future development and/or soil disturbance at the Project Site in the event the Applicant withdraws its participation in the BCP.

The South Parcel of the Project Site has not been enrolled into the BCP, and as such a Remedial Action Plan (RAP) and site-specific Construction Health and Safety Plan (CHASP) will be submitted to the Mayor's Office of Environmental Remediation (OER) for review and approval. Therefore, given the acceptance of the North Parcels into the BCP and the (E) designation mapped on the entire Project Site, the Proposed Project would not result in a significant adverse impact related to hazardous materials.

III. METHODOLOGY

The Project Site comprises 9.41 acres to include the North Parcels, consisting of Lot 1 of Block 15843 and Lot 1 of Block 15842, as well as the South Parcel, consisting of Lot 1 of Block 15857. The potential for the Proposed Project to increase the exposure of people or the environment to hazardous materials, resulting in potential significant adverse impacts to public health or the environment, is evaluated based on the findings of the Phase I and Phase II ESAs (see DEP consultation letters and executive summaries of Phase I and II ESAs in **Appendix D**).

The Phase I ESAs were prepared in general accordance with the scope and limitations of the American Society for Testing and Materials (ASTM) International Standard Practice E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and the "due diligence" regulations of the Comprehensive Environmental Response, Compensation and Liability Act and Section 9601 (35)(b) of the Superfund Amendments and Reauthorization Act.

The purpose of the Phase I ESA is to identify Recognized Environmental Conditions (RECs) in connection with the subject property based on an assessment of existing conditions of the Project Site and surrounding properties following site reconnaissance. Additionally, the Phase I ESAs incorporate reviews of regulatory environmental databases, historical records, interviews, reviews of previous environmental reports or documentation, should they be available, and review of property records or environmental liens.

The ASTM Standard Practice E 1527-13 defines RECs as follows:

- ***REC.*** The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to the release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment;
- ***Historical REC (HREC).*** The past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls, and,
- ***Controlled REC (CREC).*** RECs resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

Conditions determined to be *de minims conditions* are not considered to be RECs. A *de minimis condition* is defined by ASTM E 1527-13 as a condition that generally does not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

The following investigations were conducted for the Project Site:

North Parcels

Block 15843, Lot 1

- *Phase I Environmental Site Assessment: 51-15 Beach Channel Drive, Far Rockaway, New York, Block #15843 Lot #1*, dated October 21, 2015, prepared by PVES/Lawrence; and,
- *Subsurface Investigation (Phase II ESA); 51-15 Beach Channel Drive, Far Rockaway, New York,* dated November 24, 2015, prepared by PVES/Lawrence.

Block 15842, Lot 1

- *Phase I Environmental Site Assessment for the Property Located at Rockaway Beach Boulevard/ Beach 50th Street, Far Rockaway, New York,* dated March 2016, prepared by FPM; and,
- *Phase II Investigation Report: Queens Block 15842, Lot 1, Far Rockaway, New York*, dated April 12, 2016, prepared by FPM.

South Parcel

Block 15857, Lot 1

- *Phase I Environmental Site Assessment for the Property Located at 51-17 Rockaway Beach Boulevard, Far Rockaway, New York*, dated January 2018, prepared by FPM;
- *Phase II Investigation Report: Queens Block 15857, Lot 1, Far Rockaway, New York,* dated March 28, 2018, prepared by FPM; and,
- *Supplemental Phase II Environmental Site Assessment Investigation Report: Prepared for 51-17 Rockaway Beach Boulevard, Far Rockaway, New York, 11691,* dated February 2019, prepared by FPM.

IV. EXISTING CONDITIONS

North Parcels

Block 15843, Lot 1

According to U.S. Geological Survey (USGS) mapping, the topographic elevation of the subject property and its vicinity is approximately seven feet above mean sea level, with depth to groundwater at approximately five feet below ground surface and regional groundwater flow direction towards the north, northwest. The subject property comprises an approximately 309,500 sf area, consisting primarily of historic fill. Subsurface investigations encountered brown sand with increasing concentrations of dark gray sand further below ground surface.

The October 2015 Phase I ESA identified RECs in connection with the subject property located on Lot 1 of Block 15843. Based on the findings of the Phase I ESA, a Phase II ESA was prepared in November 2015. Phase II ESA findings are summarized below:

- Soil vapor (SV) sample analysis detected the presence of VOCs at concentrations exceeding both the Median Results and 99th Percentile Results described in New York State Department of Health (NYSDOH) guidance documents. Trichloroethane (TCA) was detected at concentrations which will require mitigation in accordance with NYSDOH guidance documents;

- Multiple soil samples contained concentrations of VOCs and SVOCs exceeding NYSDEC CP-51 Soil Cleanup Objectives (SCOs); and,
- Two USTs appear to be abandoned in place beneath the parking/bay door adjacent to the southernmost portion of the hospital. Based on field observations and analytical results, either the piping or the 10,000-gallon fuel oil tank(s) have leaked, resulting in soil contamination at the subject property.

Based on the Phase II ESA investigation, the potential for SVI exists at the subject property to adversely impact indoor air quality should the site be improved with a structure that is occupied on the ground floor level. Additional sampling of indoor air would be necessary to determine if vapor intrusion currently exists. Required mitigation per NYSDOH guidance would consist of the installation of a sub-slab depressurization system and vapor barrier in future developments on the subject property. Additionally, soil excavation at the site is to be handled and disposed of off-site in accordance with applicable rules and regulation following proper soil classification. The identified spill resulting from the two leaking, 10,000-gallon USTs on-site was reported to the NYSDEC, documented as an open spill listing for the site as of November 24, 2015 (Spill #15-08760). The spill record remains open.

Block 15842, Lot 1

According to USGS mapping, the topographic elevation of the subject property and its vicinity is approximately five feet above mean sea level, with depth to groundwater at approximately five feet below ground surface and regional groundwater flow direction towards the north. The water table is the upper limit of the groundwater reservoir and is bounded by impervious bedrock located approximately 150 feet below mean sea level. The subject property comprises approximately 71,721 sf, consisting primarily of historic fill. Subsurface investigations encountered historic fill up to an approximate depth of three feet beneath the entire site to consist of sand, angular gravel, slag, brick, concrete and/or asphalt.

The March 2016 Phase I ESA identified a REC in connection with the subject property. Based on the findings of the Phase I ESA, a Phase II ESA was conducted to collect and analyze soil, groundwater, and soil vapor for potential contamination as a result of the identified REC. Findings of the April 2016 Phase II ESA concluded with the following findings for the subject property located on Lot 1 of Block 15842:

- None of the soils observed exhibited visible indications suggestive of potential contamination;
- Historic fill containing asphalt, brick and concrete is present up to approximately three feet below ground surface throughout the property. Chromium, lead, and/or zinc were noted above the NYSDEC SCOs for unrestricted use, but not above restricted residential or commercial use, in samples of historic fill from soil boring (SB) samples SB-2, SB-3, and SB-6. These impacts are consistent with the general nature of historic fill and are not suggestive of a significant on-site source of these metals. None of the VOCs or SVOCs detected in the historic fill samples exceeds NYSDEC SCOs;
- Groundwater is found at about four feet below grade at the property. None of the VOCs detected in the groundwater samples exceeds the NYSDEC standards; and,
- Several VOCs were detected in the soil vapor samples collected from the property. Carbon Tetrachloride (CT), trichloroethylene (TCE), and tetrachloroethylene (PCE) were detected in some of the soil vapor samples at low levels for which the NYSDOH would either require no further action or reasonable and practical actions to be undertaken to identify sources and reduce exposures (depending on the indoor air concentrations of CT, TCE, and PCE). None of the VOC levels detected in soil vapor is suggestive of an on-site source of contamination.

Based on the Phase II ESA investigation, sample analysis results for soil and groundwater collected from the subject property identified contamination levels below NYSDEC standards, and soil vapor contamination at levels below NYSDOH standards. Thus, contamination identified on the site is not indicative of on-site sources of contamination to warrant further investigation or remedial measures.

South Parcel

Block 15857, Lot 1

According to USGS mapping, the topographic elevation of the subject property and its vicinity is approximately five feet above mean sea level, with depth to groundwater at approximately five feet below ground surface and regional groundwater flow direction towards the north. The water table is the upper limit of the groundwater reservoir and is bounded by impervious bedrock located approximately 150 feet below mean sea level. The subject property comprises approximately 17,774 sf, consisting primarily of historic fill. Subsurface investigations encountered historic fill up to an approximate depth of three feet beneath the entire site to consist of sand, angular gravel, slag, brick, concrete and/or asphalt.

The January 2018 Phase I ESA identified RECs in connection with the subject property. Based on the findings of the Phase I ESA, a limited Phase II ESA was conducted in March 2018 and supplemental investigation was conducted in January 2019.

The March 2018 limited Phase II Investigation concluded with the following findings:

- The property is nearly entirely covered by a one-foot thick concrete slab and/or pavers associated with the former buildings. Historic fill containing slag, brick and concrete is present generally between 1 and 3 feet below grade throughout the property. The fill typically contains SVOCs, metals, and/or pesticides at concentrations exceeding the NYSDEC's unrestricted use, restricted residential use, and/or commercial use SCOs. These impacts are typical of historic fill in the NYC metro area, which is often contaminated by anthropogenic materials;

- The sediments in catch basin CB-3 and beneath drywells B3 and B4 are impacted with SVOCs, metals, VOCs, and/or pesticides; it is likely that these constituents are being concentrated via stormwater discharges to these structures. Additional catch basins and three suspected former sewer pits are also present on-site;

- Soil contaminated with petroleum-related and chlorinated solvent VOCs, SVOCs, and metals is present at boring B9 to a depth of approximately 11 feet below grade. Although the SVOC and metals impacts are likely related to historic fill, the VOC impacts appear to indicate a release of petroleum and chlorinated solvents at this location, perhaps in conjunction with the former use of the property by a paint and chemical company. Some of the same VOCs were also found in nearby drywell B4, suggesting that these impacts extend somewhat to the north of B9. VOC impacts exceeding NYSDEC SCOs were not found in the borings to the south, east or northeast of B9, indicating that the source material is limited in these directions;

- Groundwater is generally found at a depth of approximately five feet below grade. Elevated concentrations of both chlorinated and petroleum-related VOCs exceeding the NYSDEC standards were detected at GW-7, which is in immediate proximity to the B9 source material. These results indicate that the material at B9 is a source of groundwater contamination at the property;

- Slightly elevated concentrations of chlorinated VOCs that appear to be related to the B9 source area were detected on the northeastern portion of the property and indicate that the direction of groundwater flow is to the northeast. One petroleum-related VOC was detected at a level slightly above its NYSDEC Standard at GW-8. This location is approximately 20 feet south-southwest of the B9/GW-7 location and the absence of significant groundwater impacts in this direction further

suggests that the groundwater flow direction is primarily to the northeast. VOC impacts were not found at the GW-3 through GW-6 locations, suggesting that the plume of VOCs in groundwater is narrow and well-defined;

- The concentrations of VOCs in groundwater decrease significantly from the 89/GW-7 source area to the northeast (downgradient) and only one VOC slightly exceeds its NYSDEC standard at the most northeasterly sampling point (GW-1). Furthermore, the VOCs detected at the downgradient locations consist primarily of breakdown products from the chlorinated solvent found in the source area (TCE). This pattern suggests that the groundwater impacts are confined to the property and are unlikely to extend off-site, and that the TCE is breaking down as it migrates in groundwater.; and,

- VOCs were detected in five of the seven soil vapor samples collected from the property at levels that could present a concern for SVI. TCE was noted to be present at the highest concentrations and all of the VOCs that present SVI concerns were found in the soil and/or groundwater at the property. The highest levels of VOCs, including both chlorinated solvents and petroleum compounds, were found at SV-7, which is in immediate proximity of the B9 source area.

The January 2019 Supplemental Phase II ESA Investigation Report concluded with the following findings:

- Soil impacted by chlorinated solvents and some petroleum VOCs and SVOCs is present in borings B3N, B3E, B3S, and B3W in the B3 drywell area. The impacts exceed the unrestricted use and protection of groundwater SCOs, with some of the SVOC detections also exceeding the restricted residential and/or commercial use SCOs. One metal (zinc) detection exceeds its unrestricted use SCO in boring B3W. The impacts were generally noted in the interval to about 4 feet below grade, with some exceedances also noted in the 4 to 6-foot interval at B3N and B3E. This impacted area appears to be a source for groundwater VOC impacts noted at GW-15 and GW-16 and for soil vapor impacts;

- Soil impacted by petroleum-related VOCs and SVOCs, PCBs, one pesticide and two metals is present in boring B9N. VOC (including TCE), SVOC and metals impacts were also noted in the nearby boring B9 and the CB-4 drywell. The impacts appear to coincide with paint/petroleum odors in the interval from 2 to 8 feet below grade in the borings. This impacted area appears to be a source for groundwater VOC impacts primarily noted at GW-7, GW-10, GW-13, and GW-2 and soil vapor impacts. No impacts were identified in the samples from the B9A, B9E, B9S, or B9W borings, which indicates that the soil impact in this area is limited;

- Some petroleum-related VOC and SVOC impacts were noted in the shallow (0 to 2-foot) interval of boring B16 and copper exceeded its unrestricted use SCO in the 2 to 4-foot interval. These results are consistent with the odor and organic vapor readings in this boring and indicate that an apparently limited amount of petroleum impact is present in the vicinity of this boring;

- Catch basins (CB-1, CB-2, CB-3, CB-4 and CB-5) and drywells (B3, B4, and B9) all exhibited exceedances of SCOs for PAH SVOCs, metals, pesticides, and/or PCBs typical of urban stormwater runoff, with CB-4 and B4 also showing indications of petroleum-related VOCs and TCE. These catch basins and drywells may also be sources for VOC impacts to groundwater and soil vapor;

- A plume of petroleum-related VOCs and chlorinated solvents is present in groundwater at GW-7, GW-10, GW-13, and GW-2, with lesser impacts noted at GW-1 and GW-8. These impacts appear to originate from source materials in the B9/B9N/CB-4 area. As the plume migrates, TCE is breaking down into cis-1,2-DCE and VC. Chlorinated solvents were not found at levels exceeding NYSDEC standards at sampling locations located crossgradient from the centerline of the plume (GW-3 to GW-6, GW-11, GW-12, or GW-14 locations), upgradient of the plume (GW-9), or

downgradient of the plume (GW-17), indicating that the plume of VOC-impacted groundwater is narrow, well-defined, and limited to the Property;

- Five VOCs for which the NYSDOH provides guidance, including CT, cis-1,2- DCE, TCE,1,1-DCE, and methylene chloride, were detected in at least one of the soil vapor samples and may pose a concern for SVI. Specifically, the results for 1,1-DCE at SV-7, CT at SV-5 and SV-7, cis-1,2-DCE at SV-1 and SV-3, and methylene chloride at SV-7 could trigger a monitor or mitigate response, and the levels of TCE at SV-1, SV-2, SV-3, and SV-7 would trigger a mitigate response. All of these VOCs were detected in the source material at B9 and/or in the groundwater beneath the Property and, therefore, the soil vapor detections likely originated from this on-site source; and,
- Elevated concentrations of several petroleum compounds were detected at SV-7. These detections also appear related to the impacted soil noted in nearby soil boring B9.

Based on the Phase II ESA investigation, remediation measures are warranted to address contamination identified in soil and groundwater to exceed NYSDEC standards. Soil vapor sampling indicated VOC contamination to exceed NYSDOH guidance. As a result, required mitigation would consist of the installation of a sub-slab depressurization system and vapor barrier in future developments on the subject property.

V. FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

In the future absent the Proposed Actions (the "No-Action" condition), the development of the Project Site would include 12 buildings, including approximately 482,523 gsf of residential space (providing 568 DUs), 21,659 gsf of local retail space, 800 gsf of community facility space, and 557 accessory parking spaces.[1] Of the 557 parking spaces, 457 would be provided on surface parking lots and the additional 100 would be provided in an underground parking garage located in the center of the northern portion of the Project Site. The No-Action condition would result in approximately 544,982 gsf of development on the Project Site.

Based on the findings of the Phase II ESA investigations, remediation measures would be implemented in conformance to applicable City, State and Federal regulations. An (E) Designation for hazardous materials would not be placed on the Project Site, and therefore OER review and approval prior to issuance of building permits would not be required for site sampling, remediation, or for the preparation and implementation of a construction-related health and safety plan.

VI. FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

In the future with the Proposed Actions (the "With-Action condition"), an 11-building, approximately 2,371,000 gross square feet (gsf) development would be constructed on the Project Site. Construction of the Proposed Project would require ground disturbance to provide the foundation for the proposed building, and related improvements, resulting in the potential disturbance of on-site hazardous materials.

Based on the findings of the Phase II ESAs conducted on the North Parcels, that portion of the Project Site was accepted to the NYSDEC BCP (Site No. C241200) and a Brownfield Cleanup Agreement (BCA) has been executed. The BCA will require that remedial actions performed in conjunction with the Proposed Project would be subject to approval and oversight by NYSDEC and compliance with the requirements of the BCP, which would prevent significant adverse impacts from hazardous materials in connection with the Proposed Project. Additionally, an (E) designation will be mapped on the North Parcels, pursuant to Section

[1] Comprised of 483 accessory parking spaces for residential use (pursuant to ZR §25-251), 72 accessory parking spaces for retail use (pursuant to ZR §36-21), and two accessory spaces for community facility use (pursuant to ZR §36-21).

11-15 of the NYC Zoning Resolution, to ensure that testing and mitigation will be provided as necessary prior to any future development and/or soil disturbance at the Project Site in the event the Applicant withdraws their participation in the BCP. Furthermore, the open NYSDEC spill (Spill #15-08760) on the North Parcels will be remediated and closed in accordance with NYSDEC requirements.

Based on the findings of the Phase II ESAs conducted for the South Parcel, an (E) designation will be mapped on the South Parcel to effectively ensure retention of environmental commitments to remediate and mitigate the presence of hazardous materials on the entire Project Site.

For the entire Project Site, a RAP and CHASP will submitted to the OER for review and approval pursuant to an (E) designation to ensure that the environmental commitments to remediate the Project Site are retained regardless of BCP participation. A RAP and site-specific CHASP will be prepared to establish procedures to be followed throughout all periods of construction and disturbance at the Project Site. Construction management, site-specific controls, and monitoring procedures established therein would be submitted to the OER for review and approval. Documentation of the RAP is required prior to the issuance of NYC building permits to allow building occupancy on the Project Site. Based on Phase II ESA investigation analyses, the RAP would include provisions for soil management, installation of a site cap, and soil vapor mitigation in the form of a sub-slab vapor barrier or depressurization system. With the implementation of the RAP and CHASP, the Proposed Project would not result in a significant adverse impact related to hazardous materials.

To avoid any potential impacts associated with hazardous materials identified on the Project Site, the following (E) designation related to hazardous materials, E-532, will be mapped Lot 1 of Block 15842; Lot 1 of Block 15843; and Lot 1 of Block 15857; in Queens CD 14.

Requirements for the (E) designation are as follows:

Task1

The applicant must submit to the New York City Office of Environmental Remediation (OER), for review and approval, a Phase 1 Environmental Site Assessment (ESA) of the site along with a soil 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.

Task2

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 needed based on 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 that the work has been satisfactorily completed. An OER-approved construction-related health and safety plan would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or

groundwater. This plan would be submitted to OER for review and approval prior to implementation.

With the provisions of the NYSDEC BCP and mapping of the (E) designation on the Project Site, no significant adverse impacts due to hazardous materials would occur as a result of the Proposed Actions.