Chapter 11: Hazardous Materials

A. INTRODUCTION

OVERVIEW

This chapter assesses the potential for the presence of hazardous materials in soil and/or groundwater at both the projected and potential development sites identified in the reasonable worst-case development scenario (RWCDS) under the proposed East Village/Lower East Side Rezoning project. A total of 205 projected development sites and 565 potential development sites have been identified in the primary study (rezoning) area on which new buildings could be constructed or existing buildings enlarged (see Chapter 1, "Project Description").

An assessment of potential hazardous materials impacts was performed for the projected and potential development sites where ground disturbance is planned on-site for future developments. (Enlargement development sites are not expected to experience any ground disturbance and new residential uses would be located significantly above ground level; thus, they will not be assessed for the potential for hazardous materials impacts.) Therefore, the assessment was conducted on the 180 projected new construction sites and the 123 potential new construction sites. This assessment also includes a determination of whether an E-designation is necessary at privately-held projected or potential development sites under the proposed actions. No change of use or development requiring a New York City Department of Buildings (DOB) permit may be issued for sites with an E-designation—also illustrated on the city's zoning map—without approval of the New York City Department of Environmental Protection (DEP). DEP review is required to ensure protection of human health and the environment from any known or suspected hazardous materials associated with an E-designated site.

METHODOLOGY[1]

As described in the *New York City Environmental Quality Review (CEQR) Technical Manual*, the goal of a hazardous materials assessment is to determine whether a proposed action could lead to potential increased human exposure to hazardous materials and whether the increased exposure could lead to significant public health impacts or environmental impacts. The objective of this analysis is to determine which, if any, of the projected and potential development sites identified as part of the RWCDS may have been adversely affected by current or historical uses on-site, adjacent to, or within 400 feet of the sites, such that the property may be adversely impacted by hazardous materials and thus require an E-designation.

Hazardous materials, as defined in the *CEQR Technical Manual*, are substances that pose a threat to human health and the environment including, but not limited to, heavy metals, volatile

[1] The information presented in this chapter is a summary of "Toxics Targeting Computerized Environmental Report, East Village/LES Rezoning, Sections 1-9, October, 2007."

organic compounds (VOCs), semi-volatile organic compounds (SVOCs), methane, polychlorinated biphenyls (PCBs), pesticides, polychlorinated dibenzodioxins, dibenzofurans, and other hazardous wastes. Hazardous wastes are defined under the regulations promulgated by the Resource Conservation and Recovery Act (RCRA) as solid waste that meets at least one of the four characteristics: ignitability, corrosivity, reactivity, and/or toxicity, or as identified in NYCRR Part 371.4.

For the primary study area, 303 sites were identified as either potential or projected development sites. Each of these sites were evaluated for the potential impacts due to hazardous materials by reviewing: (1) historical topographic maps and Sanborn fire insurance maps; (2) an environmental regulatory database summary for the primary study area including a 1,000-foot buffer area; and (3) observations to identify environmental conditions that may be associated with a particular property. Additional information used in this assessment included: current occupants or site operations/activity (land use); Tax Block/Lot and address information; lot size; historic site information, building information; notes on general environmental related observations; neighboring property uses; and listings on environmental regulatory agency databases.

HISTORIC SANBORN FIRE INSURANCE MAP REVIEW

Historic and current Sanborn maps were reviewed to assess site activities and operations from specific years for the period of 1903 through 2006. For the majority of the sites, the Sanborn map coverage included 1903, 1920-1930, 1951, 1968-1971, 1975-1977, 1987, 1994, and 2006. The historic Sanborn maps were reviewed for each projected and potential development site. The review consisted of identifying the name(s) of the occupant(s), the type of business conducted, and the years of occupancy for each of the specific lots. Additional information, such as whether a lot had gas tanks, chemical tanks, vats, vaults, kilns, elevators, boilers, etc., was noted. Adjacent and nearby lots were also reviewed to identify any recognized environmental conditions. Facilities listed in the *CEQR Technical Manual* with respect to hazardous materials were identified, including lots with a prior land use (such as gas stations, iron works, printing facilities, plating, foundries, paint manufacturers, junk yards, etc.) that make use of, potentially generate, or dispose chemicals that may have a deleterious effect on the environment. For adjacent or nearby lots, the historic land use was investigated to determine if activities at these sites may have the potential to release chemicals to the environment.

DATABASE REVIEW

In preparing this analysis, a number of databases of potential sources of hazardous materials were reviewed, including:

- The New York State SPILLS database, which is an inventory of sites where petroleum or chemical releases have been reported to the New York State Department of Environmental Conservation (NYSDEC) since April 1, 1986;
- The chemical bulk storage (CBS) database, which is an inventory of NYSDEC-registered (since July 15, 1998) facilities that store hazardous substances—as defined by 6 NYCRR Part 597—in above-ground tanks (ASTs) with capacity equal to or greater than 185 gallons and/or in underground tanks (USTs) of any size;
- The Petroleum Bulk Storage (PBS) database (or BULK PETRO), which is an inventory of properties that store greater than 1,100 gallons in aggregate of petroleum products (maintained by NYSDEC);

- The Leaking Storage Tank Incident Reports (LTANKS), which are inventories of leaking ASTs or USTs incidents reported after April 1, 1986; the causes of releases may be tank test failures, tank failures, or tank overfills;
- The Hazardous Waste Generators (HAZ) database, which originates from the NYSDEC manifest system for hazardous waste handlers as well as the U.S. Environmental Protection Agency (EPA) records pursuant to the RCRA, also referred to as the Resource Conservation and Recovery Information System (RCRIS) database, includes information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA;
- An air discharge database (AIR), which is a listing of air pollutant sources that are permitted with the EPA, NYSDEC, or DEP; and
- New York State Brownfield Cleanup Sites, which are sites on record with the NYSDEC as abandoned, idle, or under-used industrial and commercial sites where redevelopment is being contemplated under the NYSDEC Brownfield Cleanup Program.

NEW YORK CITY BUILDING DEPARTMENT ELECTRONIC RECORDS REVIEW

Electronic records available on the DOB web site were reviewed. The review focused on records relating to fuel oil usage or other historical uses indicating potential hazardous material concerns.

FIELD SURVEY

Each site was observed in the field in order to verify literature and data records, and to identify existing environmental conditions and note any potential evidence of historic conditions.

Because most sites were not accessible for this effort, the site reconnaissance was performed from public access ways, such as streets and sidewalks. Therefore, observations were often made from the exteriors of buildings and lots. When opportunities existed (i.e., bay doors or overhead roll up doors were open), observers noted additional information such as site activities, conditions, contents and equipment present during the survey.

Each site was observed with special attention toward environmental conditions of concern. These environmental conditions include, but are not limited to: the nature of the operations at a property; evidence of petroleum bulk storage tanks from either an oil fill port and/or vent; roof or sidewall vents where potential air discharges occur; electrical transformers or large capacitors; sheens, discoloration or staining of surfaces on or adjacent to a property; topographical disturbances including excavation and filling; stressed vegetation; and solid waste disposal practices, Activities or occupants of adjacent properties were also noted to assess the possibility of a neighboring property contributing an impact on each of the projected or potential sites.

TOPOGRAPHY AND HYDROGEOLOGY

Based on reports compiled by the U.S. Geological Survey (USGS), the East Village and Lower East Side neighborhoods lie at an elevation of approximately 13 to 40 feet above sea level. Groundwater is expected at a depth of approximately 10 to 30 feet below grade. Groundwater is also expected to flow in an easterly direction towards the East River. However, actual groundwater flow direction in the vicinity of the primary study area may be affected by current or past pumping activities and other factors, including, but not limited to underground utilities and other subsurface openings or obstructions such as basements and subway lines.

B. EXISTING CONDITIONS

The primary study area has been occupied by residential and commercial uses with interspersed industrial and institutional uses for more than 100 years. Generally, this area was initially developed as a predominantly mixed-use residential and commercial area with some industrial uses. Most sites maintained this type of use through the present.

The 1903 and 1920-1930 Sanborn maps noted a number of laundry facilities throughout the primary study area; in later years, dry cleaners were also present. These facilities have historically utilized petroleum-based solvents and later chlorinated solvents including perchloroethylene (PERC) that may have affected local groundwater quality.

Several properties within the primary study area may have utilized polychlorinated biphenyls (PCBs), which have the potential to affect local soil and groundwater quality. These properties include the existing Consolidated Edison ("Con Ed") substation along the east side of Avenue A between East 5th and East 6th Streets and a printing facility with an independent electrical plant along Third Avenue between East 12th and East 13th Streets as shown on the 1903-1977 Sanborn maps.

Several blocks below East Houston Street, including those along Attorney Street, were historically developed with numerous automotive and industrial related properties, including bottling plants, miscellaneous factories, filling stations with buried gasoline tanks, dry cleaners, lumber yards, and auto repair facilities/garages. A filling station—currently a Mobil gas station—has been located on the northwest corner of East Houston Street and Avenue C since the late 1960s. The portion of the primary study area south of Delancey Street was also historically developed with several automotive and industrial facilities, including parking garages, factories, and other industrial uses.

Common historical uses for development sites that may have contributed to potential on-site soil or groundwater contamination include, but are not limited to: manufacturing facilities and factories; laundries and dry cleaners; warehouses and storage facilities for hazardous materials; printing operations; gasoline filling stations; and automotive service facilities.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the future without the proposed actions, a number of projected and potential development sites are assumed to be developed with residential or commercial uses (see Chapter 1, "Project Description"). The remaining development sites are expected to continue in their current uses, which do not currently present a hazard to people or the environment. However, any construction involving soil disturbance could potentially increase pathways for human exposure to any subsurface hazardous materials present. Since no E-designations (which require the owner of a property to assess potential hazardous material impacts prior to construction) currently exist on any portion of the project area, such soil disturbance would not necessarily be conducted in accordance with the procedures (e.g., for conducting testing before commencing excavation and implementation of health and safety plans during construction) described in the following section. However, legal requirements (including those of NYSDEC) should petroleum tanks and/or spills be identified, requirements for disturbance and handling of suspect lead-based paint and asbestos-containing materials, and requirements for off-site disposal of soil/fill, would need to be followed. As such, without the proposed actions, the amount of soil disturbance would be less, but potentially the controls on its performance would not be as stringent as under the proposed actions, as described below.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

As noted above, a total of 205 projected development sites and 565 potential development sites have been identified in the primary study area on which new buildings could be constructed or existing buildings enlarged; some of these sites are expected to be redeveloped as-of-right with uses complying with the current zoning. This assessment examines the 180 projected and 123 potential sites where ground disturbance is expected to occur as a result of future development activities, and thus could be expected that development in the future with the proposed actions would have the potential for environmental impacts due to potential presence of hazardous materials. These impacts could include the potential for impacts to the health and safety of workers (and the community) during construction, or the potential for impact on future residents or employees of individual buildings on these sites. These adverse impacts are principally associated with the following uses and concerns:

- Auto-related, transportation, or utility uses on the development site or an adjacent site (e.g., garage, filling station, auto repair, substation);
- Records of USTs or leaking USTs on the development site or an adjacent site;
- Records of spills of petroleum or chemicals on the development site or an adjacent site; and
- Records of ASTs on the development site or an adjacent site.

The proposed actions would result in greater in-ground disturbance when compared with development expected in the future without the proposed actions, thereby resulting in a increase in the potential for adverse impacts associated with excavation for new construction from the potential presence of subsurface contamination in the primary study area. Although the proposed actions could result in more construction activities that could increase pathways for human exposure, the possibility of impacts would be reduced by the measures identified below.

Prior to construction, further investigation would be performed on each potential development site where known or potential Recognized Environmental Conditions (RECs) were identified, to determine the presence and nature of contaminants of concern and the proper remedial and/or health and safety measures that would be employed during redevelopment.

An E-designation would be placed on the privately owned sites identified in Table 11-1 and are recommended as part of the proposed zoning. Recommendations for E-designations are based on whether the projected and potential development sites may have been adversely affected by current or historical uses at, adjacent to, or within 400 feet of these sites. In determining whether a site is recommended for an E-designation, current site conditions were given priority consideration, followed by the adjacent site use or history, and finally the conditions within a 400-foot radius of the development site. The E-designation would require that, prior to redevelopment, the property owner conduct a Phase I Environmental Site Assessment (ESA) in accordance with the American Society of Testing Materials (ASTM) E1527-05, a soil and groundwater testing protocol, and remediation where appropriate, to the satisfaction of DEP before issuance of construction-related DOB permits (pursuant to Section 11-15 of the *Zoning Resolution*—Environmental Requirements). The E-designation also requires mandatory construction-related health and safety plans, which must also be approved by DEP.

All demolition or rehabilitation would be conducted in accordance with applicable requirements for disturbance, handling and disposal of suspect lead-paint and asbestos-containing materials. For all projected and potential development sites where no E-designation is recommended, in addition to the requirements for lead-based paint and asbestos, requirements (including those of

NYSDEC) should petroleum tanks and/or spills be identified and for off-site disposal of soil/fill would need to be followed.

E. CONCLUSION

The implementation of the preventative and remedial measures outlined above would reduce or avoid the potential that significant adverse hazardous materials impacts would result from potential construction in the primary study area. Following such construction, there would be no potential for significant adverse impacts.

Table 11-1
Sites Recommended for E-Designation

Site No.	Block	Lot	Address	Comments
32	353	75	140 Delancey Street	According to the historical Sanborn maps, this site was developed with a theater on the 1920-1994 maps. During these years, a large vault was depicted on the northwestern portion of the site. The vault may have represented an underground petroleum bulk storage tank. Electronic records on file with DOB indicated oil burner applications for the years of 1950 and 1969. Contamination from an on-site petroleum bulk storage tank may have impacted subsurface conditions. A printing facility was noted on the north-adjacent property on the 1903 and 1975-1977 maps, which may have utilized hazardous materials including metals and industrial solvents that may have impacted subsurface conditions beneath this site.
212	458	23	32 East 3rd Street	According to the historic Sanborn maps, a machine shop was located west-adjacent of this site on the 1951 map. As it is unknown what type of industrial use occurred and what type of materials were warehoused, hazardous materials used in the former machine shop may have impacted this site.
236	372	33	320 East 3rd Street	During the site inspection, a laundromat was noted two doors east of the site. According to the historic Sanborn map review, a dry cleaner was located on this property (324 East 3rd Street) from 1968 to 2006. Potential releases from hazardous materials including perchloroethylene utilized in dry cleaning activities may have impacted subsurface conditions beneath this site.
244	376	24	264 East 7th Street	According to the regulatory database, the west adjacent property (262 East 7th Street) was listed as a NY Spills site when soil contamination was discovered on a neighboring property during excavations. The spill was attributed to an unreported historical fuel oil tank failure. Soil and groundwater sampling was conducted on the affected properties with some contamination noted, however, further testing was to be conducted in the latest NYSDEC remarks, and the case remained open. Subsurface conditions beneath this site may have been impacted by the aforementioned spill.
248	376	22	262 East 7th Street	An active status spill (Spill ID 0608798) was listed for this site in October 2006 when petroleum contamination was noted in soil during construction. The spill was attributed to an unreported historic fuel oil tank failure on the neighboring property (262 East 7th Street). Subsequent soil and groundwater testing indicated some contamination and in-site remediation was recommended. According to the latest NYSDEC remarks associated with the case (September 2007), the results of the most recent samples taken had not been received and the case remained open.
249	376	23	262 East 7th Street	An active status spill (Spill ID 0651463) was listed for this site when petroleum contamination was noted in soil on the neighboring property (260 East 7th Street) during construction excavations. The date of the release was listed as November of 1996 and the amount was listed as 300 gallons of No. 2 fuel oil. The spill was attributed to an unreported historical fuel oil tank failure on-site. Subsequent soil and groundwater testing indicated some contamination and further remediation was recommended. According to the latest NYSDEC remarks associated with the case (September 2007), the results of the most recent samples taken had not been received and the case remained open. A fill port with slight staining was noted on the sidewalk adjacent to the structure during the site visit.
254	377	64	247 East 7th Street	According to the historic Sanborn maps, a printing facility was located west-adjacent on the 1975-1977 maps. Metals and industrial solvents used in former printing operations may have impacted subsurface conditions beneath the site.
272	444	21	64 East 3rd Street	According to the historic Sanborn maps, a hat factory was located on-site and the west-adjacent structure on the1951 and 1975-77 maps. Hazardous materials, including mercury and industrial solvents, used in the former hat factory may have impacted subsurface conditions beneath this site.
274	448	18	68 East 7th Street	During the site visit, a dry cleaner was noted on the west-adjacent property at 66 East 7th Street. The Sanborn maps indicated that a laundry was located two doors east of the site on the 1903-1951 maps. Potential releases from hazardous materials, including petroleum-based and/or chlorinated solvents (i.e., perchloroethylene) utilized in dry cleaning activities at these facilities, may have impacted subsurface conditions beneath this site.
275	449	20	62 St. Marks Place	According to the historic Sanborn map review, a laundry was located on the east-adjacent property on the 1903-1951 maps. Potential releases from hazardous materials, including petroleum-based and/or chlorinated solvents utilized in the former laundry, may have impacted subsurface conditions beneath this site.
280	464	31	236 East 9th Street	According to the historic Sanborn maps, an auto repair shop was located on-site on the 1920-1951 maps. On-site auto-related uses suggest possible petroleum contamination.
284	468	54	215 East 12th Street	According to the historic Sanborn maps, a printing facility was located west-adjacent of this site on the1903 map and an unspecified factory was noted on the west-adjacent site on the 1920-1977 maps. As it is unknown what type of industrial use occurred and what type of materials were stored and utilized, hazardous materials used in the former west-adjacent facility may have impacted this site. Metals and industrial solvents used in former printing operations may have impacted subsurface conditions beneath the site.
289	350	54	301 East Houston Street	During the site visit, a dry cleaner was noted on the east-adjacent property at 303 East Houston Street. Potential releases from hazardous materials, including chlorinated solvents (i.e., perchloroethylene) utilized in dry cleaning activities, may have impacted subsurface conditions beneath this site. A paint store was noted on site on the1903-1951 Sanborn maps. The bulk storage of paints and/or solvents and thinners may have impacted subsurface conditions beneath the site.
303	375	44	59 Avenue D	According to the Regulatory Database, the north-adjacent property (63 Avenue D) was the location of a Closed Status Spill of approximately 50 gallons of fuel oil in May of 2003. The spill achieved a closed status; however, NYSDEC recommended additional subsurface testing. The north-adjacent site is also listed as a petroleum bulk storage facility containing an active a 3,000-gallon AST.