4.12 Contaminated Materials

A. INTRODUCTION

This section describes the long-term impacts of the No Build and Build Alternatives relative to existing contaminated materials located in the project area. The contaminated materials assessment consisted of a Preliminary Environmental Site Assessment (PESA) to determine the likelihood and nature of possible contaminated materials at each area where construction activities are anticipated to occur. Based on the results of the PESA, sites with known contaminated materials were identified in the project area. The PESA was conducted at accessible properties within approximately 200 feet of both sides of each affected railroad segment. The intent of the PESA was to identify Recognized Environmental Conditions (RECs) based on past and current usage of the affected properties, and was conducted in a manner consistent with the American Society for Testing and Materials (ASTM) Standard E1527-05, NJDEP, NYSDEC, and NYCDEP regulations and requirements for performing environmental assessments.

In addition to the results of the PESA, this section also presents the results of soil and groundwater sampling that was conducted along the Build Alternative alignment as part of the program of subsurface investigations conducted under the Preliminary Engineering Phase of the project.

B. METHODOLOGY

ASTM Standard E1527-05 sets out a standard practice for performing a "Phase I Environmental Site Assessment". This approach includes four components: records review, site reconnaissance, interviews, and reporting. The ASTM standard is primarily designed to aid a prospective property purchaser in satisfying one of the requirements to qualify for the innocent landowner defense to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability, as defined in 42 USC § 9601(35)(B). Since the analysis was generally conducted along a corridor rather than at specific sites with potential for permanent property interests associated with this project, a modified "Phase I", hereinafter referred to as a PESA, was performed, which focused on those aspects of the ASTM Standard, as well as NJDEP, NYSDEC and NYCDEP requirements that are appropriate to the project at this time.

Records relating to past and current site uses, spills, and other relevant information were reviewed for properties along the alignment. A site reconnaissance was performed along the entire alignment, but inspections of certain individual properties were not conducted due to lack of access, nor were current owners or occupants of buildings interviewed. Observations with regard to potential for contamination on adjacent properties were rendered, to the extent possible, from publicly accessible areas. In addition, the form of the report specified by ASTM was modified to consist of this FEIS section and its supporting tables, figures, and appendices.

Initially, the investigation included a review of federal and state environmental agency records obtained using a service that searches current federal and state agency databases. After review of the environmental agency database, Freedom of Information Act (FOIA) requests were issued to review readily available NJDEP, NYSDEC, NYCDEP, USEPA and applicable local agency files for sites identified as contaminated or potentially contaminated within the project corridor. In addition, historical sources, such as Sanborn Fire Insurance Maps and available aerial photographs, were reviewed for properties within the project area to identify RECs.

As part of the design phases of the project, access to properties for which the Build Alternative would require permanent property interests is being requested from the respective property owners to conduct individual environmental site assessments and subsurface site investigations. The investigation of these sites in New Jersey would be conducted in accordance with NJDEP Technical Requirements for Site Remediation, N.J.A.C. 7:26E. Investigation activities in New York will satisfy the NYSDEC Draft DER-10, Technical Guidance for Site Investigation and Remediation, and New York City's Environmental Quality Review Manual (Chapter 3J).

NYCDEP requirements for conducting Phase I Environmental Site Assessments (*CEQR Technical Manual*, Chapter 3J, Hazardous Materials) were followed as part of the hazardous materials review process. Investigation and remediation activities conducted in New York City would be compliant with both NYSDEC and NYCDEP requirements. NYCDEP review and approval would be required for investigation and remediation activities associated with hazardous materials at (E)-designated sites. Sites with an (E)-designation on the New York City zoning map cannot undergo a change of use or development requiring a New York City Department of Buildings permit without first obtaining approval by NYCDEP. Standards and guidance values for soils and groundwater have been promulgated by New York State. These same standards and guidance values are utilized by NYCDEP.

Applicable guidelines and regulations for assessment of contaminated materials include:

- **Site Remediation and Soil Reuse:** New Jersey and New York have implemented specific requirements pertaining to soil reuse and the investigation and remediation of contaminated sites. In addition, both states have implemented or promulgated specific soil cleanup reference values and groundwater standards to be applied to sites undergoing investigation and/or remediation.
- **OSHA Permissible Exposure Limits:** The U.S. Occupational Safety and Health Administration (OSHA) has promulgated permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances. PELs for approximately 500 contaminants are contained in 29 CFR 1910.1000 (Air Contaminants).
- **Hazardous Waste Regulations:** As defined by the Federal Resource Conservation and Recovery Act (RCRA), waste can be classified as "hazardous waste" if it contains one of the federally "listed wastes" in USEPA's Code of Federal Regulations (40 CFR) 261 "Identification and Listing of Hazardous Waste," or if it possesses one of four hazardous characteristics ("D" wastes): ignitability, reactivity, corrosivity, or toxicity. RCRA toxicity characteristic limits are listed in Appendix 4.12. D-listed wastes are expected to be the primary classification for wastes generated in the project area.
- **Asbestos-Containing Materials (ACM) and Naturally Occurring Asbestos (NOA):** OSHA and USEPA provide requirements for the protection of worker and public health and safety during operations that have the potential to disturb NOA.
- **Lead-Based Paints (LBP):** Surfaces coated with LBP may require proper removal or management of paint that would generate lead-containing dust or vapors. An exposure assessment must be performed prior to demolition and construction to predict whether lead exposure would be likely to occur during such activities.
- **Polychlorinated Biphenyl (PCB)-Containing Equipment:** Suspect PCB-containing equipment must be surveyed and evaluated prior to building demolition or renovation. PCB-containing equipment that would be disturbed by such work must be removed and disposed of in accordance with applicable regulations of the federal Toxic Substances Control Act (TSCA).
- **Handling, Storage, Transportation, and Disposal of Hazardous Materials:** Federal, state, and local regulations require the use of special containers or construction of impoundments for on-site storage of the hazardous materials to prevent release to the environment. USDOT has promulgated requirements for transportation of wastes containing hazardous materials.

C. EXISTING CONDITIONS

NEW JERSEY

APPLICABLE GUIDANCE AND REGULATIONS

Site Remediation Requirements

The Industrial Site Recovery Act (ISRA) N.J.A.C. 7:26B requires owners or operators of an industrial establishment, as defined under the Act, planning to close or transfer ownership or operations, to notify NJDEP. After the submittal of the Initial Notice, an owner or operator of an industrial establishment is required to obtain: 1) a No Further Action letter from NJDEP; or 2) NJDEP approval of a remedial action work plan or remediation agreement, as a precondition for the closing of operations or transferring of ownership or operations at these facilities. In addition to the ISRA regulations, the following New Jersey statutes and regulations would apply to contaminated sites (see Chapter 11 for further detail):

- The New Jersey Underground Storage of Hazardous Substances Act
- The Spill Compensation and Control Act, N.J.S.A. 58:10-23.11
- The Solid Waste Management Control Act
- The Water Pollution Control Act
- The Brownfields and Contaminated Site Remediation Act, N.J.S.A. 58:106
- NJDEP Solid Waste Regulations, N.J.A.C. 7:26
- NJDEP Pollutant Discharge Elimination System, N.J.A.C. 7:14A
- NJDEP Discharge of Petroleum and Other Hazardous Substances, N.J.A.C. 7:1E
- NJDEP Underground Storage Tanks, N.J.A.C. 7:14B
- NJDEP Surface Water Quality Standards, N.J.A.C. 7:9B
- NJDEP Ground Water Quality Standards, N.J.A.C. 7:9-6
- Technical Requirements for the Remediation of Contaminated Sites (TRSR), N.J.A.C. 7:26E
- Procedures for NJDEP Oversight of the Remediation of Contaminated Sites, N.J.A.C. 7:26C

Hazardous Waste Regulations

New Jersey's Solid and Hazardous Waste Regulations are promulgated under New Jersey Administrative Code (N.J.A.C. 7:26). NJDEP has been delegated the authority by USEPA to administer RCRA (as described above) in New Jersey.

Handling, Storage Transportation, and Disposal of Hazardous Materials

NJDEP identifies hazardous waste and other waste management requirements in N.J.A.C. 7:26G. Facilities that receive hazardous materials require federal, state, and local permits to accept the waste.

Soil Reference Values

Neither federal nor New Jersey governments have promulgated a comprehensive set of numerical standards for the evaluation of environmental impacts caused by chemical contaminants in soils. NJDEP has established Soil Cleanup Criteria (last revised May 12, 1999) to provide guidance in establishing site-specific cleanup levels. NJDEP soil cleanup criteria are not promulgated standards. Alternative site-specific criteria could be approved by NJDEP, based on environmental impacts, site-specific conditions and background levels, which could result in a site-specific cleanup level that differs from published criteria. On May 7, 2007, NJDEP proposed new soil cleanup standards in N.J.A.C. 7:26D-4. The effective date of the proposed standards was not included in the rule proposal. Although no soil clean up standards have been promulgated to date, NJ TRANSIT would comply with NJDEP guidelines in place at the time of Build Alternative design and construction.

Water Standards and Regulations

The State of New Jersey has promulgated groundwater quality standards (GWQS) (N.J.A.C. 7:9-6) that serve as a basis for setting groundwater discharge standards under the New Jersey Pollutant Discharge Elimination System (NJPDES) Program, and establishing standards for groundwater cleanup under the NJDEP Site Remediation Program.

The State of New Jersey has also implemented NJPDES regulations (N.J.A.C 7:14-1 et seq.), which provide permit requirements and effluent limitations for wastewater discharges to the waters of the State. Certain construction-related discharges, including stormwater discharges associated with construction activities (clearing, grading, and excavation activities) and construction dewatering discharges, are covered under general permits administered under the NJPDES program.

Petroleum Storage Tanks

Removal of underground petroleum storage tanks is regulated in New Jersey by N.J.A.C. 7:14B, which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils and groundwater associated with the removal of underground storage tanks and releases from above-ground storage tanks must be investigated and remediated in accordance with the TRSR, N.J.A.C. 7:26E.

Asbestos-Containing Materials (ACM) and Naturally Occurring Asbestos (NOA)

The proper abatement and disposal of ACM and NOA is enforced by the following state agencies:

- NJ Department of Labor (NJDOL), Asbestos Control and Licensing Section – licenses asbestos contractors and workers.
- NJ Department of Community Affairs (NJDCA), Asbestos and Lead Unit – enforces provisions of the Asbestos Hazard Abatement Sub-Code pertaining to schools and public buildings.
- NJDEP – regulates the management, transportation, and disposal of ACM.

EXISTING AND POTENTIALLY CONTAMINATED SITES

Northeast Corridor (NEC)

Within the New Jersey portion of the project area (excluding the proposed Secaucus Connection/West End Wye), a total of 125 sites were identified as having the potential for contamination during the PESA. Specific details regarding potential contamination and contamination sources at each of the sites are summarized in Appendix 4.12. Based on the likelihood of potential contamination, the information collected during the PESA was divided into three groups. Category A included sites that do not reasonably appear to have affected the soil, soil gas, or groundwater, and, therefore, would not warrant additional analysis. Category A also included those sites that have received a No Further Action (NFA) from NJDEP. Category B included sites that have the potential for contamination, but still appear unlikely to warrant additional analysis, based on dates, types of operations and regulatory status. Category C included sites that have the potential for contamination that could have affected the project area, and should undergo additional analysis, including the acquisition of site records through the federal FOIA or New Jersey's Open Public Records Act (OPRA) requests, and potential sampling events as part of an Environmental Site Investigation. Category C also included those sites that have received a NFA from NJDEP, but have a use restriction (e.g., deed notice or classification area) that may impact the project. The 88 sites identified as Category C sites were determined to warrant further analysis.

Since the completion of the February 2007 ARC DEIS and as part of Preliminary Engineering, NJ TRANSIT collected and analyzed soil samples during environmental and geotechnical investigations along the NEC: in the area of the proposed fan plants, construction access shafts and construction staging

areas in North Bergen and Hoboken; within the Hudson River; and, along the proposed tunnels alignment from North Bergen to the Hudson River. The results of some of these samples are discussed below as they pertain to specific sites. Additional environmental investigations will be conducted during subsequent design phases.

Several potentially contaminated sites and NJDEP Known Contaminated Sites, likely to have a more significant impact on the project area, include National Retail Transportation (2820 16th Street, North Bergen), JH Pantheon IV (401 Penhorn Avenue, Secaucus), 700 Penhorn Avenue, and Mand Realty (900 Penhorn Avenue, Secaucus). These sites are located west of the proposed Build Alternative tunnels portal and south of the NEC in North Bergen. Soils and groundwater contaminated with petroleum may be encountered at the National Retail Transportation, Mand Realty, JH Pantheon IV and 700 Penhorn Avenue sites. The National Retail Transportation site is an active leaking underground storage tank case. The JH Pantheon IV site received a restrictive use NFA from NJDEP. The site has a deed notice and engineering controls (capping) due to the presence of historic fill contaminated with petroleum hydrocarbons, metals (antimony, arsenic, copper, lead, and zinc) and polyaromatic hydrocarbons (PAHs). 700 Penhorn Avenue also received a restrictive use NFA from NJDEP. The site is identified as having a deed notice with engineering controls (capping) due to the presence of historic fill contaminated with PAHs. 900 Penhorn Avenue was identified as a leaking underground storage tank case that received an unrestricted use NFA from NJDEP in 2001 (i-MapNJ).

An 11-acre area between the NEC and Penhorn Avenue is the former McKay's Landfill site. According to NJDEP files (2003), the site is both a solid waste landfill and chromium site (NJDEP Chromium Site No. 40) (NUS Corporation 1990). The chromium site issues were addressed under an Administrative Consent Order (ACO) with Occidental Chemical which resulted in the establishment of institutional and engineering controls for the areas of the site containing chromite ore processing residue. On February 20, 2001, NJDEP issued a Classification Exception Area (CEA) for groundwater and a conditional NFA determination with institutional (deed notice) and engineering controls (cap) for soil. A large warehouse occupies a portion of this site.

Soil samples were collected during Preliminary Engineering from several geotechnical borings advanced between Penhorn Avenue and the NEC in the area of the Penhorn Avenue contaminated sites and McKay's Landfill. In addition to the collection of soil samples, soils were screened with a photoionization detector (PID) to determine the presence or absence of organic vapors. All samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and priority pollutant metals (PP Metals). The results of the soil investigation identified fill material (roof shingles) and elevated PID readings at 301 Penhorn Avenue. In addition, elevated PID readings were noted at 201 Penhorn Avenue and 301 Penhorn Avenue. Elevated concentrations of several metals, including antimony, arsenic, barium, lead and zinc, were identified above the NJDEP's most stringent soil cleanup criteria (SCC) in a soil sample collected at 201 Penhorn Avenue. Elevated concentrations of methylene chloride, several SVOCs, and metals (barium and lead) were identified in the soil sample collected at 901 Penhorn Avenue. Elevated concentrations of toluene and xylenes were detected in the soil sample collected at 301 Penhorn Avenue, but at concentrations below the most stringent SCC. Several metals (barium, cadmium, copper, lead, and zinc) were identified in the sample collected from this location at concentrations exceeding the most stringent SCC. One soil boring was advanced on a portion of the National Retail Transportation site located at 2820 16th Street in North Bergen. Contaminants identified in soil and groundwater on this site included metals and SVOCs, which may be attributable to fill material on the site. Based on the PESA findings and the results of subsurface investigation activities, there is the potential for contaminated soil and groundwater to be encountered in this area during construction activities.

Other potentially contaminated sites located along the NEC include Intermodal Properties (501 New County Road), located just east of Frank R. Lautenberg Station, the Norfolk Southern Yard (125 County Road) located directly west of County Road and the County Road, LLC property (1 County Road) located directly east of County Road.

The Intermodal Properties site was historically a rail yard and a warehouse and distribution facility. The site was listed as an NJDEP Known Contaminated site due to releases associated with underground storage tanks on the property. An NFA was reportedly issued for the site by NJDEP in 1997. A separate release associated with a heating oil aboveground storage tank occurred on the property in 2006. Two environmental borings were advanced on this property. Based on the analytical results from soil and groundwater samples collected from these borings, SVOCs and metals were detected above the most stringent soil SCC and GWQS. These exceedances are likely attributable to fill material.

Based on a review of historic information, the Norfolk Southern property was historically known as Erie Yards and Croxton Yards. Between 1977 and 1981, many of the rail lines associated with Croxton Yards were removed. There have been a number of documented spill/releases of hazardous materials on the property dating back to 1996.

An automobile repair facility is currently located on the County Road, LLC property. In addition, farming was historically conducted on the property. One environmental boring was advanced on the County Road LLC property. Based on analytical results from soil samples collected from this boring, SVOCs, metals, pesticides and PCBs were identified above the most stringent SCC. SVOCs, pesticides and metals were identified above GWQS in a groundwater sample collected from this boring. SVOCs and metals identified in soil and groundwater may be attributable to fill material on the site, while pesticides identified in soil and groundwater and PCBs identified in soil may be attributable to historic operations.

Soil samples were collected during Preliminary Engineering from 14 geotechnical borings advanced at several locations in the vicinity of the NEC embankment in Secaucus and North Bergen, including New County Road in Secaucus, west of Conrail Shared Assets in North Bergen, County Road in Secaucus, Secaucus Road in Secaucus, adjacent to NRS Trucking facility in North Bergen, 16th Street in North Bergen, and southwest of Frank R. Lautenberg Station in Secaucus. No evidence of contamination was noted in 12 of the borings. Elevated PID readings were noted in two borings advanced in the County Road area. Several metals including arsenic, copper, lead and mercury exceeded the most stringent SCC in the shallow sample collected from one of the County Road borings. Benzo(a)pyrene was detected above the most stringent SCC in one boring advanced adjacent to the NRS Trucking facility and one boring advanced west of the Conrail Shared Assets.

Soil samples were also collected during Preliminary Engineering from geotechnical borings advanced at several locations in Union City along the alignment for the Palisades tunnels including PE-071, PE-073, PE-074, PE-075, and PE-076. Bedrock at all of these locations was shallow (i.e., <10 feet below grade). No evidence of contamination was noted in these borings and there were no exceedances of the most stringent SCC.

Tonnelle Avenue Fan Plant/Construction Access Shaft

Potential known contaminated sites identified in the area of the proposed fan plant/construction access shaft, substation, and switching station east of Tonnelle Avenue include a dry cleaner at 2400 Tonnelle Avenue, a gasoline service station at 2501 Tonnelle Avenue, and Public Storage, Inc. at 2100 Tonnelle Avenue (a NJDEP Known Contaminated Site) (Environmental Data Resources 2004 and i-Map NJ). In addition, based on historic Sanborn Fire Insurance Maps, a former gasoline service station was located at 2126 Tonnelle Avenue, which is currently a McDonald's Restaurant. The proposed fan plant/

construction access shaft and substation would be located on the Public Storage, Inc. and McDonald's properties. Soil samples were collected from two geotechnical borings and two environmental borings advanced on the McDonald's property. No evidence of contamination (staining, elevated PID readings, or odors) was noted in these borings. Based on analytical results, no exceedances of the NJDEP's most stringent SCC were noted in samples collected from the geotechnical borings. Chromium was detected in one of the environmental borings at a concentration above the most stringent SCC.

Four environmental borings were advanced on the Public Storage, Inc. property to evaluate soil and groundwater conditions. Chromium exceeded the most stringent SCC in soil samples collected from two of the environmental borings. Benzo(a)pyrene also exceeded the most stringent SCC in two of the environmental borings. Several SVOCs and metals were identified in groundwater samples at concentrations exceeding GWQSs. In addition, low concentrations of bromodichloromethane and tetrachloroethene were identified in one groundwater sample at concentrations just exceeding or at the GWQS of 1 ug/L. The SVOC and metals exceedances in soil and groundwater are likely attributable to fill material. Bromodichloromethane and tetrachloroethene exceedances in groundwater may be attributable to historic uses of the property or adjacent properties.

A previously Known Contaminated Site at 2001 Tonnelle Avenue has been identified on the west side of the street and west of the proposed fan plant/construction access shaft, substation, and switching station. The northern portion of this site would be used as a driveway for access to the proposed railroad right-of-way. The site, which was historically the G& B Baker's Supply Corporation Building (also known as Grand City Container Corporation), received an unrestricted use NFA from NJDEP on December 10, 2002 after completing remediation activities associated with three former heating oil underground storage tanks. One soil sample was collected during Preliminary Engineering from a geotechnical boring. No exceedances of the most stringent SCC were noted in the soil sample collected from this boring. Two environmental borings were advanced on the subject property to evaluate soil and groundwater conditions. Chromium was identified in both borings above the most stringent SCC. SVOCs were identified in one of the borings at concentrations exceeding the most stringent SCC. Pesticides, PCBs, SVOCs and metals were identified in the groundwater samples collected from one of the borings at concentrations exceeding NJDEP's GWQS. SVOCs and metals were identified in the groundwater samples collected from the second boring at concentrations exceeding NJDEP's GWQS.

Hoboken Fan Plant/Construction Access Shaft

Historic Sanborn Maps identify several potentially contaminated sites at the location of the proposed fan plant/construction access shaft and construction staging area in Hoboken. Specific areas of concern include Detroit Steel Products (Jefferson and 18th Street), a repair garage (19 18th Street), and a gasoline tank identified at 78 18th Street. The proposed fan plant site is currently occupied by a bus company and two vacant buildings. In addition, the Adams Street Wastewater Treatment Plant located directly south of this proposed site has a deed notice and engineering control (capping) for historic fill contaminated with lead and petroleum hydrocarbons. The Berthe Corporation located at 15 Hackensack Road, just east of the proposed fan plant, has a CEA for lead contamination in the groundwater (i-Map NJ).

Based on information obtained from NJDEP, site investigation activities conducted on the eastern portion of proposed fan plant/construction access shaft and staging area identified SVOCs, metals and PCBs above the most stringent SCC. PCBs, arsenic and lead were identified in groundwater on the site.

Soil samples were collected during Preliminary Engineering from several geotechnical borings advanced at the location of the proposed fan plant/construction access shaft site. Soil samples were collected from fill material that was identified at all boring locations. A petroleum-like odor and/or elevated PID readings were noted in two of the borings. SVOCs exceeded the most stringent SCC in two of the four borings. Lead exceeded the most stringent SCC in two of the four borings.

Six environmental soil samples were collected during Preliminary Engineering from the proposed fan plant/construction access shaft site. Contaminants identified in soil and groundwater above the most stringent SCC and GWQS included SVOCs and metals, which appear to be associated with the fill material identified across the site. PCBs, which were identified in both soil and groundwater, may be attributable to current or historical operations and/or fill material on the subject property. Based on the PESA findings and the results of subsurface investigation activities, there is the potential for contaminated soil and groundwater to be encountered in this area during construction activities (as discussed further in Section 5.12).

Proposed Kearny Rail Yard

The proposed Kearny Rail Yard would be located exclusively on the western and central portions of the former Koppers Coke Site. The total land area of the proposed rail yard is approximately 82 acres. The site is situated on a peninsula along the Hackensack River and across from the PSE&G Hudson Generating Station. The western portion of the proposed yard would be located adjacent to Standard Chlorine Chemical Company (SCCC) and Diamond Shamrock, both known contaminated sites.

Koppers Coke. Koppers Coke was a coke plant/coal tar processing facility, when closed in 1974. In March 1988, the Hudson County Improvement Authority (HCIA) purchased the site from Beazer East, the successor to the Koppers Company. In October 1997, a remedial action work plan (RAWP) was submitted to NJDEP and was approved in May 1998. The principal strategy of the approved RAWP is to contain contaminants on site, using a subsurface barrier system along the Hackensack River, and to cap the site using processed dredge materials (PDM). An interim remedial measure (IRM) to recover free product and natural attenuation of the on-site Light Non-Aqueous Phase Liquids (LNAPL) and Dense Non-Aqueous Phase Liquids (DNAPL) groundwater plumes, confined by the subsurface barriers, were strategies for groundwater concerns.

Beazer East submitted a RAWP Addendum (RAWPA) in December 2005 to NJDEP. The purpose of this RAWPA was to complete the remaining remedial activities and construction. The RAWPA requested that the amount of PDM be substantially reduced below the original 4.5 million cubic yards to approximately 1.5 million cubic yards (remaining on-site stockpile plus 400,000 cubic yards to be provided by Great Lakes Dock and Dredge Company). Additionally, the RAWPA requested that the in-place permeability of the PDM be increased to 1×10^{-5} cm/sec. In support of the request for the increased permeability, the RAWPA also included an extension of the IRM through additional recovery wells and the installation of a reactive treatment.

Based on a July 11, 2006 letter, NJDEP conditionally approved the December RAWPA, but requested additional information and clarification regarding the proposed surface cover for the site. NJDEP also required that Beazer East obtain concurrence from USEPA to allow contaminated materials to be placed under a cap in accordance with the National Contingency Plan (55 FR 8758-8760, March 8, 1998). In addition, NJDEP required that Beazer East provide a permanent remedy for groundwater contaminated with dissolved organic compounds, submit a soil reuse plan, and characterize Hackensack River sediments prior to proposed excavation activities. If these NJDEP-imposed conditions are not be implemented by Beazer East, NJ TRANSIT would need to implement required remediation of the proposed Kearny Rail Yard site prior to yard construction, based on coordination and negotiation with NJDEP.

On November 21, 2006, NJDEP issued a Notice of Deficiency (NOD) pertaining to the RAWPA pursuant to NJDEP recently promulgated "Grace Period" rules. The NOD provided specific comments and requirements to be addressed in the final RAWPA. Beazer East submitted a final RAWPA on March 1, 2007, subsequently approved by NJDEP on August 10, 2007, to address the November 21, 2006 NOD. The final RAWPA included the following information regarding proposed remedial activities for the site:

- Proposal for the consolidation and placement of contaminated materials under a cap
- Plans for soil erosion, sediment control and air monitoring during remediation activities
- Plans for final surface cover
- Plans for the use of the eastern part of the site by Great Lakes Dredge and Dock Company to process dredge spoils
- A revised treatment system ("funnel and gate" remedy) for dissolved contaminants in the groundwater to serve as a permanent remedy for groundwater contamination
- Plans for the characterization of sediments prior to and following removal of contaminated sediments from the Hackensack River
- Plans for the installation of additional DNAPL recovery wells on the eastern portion of the site

According to the final RAWPA, remedial activities at the site are scheduled for completion in February 2009 (see subsection D below for more details regarding proposed remediation). Implementation of the final RAWPA will reduce/mitigate many aspects of the existing contamination.

Environmental soil and groundwater samples were collected during Build Alternative Preliminary Engineering from 10 borings advanced on the portion of the Koppers Coke Site to be occupied by the proposed Kearny Rail Yard. Soil sample analytical data identified benzene, toluene, ethylbenzene, and xylene (BTEX) compounds and 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene at concentrations above the most stringent SCC in five of the 10 soil samples. The highest concentrations of these compounds were identified in one boring located adjacent to the property boundary with the SCCC site. Total phenolics exceeded the most stringent SCC in 5 of the 11 soil samples. Antimony was identified above the most stringent SCC in 1 of the 11 soil samples. Arsenic was identified in 2 of the 11 soil samples at concentrations above the most stringent SCC. Chromium was identified above the most stringent SCC of 20 milligrams per kilogram (mg/kg) in 9 of the 11 soil samples.

Benzene was identified in four of the groundwater samples at concentrations exceeding the GWQS of 1 ug/L. Chlorobenzene was detected in two of the groundwater samples at concentrations exceeding the GWQS of 50 ug/L. Total xylenes and toluene were identified in one of the groundwater samples at concentrations exceeding their respective GWQS. 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were detected in two groundwater samples at concentrations exceeding their respective GWQS. These borings were located near the western property boundary with the SCCC site or within or adjacent to an area of known DNAPL impacts.

Several SVOCs, primarily PAHs, were identified in eight of the nine groundwater samples at concentrations exceeding GWQSs. Cyanide was detected in five of the nine groundwater samples at concentrations exceeding the GWQS of 100 ug/L. Total phenolics were identified in three of the nine groundwater samples at concentrations exceeding the GWQS of 2,000 ug/L. Several Priority Pollutant Pesticides (p,p'-DDD, p,p'-DDE and p,p'-DDT) were identified in four of the nine groundwater samples at concentrations exceeding GWQSs.

Arsenic, chromium and lead were identified above their respective GWQS in all of the groundwater samples. Antimony, beryllium and mercury were identified above their respective GWQS in seven of the nine groundwater samples. Barium was identified above its GWQS in three of the groundwater samples. Copper, nickel, and zinc were identified above their respective GWQS in five of the groundwater samples. Cadmium was identified above its GWQS in six of the groundwater samples. Selenium was identified above its GWQS in one of the groundwater samples. Koppers Coke site data collection and related activities are being coordinated with the NJDEP Office of Brownfields Reuse.

On December 20, 2007, a combined application for a Waterfront Development Permit, Flood Hazard Permit and Freshwater General Permit No. 4 was submitted by Key Environmental, Inc. (for Beazer East) to NJDEP to obtain permits for remediation of the Koppers Coke Site in accordance with the NJDEP-approved RAWPA.

A Division of Land Use Regulation combined permit application for the remediation was originally submitted in November 2007. Revisions to the combined permit application were necessitated by the publication of the Flood Hazard Control Act Rules N.J.A.C. 7:13, revisions of the Land Use Regulation Program Form and the requirement to complete a Flood Hazard Area Individual Permit Checklist.

Remedial elements that are the subject of this application include: sediment removal from the Hackensack River; excavation of dike materials and sediments on the upland portion of the site; consolidation of waste piles on the site and associated disturbance of wetlands; installation of a slurry wall to contain contaminants; regrading the existing stockpile of processed dredged material and construction of four stormwater management basins with three of them having outlets to the Hackensack River; and installation of four DNAPL wells and an in-situ treatment system for groundwater collection and conveyance.

Standard Chlorine Chemical Company (SCCC). Operations at this 25-acre site northwest of the Koppers Coke site included the manufacturing and processing of chemicals since the early 1900s (Key Environmental, Inc. 1997). Environmental investigations conducted in the 1980s and 1990s identified contamination in the soil and groundwater across the site resulting from former operations. NJDEP issued an ACO in 1989 requiring remediation of the site (Key Environmental Inc. 2003).

Several areas of concern exist across the SCCC site, including: soil contaminated with dioxins, chromium and hexavalent chromium, volatile organic compounds, and semi-volatile organic compounds; two lagoons at the eastern portion of the site impacted by similar contaminants; concrete contaminated with PCBs in the vicinity of the former transformer area; groundwater contamination and DNAPL in the shallow historical fill aquifer and deep sand aquifer; contaminated drainage ditch surface water and sediments; and ongoing contamination of the Hackensack River surface water and sediments (Key Environmental 2003 and NJDEP 1989). Approximately 85 percent of the SCCC site is underlain by 2 to 10 feet of residual chromium ore deposited from the adjacent Diamond Shamrock site.

On September 19, 2007, the SCCC site was added by the USEPA to the National Priorities List for investigation and cleanup. Cleanup of the site will be addressed through the federal Superfund Program.

Diamond Shamrock. This property, located northwest of the Koppers Coke site, had been used for the production of sodium bichromate and potassium dichromate, primarily used for the preparation of leather tanning chemicals, since 1916. Production at the site continued until 1976. The majority of the buildings on the property were demolished in 1978 (Environmental Resources Management, Inc. 1997). The site is covered with 8 to 10 feet of fill comprised of chromium-laden slag and silty sand (Key Environmental Inc, 1999). Pursuant to a 1990 ACO, a remedial investigation (RI) was initiated in 1992 to address the extent of chromium contamination in the soils, groundwater, air, surface water, and sediment, and to assess the potential impacts on human health and the environment. As a result of the investigation, approximately 17 additional chemicals of concern were identified that exceed pre-established alternate remediation standards. Areas of concern include contaminated soils, shallow fill unit and deeper sand unit groundwater, Hackensack River surface water, and Hackensack River sediments. Interim remedial measures conducted on the site have included capping portions of it with asphalt overlying a geotextile liner, filling in Dead Horse Creek that crossed the site, and sealing the tide end of Dead Horse Creek with concrete (NJDEP 1979).

Based on a March 2004 Interim Response Action Work Plan and October 2004 Pre-Design Investigation Work Plan prepared for both the SCCC and Diamond Shamrock sites, the proposed remedial action for both sites included addressing impacted soil through capping and issuance of a Deed Notice (NJDEP 1987, Brown and Caldwell, 2001). Additional delineation activities and a DNAPL product recovery system for the SCCC site are proposed in the October 2004 plan to address product identified in both the shallow and deep aquifers. In-situ solidification of lagoon contents has been proposed to prevent future releases of DNAPL from the SCCC site and elevated concentrations of dissolved constituents. A barrier wall system has been proposed to eliminate the migration of contaminated groundwater in the shallow aquifer from both sites to the Hackensack River. Other proposed activities include the redesign and replacement of the piping and drainage ditches across the site, removal of surficial shore sediments (within 50 feet of the shore and within three feet below the top of the sediment in the Hackensack River), and demolition of remaining buildings.

A May 2007 Interim Response Action Workplan (IRAW) was submitted in response to a NOD issued by NJDEP with regard to a June 2006 IRAW developed by the Peninsula Restoration Group (SCCC, Tierra Solutions and Beazer East, Inc.) to consolidate interim remedial actions at both the SCCC and Diamond Shamrock sites into one project. The components of this plan, which have not been approved by NJDEP, include: 1) installation of a hydraulic barrier along the Hackensack River and around the perimeter of the sites to prevent potential migration of DNAPL and impacted groundwater from the two sites to the River; 2) construction and operation of a groundwater recovery and treatment system and DNAPL recovery system; 3) lagoon dewatering and backfilling as an interim remedial measure; 4) removal of river sediments within 50 feet of shore to a depth of three feet adjacent to the two sites; 5) implementation of interim surface cover and associated stormwater management controls; 6) disposal or consolidation on-site of previously containerized materials; 7) removal and off-site disposal of a concrete pad in a former transformer area; 8) management (disposal or on-site consolidation) of soft soils from the drainage ditch along the southern SCCC boundary to accommodate storm system upgrade and slurry wall construction; 9) maintenance of existing IRM surface covers; and 10) completion of other IRAW activities, including septic tank closure, removal of obstructions (e.g., concrete above grade saddles), removal of vault contents, and protection of utility lines and monitoring wells. Based on information contained in the IRAW and other SCCC reports, groundwater contamination from the SCCC may impact the western portion of the Koppers Coke site. Further investigation through the installation of monitoring wells on the western portion of the Koppers Coke site has been proposed.

The area of the Hackensack River adjacent to the peninsula where Koppers Coke, Diamond Shamrock and SCCC sites are located is contaminated with various compounds. The extent of this contamination has not been delineated. A December 2005 Hackensack River Study Area Remedial Investigation Work Plan was prepared by the Peninsula Restoration Group to determine the preliminary nature and extent of constituents in the Hackensack River sediments and to conduct a screening-level ecological risk assessment. This work plan was approved by NJDEP on June 20, 2006. Sampling activities were reportedly completed in November 2006. To date, the Remedial Investigation Report has not been completed.

Secaucus Connection and Reconfigured West End Wye

Based on a review of environmental database information, Sanborn Maps, historical aerial photographs and NJDEP records, 42 sites in the area of the Build Alternative impacts were identified with the potential for contamination (Environmental Data Resources 2004). Specific details regarding potential contamination and contamination sources at each of the sites are summarized in Appendix 4.12. The 33 sites identified in **Table 4.12-1** have been determined to warrant further analysis, based on their potential to impact the project area. Known or potentially contaminated sites likely to influence construction of the Build Alternative are described below. Depending on the timing of on-going or proposed remediation of

these sites, the Build Alternative may need to include site remediation as part of its construction components.

Site No. 1, the PSE&G Hudson Generating Station, is located directly south of the proposed connection to the West End Wye. In addition, properties owned by PSE&G are located north of the generating station and east of the inactive Boonton Line. According to a review of NJDEP records, multiple petroleum, solvent, wastewater, and PCB releases have occurred across the site. The site currently has a NJPDES permit for the discharge of several waste streams to the Hackensack River. One active 2,000-gallon gasoline underground storage tank, one No. 2 fuel oil above-ground storage tank, and one No. 1 fuel oil above-ground storage tank are reportedly on the site. Based on the results of a records review, other potential areas of concern (AOC) identified on the site include a bottom-ash retention basin and fly-ash pond, a discharge canal to the Hackensack River, a 59,000 cubic yard and 76,000 cubic yard "disposal area" adjacent to the Hackensack River, transformers, coal pits, oil switch yards, and fuel oil above-ground storage tanks.

As included in **Table 4.12-1**, 13 additional PSE&G sites were identified as being potentially contaminated. These additional sites, including a former Manufactured Gas Plant (MGP) site, are associated with former PSE&G operations south of the active Hudson Generating Station.

Site No. 392, the Mall (former Malanka) Landfill consists of two parcels. The first parcel is approximately 31 acres in area and is covered with a layer of waste about 20 to 30 feet thick. It is located north of the inactive Boonton Line and directly south of and oriented parallel to the NEC. The second parcel is approximately 35 acres in area and is covered with a layer of waste about 40 to 50 feet thick. This parcel is west of the inactive Boonton Line (Sadat Associates 2002). NJ TRANSIT would acquire the entire northern parcel (31 acres) of the landfill as part of the Build Alternative. The landfill received municipal, commercial and industrial waste. Both parcels were closed on January 1, 1978 under an ACO, with limited waste disposal on-site continuing until July 1, 1978. The landfill has not received final capping or other landfill closure improvements. Historic site investigation activities have identified landfill waste with concentrations of metals, VOCs, SVOCs, pesticides, and PCBs above NJDEP SCC. The horizontal extent of waste material has only been delineated on the eastern border of the second parcel. Waste materials were also reported to be located within the easement of the NEC (Robinson Aerial 2004).

An 1,800-foot-long pond consisting of trapped surface water lies between the landfill and NEC embankment. It is covered by a timber access platform remaining from construction of Frank R. Lautenberg Station. The pond depth appears to fluctuate, but normally ranges from one to three feet.

The construction of Interchange 15X by the New Jersey Turnpike Authority near Frank R. Lautenberg Station generated approximately 122,000 cubic yards of excess contaminated soil. A portion of the interchange is located next to the proposed Build Alternative Secaucus Connection. The material encountered along the right-of-way of the New Jersey Turnpike Authority project ranged from slightly contaminated, [but meeting Non-Residential Direct Contact Criteria (NRDCSCC)] to some material exceeding the NRDCSCC. The exceedances were primarily for parameters related to coal ash, including arsenic and beryllium, which may be related to the nearby PSE&G Hudson Generating Station. Groundwater samples collected in the area of the proposed New Jersey Turnpike Authority project had elevated concentrations of arsenic, lead, cadmium, nickel, beryllium, chromium, copper and mercury. The construction-generated contaminated soils were deposited on the Malanka Landfill between January and June 2003. The material reportedly was used to fill low areas and for regrading the site in preparation for capping and redevelopment.

TABLE 4.12-1: POTENTIALLY CONTAMINATED SITES – SECAUCUS CONNECTION AND WEST END WYE AREAS – NEW JERSEY

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
391	Figure 4.12-5 and 7 (App. 4.12)	Duffield/Van Keuren Aves. – Jersey City	PSE&G/Hudson Generating Station	NJDEP, Sanborn Maps, Aerial Photographs	Petroleum, Solvents, PCBs, Coal, Coal Ash.
392	Figures 4.12-3 and 4 (App. 4.12)	Not available	Mall (Malanka) Sanitary Landfill	NJDEP, Aerial Photographs	Metals, VOCs, SVOCs, Pesticides, and PCBs
240	Figure 4.12-8 (App. 4.12)	1281 Westside Ave. – Jersey City	Pat Cristelli Trucking Inc.	NJDEP	Petroleum
241	Figure 4.12-8 (App. 4.12)	100 Larch Ave., Jersey City	Unnamed Address	NJDEP	Petroleum, Solvents
274	Figure 4.12-6 and 13 (App. 4.12)	Not available	Jersey City Police Firing Range	Aerial Photographs, NJDEP	Lead and Arsenic
261	Figure 4.12-8 (App. 4.12)	55 Van Keuren Ave., Jersey City	Conway Eastern Express	NJDEP	Diesel Fuel, Gasoline
264	Figure 4.12-7 and 8 (App. 4.12)	105 Van Keuren Ave., Jersey City	G&L Trucking Inc	NJDEP	Diesel fuel
266	Figure 4.12-9 (App. 4.12)	120 Duffield Ave., Jersey City	Nicholas Galvanizing Co. Inc.	NJDEP	Diesel fuel, sulfuric acid
266	Figure 4.12-9 (App. 4.12)	123 Duffield Ave., Jersey City	Hudson County Chromate 86	NJDEP	Chromium
266	Figure 4.12-9 (App. 4.12)	123 Duffield Ave., Jersey City	Shore Trucking	NJDEP	Diesel Fuel
266	Figure 4.12-9 (App. 4.12)	123 Duffield Ave., Jersey City	Nicholas Hamilton Trucking	NJDEP	Chromium
266	Figure 4.12-9 (App. 4.12)	130 Duffield Ave., Jersey City	E & J Consolidation	NJDEP	Diesel Fuel
266	Figure 4.12-9 (App. 4.12)	135 Duffield Ave., Jersey City	Vineland Construction Co	NJDEP	Gasoline and Petroleum
267	Figure 4.12-8 (App. 4.12)	125 James Ave., Jersey City	Premier Trucking	NJDEP	Diesel Fuel
268	Figure 4.12-8 (App. 4.12)	St. Paul's Ave & West Side Ave, Jersey City	Unnamed Address	NJDEP	Unknown
268	Figure 4.12-8 (App. 4.12)	1183 West Side Ave., Jersey City	Abandoned Warehouse	NJDEP	Unknown
269	Figure 4.12-8 and 9 (App. 4.12)	438 St Paul's Ave., Jersey City	Bell Atlantic Garage	NJDEP	Gasoline

Source: Transit Link Consultants, 2008.

TABLE 4.12-1: POTENTIALLY CONTAMINATED SITES – SECAUCUS CONNECTION AND WEST END WYE AREAS – NEW JERSEY (CONTINUED)

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
269	Figure 4.12-8 and 9 (App. 4.12)	444 St. Paul's Ave., Jersey City	PSE&G Motor Pool	NJDEP	Fuel oil, mercury
269	Figure 4.12-8 and 9 (App. 4.12)	452 St. Paul's Ave., Jersey City	United Gas Improvement Works	NJDEP	MGP Waste
243	Figure 4.12- 9 (App. 4.12)	Corner of Duffield Ave & Meadow Ave (660 Block), Jersey City	PSE&G	1910 Sanborn Map	Petroleum
252	Figure 4.12-9 (App. 4.12)	44-48 Duffield Ave., Jersey City	PSE&G	1910 Sanborn Map	Petroleum, MGP Waste
254	Figure 4.12-9 (App. 4.12)	136 Howell Ave., Jersey City	PSE&G	1910, 1950, 1979, 1988 Sanborn Maps	MGP Waste
255	Figure 4.12-9 (App. 4.12)	104-118 Howell Ave., Jersey City	PSE&G	1910, 1950, 1979, 1988 Sanborn Map	MGP Waste
249	Figure 4.12-9 (App. 4.12)	487-501 St. Paul's Ave., Jersey City	PSE&G	1910, 1950, 1979, 1988 Sanborn Maps	PCBs, MGP Waste
250	Figure 4.12-9 (App. 4.12)	529 St. Paul's Ave., Jersey City	PSE&G Machine Shop	1950 Sanborn Map	Oils, Lubricants
251	Figure 4.12-9 (App. 4.12)	63-67 Duffield Ave., Jersey City	PSE&G	1950 Sanborn Map	Coal, MGP Waste
253	Figure 4.12-9 (App. 4.12)	Corner of Howell & Duffield Ave., Jersey City	NJ Asphalt and Paving Co	1950 Sanborn Map	Petroleum
256	Figure 4.12-9 (App. 4.12)	103 Howell Ave., Jersey City	Filling Station	1950, 1979, 1988, 1995 Sanborn Maps	Petroleum
245	Figure 4.12-8 and 9 (App. 4.12)	110 Charlotte Ave., Jersey City	PSE&G	1950, 1979, 1988 Sanborn Maps	MGP Waste
247	Figure 4.12-9 (App. 4.12)	Meadow Ave. between Duffield Ave & Charlotte Ave., Jersey City	PSE&G	1950, 1979, 1988 Sanborn Maps	Petroleum, MGP Waste
248	Figure 4.12-9 (App. 4.12)	78 Duffield Ave., Jersey City	PSE&G	1950 Sanborn Map	Gasoline
257	Figure 4.12-8 and 9 (App. 4.12)	70 James Ave., Jersey City	Motor Freight Station	1979,1995 Sanborn Map	Gasoline
246	Figure 4.12-8 and 9 (App. 4.12)	458 St. Paul's Ave., Jersey City	PSE&G	1979, 1988 Sanborn Maps	Gasoline, MGP Waste

Source: Transit Link Consultants, 2008.

During Preliminary Engineering, environmental samples were collected from nineteen environmental borings advanced on the northern portion of the landfill (Block 7, Lot 4). One groundwater sample was collected from one boring location and two groundwater samples were collected from two geotechnical wells. VOCs, SVOCs, PCBs, pesticides, and metals were identified in soils at concentrations above NJDEP's SCC. PCBs were identified in one soil sample location at concentrations exceeding hazardous waste criteria. VOCs, SVOCs, pesticides, and metals were identified in groundwater at concentrations above NJDEP's GWQS.

Sites 240 and 241 are related to cases involving spills or releases that have not been closed by NJDEP (Environmental Data Resources 2004). Soil and groundwater samples were collected during Preliminary Engineering from two environmental borings and one geotechnical boring advanced on Site 240, located at 1281 West Side Avenue. In addition, two environmental borings were advanced on the adjacent property to the west located at 25 Van Keuren Avenue. Contaminants identified in the soil and groundwater above applicable cleanup criteria included SVOCs and metals, which may be attributable to fill material on the site. Benzene and pesticides were also identified in the groundwater at concentrations above the GWQS at the 25 Van Keuren Avenue site. These contaminants may be attributable to off-site or unidentified on-site sources.

Site 267 (125 James Street, Jersey City) is an active NJDEP Known Contaminated Site with the Bureau of Underground Storage Tanks. Site 274 is the Jersey City Police Firing Range located within the Build Alternative rail connection area. Typical contaminants associated with firing ranges include lead and arsenic.

Hudson County Chromate 86/Nicholas Hamilton Trucking (Site 266) has been characterized by NJDEP as an Orphan Group 1 site, which is a chromium site for which no responsible party has been identified. Remedial investigation and/or remedial action selection for this site is reportedly underway (NJDEP 2003).

During Preliminary Engineering, two environmental borings were advanced near Duffield Avenue and James Street in Jersey City along the proposed alignment adjacent to the M&E Line and in the vicinity of Sites 266 and 267. The Duffield Avenue boring is also located adjacent to the former PSE&G MGP site.

Elevated PID readings, staining and a petroleum-like odor were identified in the boring advanced near Duffield Avenue. Benzene, benzo(a)pyrene and benzo(b)fluoranthene exceeded the most stringent SCC in the shallow sample collected from this boring. Benzene and benzo(a)pyrene exceeded the most stringent SCC in the deeper sample collected from this boring. Benzene, arsenic and lead were detected in the groundwater sample collected from this boring at concentrations exceeding New Jersey's Class IIA GWQSs.

No evidence of contamination was noted in the environmental boring advanced near James Street. Several SVOCs were detected in the shallow soil sample at concentrations exceeding the most stringent SCC. Several SVOCs and lead were detected in the groundwater sample collected from this boring at concentrations exceeding GWQSs.

Seven geotechnical borings were advanced during Preliminary Engineering in the proposed West End Wye area, in the vicinity of James Street, east of Duffield Avenue, West Side Avenue and Van Keuren Avenue, and the PSE&G Service Road. No evidence of contamination was noted in these borings. Based on the analytical results from soil samples collected from these borings, no exceedances of the most stringent SCC were found.

Five soil samples were also collected during the geotechnical investigation in areas of the proposed Secaucus Connection, including east of the PSE&G substation, Penhorn Creek, south of Frank R. Lautenberg Station, and the NJ Turnpike property. Based on the analytical results from soil samples collected from these borings, no exceedances of the most stringent SCC in four of the five borings were found. Several SVOCs exceeded the most stringent SCC in a soil sample collected from the NJ Turnpike property, however.

Soil and groundwater samples were collected during Preliminary Engineering from several properties within the proposed Secaucus Connection area, including the Sewnarine Property, Block 3, Lot 7), PSE&G properties, and the Town of Secaucus, Block 7, Lot 2). Contaminants identified in the soil and groundwater above applicable cleanup criteria included SVOCs and metals, which may be attributable to fill material. PCBs, which may be attributable to former or current operations, were also identified in soils on the PSE&G property at concentrations above the most stringent SCC.

HUDSON RIVER

APPLICABLE GUIDANCE AND REGULATIONS

Prior to determining disposal considerations for any materials excavated during tunneling activities, it is necessary to determine if these materials would be classified as hazardous waste, in accordance with RCRA regulations, specifically 40 CFR Part 261. In addition, further evaluation and comparison of analytical data to applicable soil cleanup criteria may also be required, if these materials are non-hazardous and proposed for beneficial reuse. Dredging would not be part of the Build Alternative. If and when necessary, coordination regarding tunneling under the Hudson River would take place with the NJDEP Land Use Regulation Program, the NJDEP Site Remediation and Waste Management Program, Office of Dredging and Sedimentology and the Office of Brownfields Reuse and NYSDEC.

EXISTING AND POTENTIALLY CONTAMINATED SITES

No specific potentially contaminated sites within the Hudson River have been identified. However, as a result of PCB contamination, a 200-mile stretch of the river, from Hudson Falls, New York to the Battery of New York City, has been designated a Superfund site by USEPA.

Sediment quality data for the portion of the Hudson River in the project area was obtained from the National Sediment Inventory (NSI) for two sampling stations located in the Hudson River near the Build Alternative alignment, and additional NSI sampling stations located in the Hudson River to the north and south (USEPA 2002). Detectable concentrations of PCBs, heavy metals, PAHs, and pesticides have been noted. No data was available from the NSI regarding dioxin concentrations in the Hudson River.

During the Preliminary Engineering geotechnical investigation for the Hudson River Tunnels alignment, three soil samples were collected from each geotechnical boring location: one at the surface, one at the interval above bedrock, and one intermediate sample (mid-point of boring). In anticipation of potential reuse of any sediment removed as a result of construction, analytical results were compared to NYSDEC unrestricted use soil cleanup objectives (SCOs) and NJDEP SCC. Analytical results generally indicated exceedances of NYSDEC Unrestricted Use SCOs and/or NJDEP SCCs for metals, SVOCs and PCBs. These exceedances were generally more frequent in the shallow versus the deeper soil samples.

NEW YORK

APPLICABLE GUIDANCE AND REGULATIONS

Site Remediation Requirements

According to NYSDEC Draft DER-10, Technical Guidance for Site Investigation and Remediation (December 2002), for any site investigation or remediation project for which NYSDEC oversight, approval, or acceptance is requested or mandated by law, an oversight document must first be executed with NYSDEC to address oversight cost reimbursement, liability release, and other issues specific to that site.

Hazardous Waste Regulations

NYSDEC identifies hazardous waste and other waste management requirements in 6 NYCRR Parts 360 through 376. NYSDEC has been delegated authority by USEPA to administer RCRA in New York.

Soil Reference Values

Contaminants detected in soils in New York State are compared to the NYSDEC Remedial Program Soil Cleanup Objectives found in 6 NYCRR Part 375, Subpart 375-6. This regulation addresses contaminants in soil (i.e., VOCs, SVOCs, metals, PCBs, pesticides and herbicides) from any potential source, and includes cleanup levels for chemicals of concern. The handling, disposal and/or reuse of petroleum-contaminated soils are conducted in accordance with NYSDEC Spill Technology and Remediation Series (STARS) Memo #1 – Petroleum-Contaminated Soil Guidance Policy.

Water Standards and Regulations

NYSDEC has promulgated drinking water standards (known as Class GA Standards), and uses them as reference values for groundwater. Although these standards are intended for public drinking water supplies, they are generally applied by NYSDEC to groundwater, and are also used to evaluate overall water quality.

New York State has also implemented the State Pollution Discharge Elimination System (SPDES), which provides permit requirements and effluent limitations for wastewater discharges to the waters of the State. NYCDEP Bureau of Wastewater Pollution Control has established regulations limiting the concentrations of certain constituents in effluent discharged to the municipal sewer system.

Petroleum Storage Tanks

The removal of petroleum storage tanks in New York is regulated by NYSDEC (6 NYCRR Part 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater, must also be removed (6 NYCRR Part 611.6). Article 12 of the New York Navigation Law provides notification and management requirements for spills to the waters of the State.

Asbestos-Containing Materials and Naturally Occurring Asbestos

Proper abatement and disposal of ACM in New York State and New York City is required under State of New York Article 30 - Labor Law, Asbestos or Products Containing Asbestos Licensing 12 NYCRR - Part 56 Asbestos Regulations (revisions effective September 5, 2006) and the requirements of NYCDEP Title 15. Handling and disposal of asbestos would conform to OSHA Standard 29 CFR 1926.1101, Department of Transportation (DOT) 49 CFR 171, 172 and 173, and USEPA Standard 40 CFR Part 61.

Handling, Storage, Transportation, and Disposal of Hazardous Materials

NYSDEC requires the implementation of fugitive dust control measures at sites that contain elevated concentrations of SVOCs and metals (TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program).

NYSDEC identifies hazardous waste and other waste management requirements in 6 NYCRR Parts 360 through 376. The waste facilities require representative waste sampling and laboratory analysis prior to accepting material for disposal.

EXISTING AND POTENTIALLY CONTAMINATED SITES

Within the portion of the project area in New York, a total of 195 sites were identified during the PESA with the potential for contamination. Specific details regarding potential contamination and contamination sources at each of these sites are summarized in Appendix 4.12. Sites identified in **Table 4.12-2** have been determined to warrant further evaluation, based on the potential to cause an impact in the project area. Based on the likelihood of potential contamination, the information collected during the PESA was divided into three groups. Category A included sites that do not reasonably appear to have affected the soil, soil gas, or groundwater, and, therefore, do not warrant additional analysis.

Category B included sites that have a greater potential for contamination, but still are unlikely to warrant additional analysis, based on dates, types of operations and regulatory status. Category C included sites that reasonably appear to have the potential to have resulted in contamination that could have affected the project area, and should undergo additional analysis, including the acquisition of site records through the federal FOIA and/or relevant New York State public records act(s), and potential sampling events as part of an Environmental Site Investigation. The 51 sites identified as Category C sites were determined to warrant further analysis.

Several geotechnical and environmental borings were advanced during Preliminary Engineering in the vicinity of the proposed fan plants and station locations. Analytical results from soil samples collected from the geotechnical borings generally identified exceedances of NYSDEC Unrestricted Use SCOs for metals and SVOCs, consistent with contaminants associated with historic fill. Additional environmental borings are proposed for fan plant and station locations as part of the design phases of the project.

Twelfth Avenue Fan Plant/Construction Access Shaft Site

A fan plant and construction access shaft and construction laydown area are proposed for the western portion of the current Con Edison "Workout" facility located between Eleventh and Twelfth Avenues and West 28th and West 29th Streets (Block 674). This facility provides storage and transportation functions. Vehicles and equipment are staged at this facility to support workers who maintain and operate the company's energy distribution systems (Casewell, Eicher and Hill 1996). The three-acre site includes a two-story administrative building along the eastern property line and a single-story building for storage and maintenance along the southeastern portion of the site. The western portion of the site, where the fan plant, access shaft, and laydown area would be located, is a storage area for both supplies and vehicles. The western portion (east of the proposed components of the Build Alternative) also includes a vehicle fueling facility consisting of two 4,000-gallon underground gasoline storage tanks (replaced in 1998) and one 4,000-gallon diesel fuel underground storage tank. A Flush Facility, which is used by Con Edison to process and dispose of flush debris from underground structures (e.g., manholes and vaults), is located on the northwestern perimeter of the site, also east of the proposed Build Alternative components. Con Edison is currently operating this flush facility under a consent order with NYSDEC.

TABLE 4.12-2: POTENTIALLY CONTAMINATED SITES (NEW YORK)

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
471	Figure 4.12-24 (App 4.12.)	550 W. 30th St.	Leaking Underground Storage Tank Site: Tank Test Failure No. 2 Fuel Oil.	NYSDEC	Petroleum
487	Figure 4.12-25 (App. 4.12)	432-438 10th Ave.	AMOCO Gas Station	NYSDEC	Petroleum, PCBs
498	Figure 4.12-25 and 26 (App. 4.12)	333 W. 34th St.	Salomon Smith Barney: Tank test failure and active spill (No. 6 fuel oil)	NYSDEC	Petroleum
542	Figure 4.12-26 (App. 4.12)	460 W. 34th St.	MTA-NYCT: Large quantity generator of hazardous waste.	NYSDEC and Site Inspection	Not Reported
432	Figure 4.12-25 (App. 4.12)	222 W. 34th St.	Commercial Lot: Active spill (fuel oil).	NYSDEC	Petroleum
556	Figure 4.12-26 (App. 4.12)	151 W. 34th St.	Con Edison: Large quantity generator of hazardous waste.	NYSDEC	Not Reported
557	Figure 4.12-26 (App. 4.12)	150 W. 34th St.	Old Navy Store: Active spill (200-gallons of hydraulic oil in basement).	NYSDEC	Petroleum
411	Figure 4.12-24 (App. 4.12)	Block 674 (Between W. 28th and W. 29th St.)	Former Freight Yard, Terminal and Station. Former Coal Yard. Con Edison Garage.	1890-1988 Sanborn Maps	Petroleum, Coal Ash and/or other Hazardous Waste
416	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Filling Station (Corner of 11th Ave. and W. 30th Street)	1979-1988 Sanborn Maps and Site Inspection	Petroleum and/or other Hazardous Waste
418	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	New York City Dept. of Sanitation Garage (3 Gasoline USTs)	1951-1988 Sanborn Maps	Petroleum
417	Figure 4.12-24 (App. 4.12)	675 Block Between W. 29th and W. 30th St.)	Garage & Repair (604 W. 30th Street)	1979-1988 Sanborn Maps	Petroleum, Solvents
405	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Truck Rental and Private Garage with 1,500-gallon gasoline UST (624-628 W. 30th Street)	1951-1988 Sanborn Maps	Gasoline, Solvents
409	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Truck Terminal with 6 gasoline USTs (613-637 W. 29th Street)	1951 Sanborn Map	Gasoline, Solvents
425	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Express Depot with 2 gasoline USTs (601 W. 29th Street)	1951 Sanborn Map	Gasoline

Source: Transit Links Consultants, 2008.

TABLE 4.12-2: POTENTIALLY CONTAMINATED SITES (NEW YORK) (CONTINUED)

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
426	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Asbestos Construction Co. Distributing Warehouse (603-607 W. 29th Street)	1951 Sanborn Map	Asbestos
406	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	John Stanley Soap Works/Soap Factory (639-643 W. 29th Street and 626-658 W. 30th Street)	1899-1951 Sanborn Maps	Petroleum, Solvents
426	Figure 4.12-24 (App. 4.12)	Block 675 (Between W. 29th and W. 30th St.)	Smelting and Refining Works/Iron Works (Corner of 11th Ave. and W. 29th Street)	1899-1930 Sanborn Map	Metals, Solvents, Oils
414	Figure 4.12-24 (App. 4.12)	Block 676 (Between W. 30th and W. 33rd St.)	Rail Yards	1890-1988 Sanborn Maps	Petroleum, PCBs and/or other Hazardous Waste
403	Figure 4.12-24 (App. 4.12)	Block 665 Waterfront Area)	Potential Aboveground Storage Tanks (Marginal between W. 30th and W. 31st Street)	1930 and 1951 Sanborn Maps	Petroleum
		Block 665 Waterfront Area)	Oil Storage (Marginal and W. 33rd Street near Pier 72)	1979 Sanborn Map	Petroleum
424	Figure 4.12-24 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Gasoline Station, Four 550-gallon gasoline tanks (302-304 11th Ave.)	1930 Sanborn Map	Gasoline
422	Figure 4.12-24 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Auto Repair & Garage (312 11th Ave.)	1930-1985 Sanborn Maps	Petroleum, Solvents
437	Figure 4.12-25 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Tank House (W. 30th Street)	1930 Sanborn Map	Petroleum
438	Figure 4.12-25 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Metal Purchasing Co. (W. 30th Street)	1951, 1979, 1985 and 1988 Sanborn Maps	Metals, Solvents and/or other hazardous wastes
436	Figure 4.12-25 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Filling Station (331 10th Ave.)	1979 Sanborn Map	Petroleum
439	Figure 4.12-24 and 25 (App. 4.12)	Block 701 (Between W. 29th and W. 30th St.)	Motor Freight Station (534 W. 30th Street)	1979, 1985 and 1988 Sanborn Maps	Petroleum
430	Figure 4.12-25 (App. 4.12)	Block 702 (Between W. 30th and W. 32nd St.)	Rail Yard and Storage Yard	1890-1988 Sanborn Maps	Petroleum, PCBs, and/or other Hazardous Waste

Source: Transit Links Consultants, 2008.

TABLE 4.12-2: POTENTIALLY CONTAMINATED SITES (NEW YORK) (CONTINUED)

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
434	Figure 4.12-25 (App. 4.12)	Block 702 (Between W. 30th and W. 32nd St.)	Metal Purchasing Co. (Metal Varnishing and Finishing)	1951-1988 Sanborn Maps	Metals, Solvents and/or other Hazardous Waste
430	Figure 4.12-25 (App. 4.12)	Block 704 (Between W. 32nd and W. 33rd St.)	Rail Terminal	1911, 1930, 1951 and 1979 Sanborn Maps	Petroleum, PCBs, and/or other Hazardous Waste
450	Figure 4.12-25 (App. 4.12)	Block 729 (Between W. 31st and W. 33rd St.)	Rail Yard (Center of Block Between 9th and 10th Ave.)	1911-1988 Sanborn Maps and Site Inspection	Petroleum, PCBs, and/or other Hazardous Waste
451	Figure 4.12-25 (App. 4.12)	Block 729 (Between W. 31st and W. 33rd St.)	Garage with 1,000-gallon Gasoline Tank (9th Ave.)	1930 Sanborn Map	Gasoline
432	Figure 4.12-25 (App. 4.12)	Block 729 (Between W. 31st and W. 33rd St.)	Filling Station (368-372 10th Ave.)	1951 Sanborn Map	Gasoline
449	Figure 4.12-25 (App. 4.12)	Block 729 (Between W. 31st and W. 33rd St.)	Auto Parking with Gasoline Tank	1951 Sanborn Map	Gasoline
419	Figure 4.12-24 (App. 4.12)	Corner of 11th Ave. and W. 28th St.	David's Auto Shop	Site Inspection	Petroleum
435	Figure 4.12-24 and 25 (App. 4.12)	527 W. 29th St.	Monitoring Well	Site Inspection	Unknown
460	Figure 4.12-25 (App. 4.12)	Block 731 (423 – 9th Ave.)	Dry Cleaners/Shoe Repair Shop	Site Inspection	Hazardous Materials
427	Figure 4.12-25 (App. 4.12)	Corner 10th Ave. and W. 34th St.	BP Gas Station	Site Inspection	Gasoline
504	Figure 4.12-26 and 32 (App. 4.12)	New Yorker Hotel W. 35th St.)	6 Vent Pipes and 2 Fill Ports	Site Inspection	Petroleum
532	Figure 4.12-26 (App. 4.12)	141 W. 35th St.	Dry Cleaners	Site Inspection	Hazardous Materials
415	Figure 4.12-24 (App. 4.12)	Block 676 (Corner W. 30th St. and 11th Ave. NW corner)	Monitoring Well	Site Inspection	Unknown

Source: Transit Links Consultants, 2008.

TABLE 4.12-2: POTENTIALLY CONTAMINATED SITES (NEW YORK) (CONTINUED)

Site No.	Map ID	Address	Site Identification	Reference	Potential Contaminants
395	Figure 4.12-24 (App. 4.12)	260 12th Ave.	Spills and Leaking Underground Storage Tanks Site	NYSDEC	Petroleum
393	Figure 4.12-24 (App. 4.12)	W. 30th St. and 12th Ave.	SQG of Hazardous Waste. Closed Spill Site. Petroleum Bulk Storage Site. Leaking Underground Storage Tank Site.	NYSDEC	Petroleum
486A	Figure 4.12-25 (App. 4.12)	555 W. 34th St.	SQG of Hazardous Waste, Several Closed Spill Cases at this address, Leaking Underground Storage Tank Site, Underground Storage Tank Site.	NYSDEC	Petroleum
486B	Figure 4.12-25 (App. 4.12)	538 W. 34th St.	Leaking Underground Storage Tank Site.	NYSDEC	Gasoline
483	Figure 4.12-25 (App. 4.12)	538 W. 33rd St.	Spills Site (Case Not Closed).	NYSDEC	Petroleum
485	Figure 4.12-25 (App. 4.12)	10th Ave. at W. 34th St.	Spills Site (Case Not Closed).	NYSDEC	Gasoline
491	Figure 4.12-25 (App. 4.12)	450 W. 33rd St.	SQG of Hazardous Waste, Petroleum Bulk Storage Site.	NYSDEC	Transformer Oil/PCBs
477	Figure 4.12-25 (App. 4.12)	366 10th Ave.	Petroleum Bulk Storage Site, Leaking Underground Tank Site, SQG of Hazardous Waste (Violations Noted)	NYSDEC	Petroleum
481	Figure 4.12-25 (App. 4.12)	406 W. 31st St.	Large Quantity Generator (LQG) of Hazardous Waste (AMTRAK).	NYSDEC	Various D (characteristic) and U (discarded commercial chemicals) Wastes
448	Figure 4.12-25 (App. 4.12)	Between W. 31st and W. 33rd Street and 7th and 9th Aves.	Rail Yards	1911-1988 Sanborn Maps	Petroleum, Solvents, PCBs
447	Figure 4.12-25 (App. 4.12)	W. 31st Street (Between 9th and Dyer Aves.)	Machine Shop and Auto Parking (with gasoline tank)	1930 and 1951 Sanborn Maps	Petroleum, Solvents
514	Figure 4.12-26 (App. 4.12)	W. 31st Street (east of 7th Ave.)	Heating Oil Tanks	1930-1988 Sanborn Maps	Petroleum

Source: Transit Links Consultants, 2008.

The gasoline and diesel fuel underground storage tanks at this facility were replaced in 1998. During excavation, petroleum-impacted soil and groundwater were removed. Based on additional soil and groundwater investigation activities conducted at the site, residual gasoline contamination is present in soil and groundwater. A remedial action consisting of the injection of oxygen release compound into the dissolved contamination plume was conducted in 2005 (Shaw Group 2006). Additional proposed remedial actions at the site include the installation and pilot testing of an air-sparge/soil vapor extraction system to address the residual contamination in the soil and groundwater. NYSDEC has approved the conceptual remedial approach (NYSDEC 2006).

In addition to the current Con Edison facility, historic Sanborn Maps identified a former coal yard, freight yard, terminal and rail station at this location.

Several geotechnical borings were advanced during Preliminary Engineering in the vicinity of the Con Edison facility. Analytical results from soil samples collected from the geotechnical borings generally identified exceedances of NYSDEC's Unrestricted Use SCOs for metals and SVOCs. The results indicate that these contaminants are consistent with historic fill and not likely attributable to specific areas of environmental concern. Environmental borings are proposed at the location of this proposed fan plant/construction access shaft, as part of the design phases of this project.

A construction staging area and temporary relocation area for Con Edison vehicles and equipment is proposed one block north of Block 674 between West 29th and West 30th Streets and Eleventh and Twelfth Avenues (Block 675). Current uses on that block include truck parking, a filling station, an auto body shop, and a NYC Department of Sanitation Garage. Historically, this block has included a variety of commercial and industrial uses, including a soap factory, truck terminal, filling station, repair garages, and an asbestos construction company. Environmental borings are proposed at this location, as part of the final design phase of the project.

Dyer Avenue Fan Plant/Construction Access Shaft Site

Suspect tank fill ports/vent lines were identified in the vicinity of the proposed Dyer Avenue Fan Plant on Dyer Avenue (Block 731). The property associated with the fan plant has an (E) designation on the City zoning map associated with an underground storage tank. The (E) designation indicates the presence of an environmental issue that needs to be addressed before development of the property.

33rd Street and 35th Street Fan Plant/Construction Access Shaft Sites

Specific areas of concern identified with the 33rd Street Fan Plant (Block 809, between Sixth and Seventh Avenues) and the 35th Street Fan Plant (Block 784) include potential underground and aboveground heating oil storage tanks. During Preliminary Engineering, seventeen environmental borings were advanced on Block 784 and Block 809. Elevated concentrations of SVOCs, metals, pesticides and hexavalent chromium were identified above NYSDEC Unrestricted Use Soil Cleanup Objectives in soil samples collected from borings advanced on Block 809. Elevated concentrations of pyrene (a SVOC), lead, and mercury were identified above NYSDEC Unrestricted Use Soil Cleanup Objectives in soil samples collected from borings advanced on Block 784. This contamination is likely associated with historic fill material and may not be attributable to specific areas of environmental concern.

NYPSE Entrance Sites

Five entrances are proposed for NYPSE. Eighth Avenue Southeast and the associated ADA Access/Emergency Personnel Access elevator entrance are located at the southeast corner of Eighth Avenue and West 34th Street (Block 783). A small-quantity generator of hazardous waste (Stone & Webster Engineering Corp. at 250 West 34th Street) and tank fill ports/vent lines were identified in the vicinity of this proposed station entrance. No violations were identified with regard to the generator of

hazardous waste. A second ADA Access/Emergency Personnel Access elevator entrance is proposed on West 34th Street, mid-block between Seventh and Eighth Avenues. Based on historic Sanborn Maps, four gasoline tanks were associated with a bus terminal that preceded the construction of One Penn Plaza at this location.

Seventh Avenue Northwest is located at the northwest corner of West 34th Street and Seventh Avenue (Block 784). Several closed spill sites and a small-quantity generator of hazardous waste (New York City Transit Authority station) were identified in the vicinity of this proposed station entrance. No violations were identified with regard to the generator of hazardous waste.

Seventh Avenue Southwest is located at the southwest corner of West 34th Street and Seventh Avenue (Block 783). No potentially contaminated sites were identified at the location of this proposed station entrance.

Broadway Northwest is located at the northwest corner of Broadway and West 34th Street (Block 810). A small spill associated with a transformer vault and a large-quantity generator of hazardous waste (Con Edison V1963 at 151 West 34th Street) were identified in the vicinity of this proposed station entrance. No violations were identified with regard to the generator of hazardous waste.

Broadway Southwest is located at the southwest corner of West 34th Street and Broadway (Block 809). Several small spills primarily associated with manholes and transformer vaults and a small-quantity generator of hazardous waste (Penske Auto Center at 130 West 34th Street) were identified in the vicinity of this proposed station entrance. No violations were identified with regard to the generator of hazardous waste.

An ADA Access/Emergency Personnel Access elevator entrance is proposed for a portion of Block 758, Lot 25. No potentially contaminated sites were identified at this location. However, an active heating oil underground storage tank, and a fill port and vent pipe were identified at sites directly west of this proposed location. An ADA Access/Emergency Personnel Access elevator entrance is proposed for a portion of Block 809, Lots 49. A spill of approximately 10 gallons of transformer oil within a manhole was reported at this location in 1998.

MTA/LIRR John D. Caemmerer West Side Yard

The bored tunnels from the construction access shaft on the Con Edison site to NYPSE would be constructed through bedrock and would pass below a portion of the eastern portion of the MTA/LIRR John D. Caemmerer West Side Yard, located on Blocks 702 and 704, between Tenth and Eleventh Avenues and West 30th and West 33rd Streets. Historical use of that yard as a freight yard and train storage yard may have resulted in localized petroleum and metals impacts, as well as localized applications of pesticides and herbicides along the tracks. Historically, creosote would likely have been applied to the railroad ties, potentially resulting in localized impacts. Historical use of a metals works, junk yard, auto repair shop, and gasoline station at properties in the vicinity of the yard could have resulted in release of petroleum, and possibly metals, to subsurface soil and groundwater, which could affect conditions on the property (MTA 2004).

As part of the No. 7 Extension Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (FGEIS), a Phase II ESA, consisting of 34 soil borings and four groundwater monitoring wells, was conducted at the yard, to assess potential environmental concerns. The investigation identified SVOCs and metals concentrations (copper, mercury, and zinc) exceeding Technical and Administrative Guidance Memorandum (TAGM) Recommended Soil Cleanup Objectives. The FGEIS concluded that soil results are consistent with the presence of historic fill and not likely

attributed to specific areas of environmental concern (MTA 2004). Environmental and geotechnical borings are proposed for the yard as part of the design phases of the project.

D. FUTURE NO BUILD CONDITIONS

By 2030, remediation of sites in New Jersey, the Hudson River and New York, already known to regulatory agencies, would continue, although remediation at specific contaminated sites within the project area may not occur unless the contamination was discovered through some investigation not related to the Build Alternative. In addition, the extent of remediation conducted on some sites may be less without the Build Alternative.

E. LONG-TERM IMPACTS OF THE BUILD ALTERNATIVE

NEW JERSEY

NORTHEAST CORRIDOR

As described in Section 5.12, while construction of tracks and ancillary structures and equipment along the NEC would not, for the most part, involve extensive subsurface work, a potential exists for the disturbance of contaminated soil, and to a lesser extent groundwater, associated with historic railroad operations, fill material and adjacent industrial facilities. Remedial actions during construction in these areas would likely require excavation and disposal or reuse of potentially contaminated soils and proper management of potentially contaminated groundwater. Long-term impacts following construction activities would include the potential for contact and migration of contaminants left in place, which would require mitigation consisting of institutional controls in the form of a deed notice and CEA for soil and groundwater, respectively, as well as engineering controls (e.g., capping). Engineering and institutional controls would need to be maintained consistent with federal and state requirements.

Contaminated or potentially contaminated sites identified during the PESA located along the NEC (**Table 4.12-1**) that would be directly impacted by the Build Alternative include:

- Intermodal Properties – 501 New County Road, Secaucus (Site No. 278A)
- County Road LLC – 1 County Road, Secaucus (Site No. 278B)
- Norfolk Southern – County Road, Secaucus (Site No. 278C)
- McKay's Landfill – Penhorn Avenue, Secaucus (Site No. 279)
- JH Pantheon IV Site – 401 Penhorn Avenue, Secaucus (Site No. 281)
- Keystone Freight Corporation/National Retail Freight – 2820 16th Street, North Bergen (Site No. 284)
- Public Storage – 2100 Tonnelle Avenue, North Bergen (Site No. 287)
- 2001 Tonnelle Avenue Associates, North Bergen (Site No. 288)
- McDonald's – 2126-2216 Tonnelle Avenue, North Bergen (Site No. 296)
- Carmine Franco Property (Currently Vanessa Bus Company) – 1703-27 Jefferson Street, Hoboken (Site No. 354)
- Block 144 Development LLC Property – Adams Street and Grant Street, Hoboken (Site No. 354A)
- Malanka Landfill – Secaucus (Site No. 392)

Two sites have been identified for construction staging and materials/equipment laydown areas. The first site is located on the east side of Tonnelle Avenue in North Bergen, just south of the NEC. A power substation, switching station, and fan plant would be constructed on the east side of Tonnelle Avenue (currently McDonald's and Public Storage sites). A proposed fan plant would also be located in Hoboken just north of the Adams Street Wastewater Treatment Plant (currently Carmine Franco and Block 144

Development LLC sites). Investigation activities have identified contamination at these sites above applicable cleanup criteria. Remedial actions at these sites, if required, would likely involve the excavation and disposal of contaminated soils or reuse offsite and/or reuse on site under institutional and engineering controls and groundwater remediation through groundwater treatment and/or natural attenuation under an institutional control (i.e., CEA). Engineering and institutional controls would need to be maintained consistent with federal and state requirements.

PROPOSED KEARNY RAIL YARD

Following construction of the proposed Kearny Rail Yard, contaminated soil and groundwater would remain on-site above applicable criteria, with the potential for contact and migration of contaminants to adjoining sites. Long-term groundwater monitoring, as well as engineering controls (i.e., cap, sheet pile barrier wall) and institutional controls (i.e., deed notice, CEA), would need to maintained as long as contamination remains in place above applicable criteria. Kearny Rail Yard-related activities will continue to be coordinated with the NJDEP Office of Brownfields Reuse.

SECAUCUS CONNECTION AND RECONFIGURED WEST END WYE

Similar to the conditions encountered along the NEC, remedial actions during construction in this area would likely require excavation and disposal or reuse of potentially contaminated soils and proper management of potentially contaminated groundwater associated with contaminated sites along the proposed right-of-way (e.g., Malanka Landfill, PSE&G). Following construction activities, remaining contaminated soils and groundwater would be left in place, with the potential for contact or the migration of contaminants. Engineering and institutional controls would need to be maintained consistent with federal and state requirements.

Contaminated or potentially contaminated sites identified during the PESA located along the Secaucus Connection and Reconfigured West End Wye (**Table 4.12-1**) that would be directly impacted by the Build Alternative include:

- NW West Corporation – 1281 West Side Avenue, Jersey City (Site No. 240)
- Former PSE&G Facilities – Jersey City (Site Nos. 243, 245, 246, 247, 248, 249, 250, 251, 252, 254, and 255)
- Hudson County Chromate 86 – 123 Duffield Avenue, Jersey City (Site No. 266)
- PSE&G/Hudson Generating Station – Duffield/Van Keuren Avenue, Jersey City (Site No. 391)
- Malanka Landfill – Secaucus (Site No. 392)

HUDSON RIVER

The new tunnels under the Hudson River would be a bored design, and, since the tunnels would be at a considerable depth (50 feet) below the river bottom, it would be unlikely that materials excavated during from tunneling activities would result in any significant contamination or long-term impacts. Analytical data generated to date indicate that soils excavated during construction may be acceptable for beneficial reuse, such as for fill for the proposed Kearny Rail Yard or proposed rail embankments in Secaucus.

NEW YORK

Remedial actions during construction in Manhattan would likely include excavation and disposal or reuse of potentially contaminated soils and proper management of potentially contaminated groundwater associated with contaminated sites along the proposed right-of-way. Following construction activities, remaining contaminated soils and groundwater would be left in place, with the potential for contact and/or migration to adjoining sites. Sites in Manhattan where contaminated soils would be left in place following Build Alternative construction activities would require mitigation, including NYSDEC-

approved engineering control (e.g., capping). Long-term impacts associated with contaminated groundwater within the project area would require long-term remediation and/or long-term monitoring, following construction activities. Engineering and institutional controls would need to be maintained consistent with federal and state requirements.

Contaminated or potentially contaminated sites identified during the PESA located in Manhattan (**Table 4.12-2**) that would be directly impacted by the Build Alternative include:

- Con Edison, Block 674 – between Eleventh and Twelfth Avenues and West 29th and West 28th Streets (Site No. 411)
- Block 675 – between Eleventh and Twelfth Avenues and West 29th and West 30th Streets (Site Nos. 405, 406, 409, 411, 416-418, 425, and 426)
- Block 731, Lot 22 – between Ninth and Tenth Avenues and West 33rd and 34th Streets (proposed Dyer Avenue Fan Plant)

CEQR PUBLIC HEALTH EFFECTS

To comply with New York City's CEQR requirements, contaminated materials were considered in the context of public health. Since contaminated materials would be properly managed, isolated, or removed during construction in accordance with the project's Construction Environmental Control Plan (see Section 5.12), no long-term impacts to public health would be expected to occur.

F. MITIGATION

- In New Jersey contaminated sites will be mitigated during construction, as discussed in Section 5.12, through:
  - Excavation and disposal of contaminated soils offsite, reuse onsite under institutional and engineering controls, or reuse off site.
  - Remediation of groundwater through treatment and/or natural attenuation under an institutional control (i.e., CEA).

  Engineering and institutional controls will be maintained by NJ TRANSIT, consistent with federal and state requirements to minimize the contact and migration of contaminants left in place.
- The following sites in New Jersey will be mitigated by NJ TRANSIT:
  - Intermodal Properties – 501 New County Road, Secaucus (Site No. 278A)
  - County Road LLC – 1 County Road, Secaucus (Site No. 278B)
  - Norfolk Southern – County Road, Secaucus (Site No. 278C)
  - McKay's Landfill – Penhorn Avenue, Secaucus (Site No. 279)
  - JH Pantheon IV Site – 401 Penhorn Avenue, Secaucus (Site No. 281)
  - Keystone Freight Corporation/National Retail Freight – 2820 16th Street, North Bergen (Site No. 284)
  - Malanka Landfill – Secaucus (Site No. 392)
  - Public Storage – 2100 Tonnelle Avenue, North Bergen (Site No. 287)
  - 2001 Tonnelle Avenue Associates – North Bergen (Site No. 288)
  - McDonald's – 2126-2216 Tonnelle Avenue, North Bergen (Site No. 296)

- Carmine Franco Property (Currently Vanessa Bus Company) – 1703-27 Jefferson Street, Hoboken (Site No. 354)
- Block 144 Development LLC Property – Adams Street and Grant Street, Hoboken (Site No. 354A)
- NW West Corporation – 1281 West Side Avenue, Jersey City (Site No. 240)
- Former PSE&G Facilities – Jersey City (Site Nos. 243, 245, 246, 247, 248, 249, 250, 251, 252, 254, and 255)
- Hudson County Chromate 86 – 123 Duffield Avenue, Jersey City (Site No. 266)
- PSE&G/Hudson Generating Station – Duffield/Van Keuren Avenue, Jersey City (Site No. 391)

- At the Malanka Landfill site, mitigation activities will be conducted by NJ TRANSIT in accordance with an approved Landfill Closure Plan, which will address disruption, closure, and post-closure care of the landfill in accordance with NJDEP solid waste rules. Long-term actions that will be conducted by NJ TRANSIT include groundwater monitoring, maintaining site access control and operations and maintenance of the final landfill cover, groundwater treatment systems, landfill gas venting systems, and drainage systems.
- At the site of the proposed Kearny Rail Yard, mitigation activities that will be conducted by NJ TRANSIT include: continued inspection and maintenance of the sheet pile barrier wall along the Hackensack River; groundwater monitoring; and monitoring and maintenance associated with any institutional or engineering controls established for the site. Kearny Rail Yard-related activities will continue to be coordinated with the NJDEP Office of Brownfields Reuse.
- In New York contaminated sites will be mitigated during construction, as discussed in Section 5.12, through:
  - Excavation and disposal of contaminated soils offsite, reuse onsite under institutional and engineering controls, or reuse off site.
  - Remediation of groundwater through treatment and/or natural attenuation under an institutional control (i.e., CEA).

  Engineering and institutional controls will be maintained by NJ TRANSIT, consistent with federal and state requirements to minimize the contact and migration of contaminants left in place.
- The following sites in New York will be mitigated by NJ TRANSIT:
  - Con Edison, Block 674 – between Eleventh and Twelfth Avenues and West 29th and West 28th Streets (Site No. 411)
  - Block 675 – between Eleventh and Twelfth Avenues and West 29th and West 30th Streets (Site Nos. 405, 406, 409, 411, 416-418, 425, and 426)
  - Block 731, Lot 22 – between Ninth and Tenth Avenues and West 33rd and 34th Streets (proposed Dyer Avenue Fan Plant)