

14.1 INTRODUCTION

This chapter assesses the potential for the presence of contaminated materials in the proposed Project area (defined as the area encompassing the limits of construction activities). This chapter also describes the potential for exposure to contaminated materials during and after construction of the Build Alternative, and the specific measures that would be employed to protect public health, worker safety, and the environment in the event that contaminated materials are present in the proposed Project area. Contaminated materials are defined as potentially harmful substances (hazardous or non-hazardous) that may be present in soil, groundwater, sediment, surface water, air, containers, or building materials and may pose a threat to human health or the environment.

14.2 REGULATORY CONTEXT & METHODOLOGY

There are numerous regulations regarding contaminated materials at the federal and state levels. The applicable industry standards, regulatory requirements, guidelines and rules for contaminated materials handling and investigations are listed in Table F-1 in Appendix F, “Contaminated Materials.”

The assessment of potential impacts of the Build Alternative includes the following:

- Review of environmental databases for known contaminated sites within the project corridor for the Build Alternative and buffer areas of 500 feet, including a buffer area of 500 feet around the NJ TRANSIT-owned HBLR Headquarters. A site reconnaissance of the proposed Preferred Alternative Project Components A and B was also conducted to verify current land uses and to determine the need for further investigation and sampling. A 500-foot buffer on either side of the HBLR right-of-way where utility work is proposed (Preferred Alternative Project Component G) was also assessed.
- Evaluation of potential effects on the remedial elements that are located in the Redevelopment Area both within and outside of Preferred Alternative Project Component A, including: processed dredge material (PDM) surface cover; steel sheet pile wall; slurry walls; the Dense Non-Aqueous Phase Liquid Interim Remedial Measure (DNAPL IRM) system; funnel and gate systems; and the Standard Chlorine Chemical Company (SCCC) pump & treat system.
- Evaluation of the Build Alternative design including consideration of structural pilings that could provide a seepage path for contamination as well as installation practices to avoid seepage of contamination (see Chapter 17, “Construction Effects”).
- A review of construction protocols that would be followed to mitigate the potential for impacts to workers, the public and the environment based on the findings of the environmental database search and known conditions at Preferred Alternative Project Component A.

14.3 AFFECTED ENVIRONMENT

The potential for the presence of contaminated materials within the footprints of Build Alternative is discussed below.

14.3.1 Research Summary

Four reports summarizing the environmental database search was prepared by Environmental Data Resources (EDR) of Shelton, Connecticut (EDR 2015, 2017, 2018a and 2018b) and is provided in Appendix F. To supplement the EDR database searches, the NJDEP's GeoWeb database was also reviewed. Sites were then categorized as either requiring further investigation or not requiring further investigation based on the nature of the contamination and distance from the proposed Project area (NJDEP 2017, 2018). The EDR search and NJDEP GeoWeb review identified 2,815 sites within 500 feet of the Build Alternative that are listed on one or more of the regulatory databases described above as shown on Figure F1 in Appendix F. Of the 2,815 sites identified in the study area, six sites were further evaluated. Of these six sites, four would be impacted by the proposed construction activities: Koppers Koke Site, Meadowlands Maintenance Complex (MMC), Hoboken Yard, and Hudson County Chromate 202 (Caven Point Avenue). The other two sites, SCCC and Diamond Shamrock Corporation (Diamond Shamrock), would not be impacted by the Build Alternative. These six sites are labeled on Figure F1 in Appendix F "Contaminated Materials" and are described in the sections below as well as the rights-of-way that would be impacted during construction.

Additionally, portions of Kearny peninsula are underlain by historic fill and chromite ore processing residue (COPR). This fill may contain elevated levels of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), dioxins and furans, heavy metals, and hexavalent chromium. In September 2011, the State of New Jersey reached a settlement with Honeywell International, Inc., Occidental Chemical Corp., and PPG Industries, Inc., to establish responsibility for continued cleanup work, finish remediation at specified sites, and remediate COPR waste at 216 "orphan sites" (NJDEP 2011b). There are 51 Hudson County Chromate Sites located within the 500-foot study area of Preferred Alternative Project Components A through G. These are identified in Table F-2 in Appendix F "Contaminated Materials."

Based on previous remedial investigations conducted and the results of the EDR reports analysis, depth to groundwater within the areas of Project Components A, B, C, D and the western portion of Project Component E is shallow and present at approximately 9 feet below ground surface (ft bgs). The depth to groundwater varies between 10 to 15 ft bgs throughout the eastern portion of Project Component E, and all of Project Components F and G.

14.3.2 Sites of Interest

Koppers Koke Site

As explained in Chapter 3, “Land Use, Zoning and Public Policy,” Preferred Alternative Project Components A and B are part of the former “Koppers Seaboard Coke and By-Products Plant,” also known as the “Koppers Koke Site,” within the Redevelopment Area. The Koppers Koke Site is approximately 175 acres and is currently listed under NJDEP Program Interest (PI) Number G000001985. The site is currently owned by HCIA but is being remediated by Beazer East, Inc. (Beazer), the former property owner and responsible party for remediation pursuant to a 1986 Administrative Consent Order (ACO) with NJDEP. The cleanup was being performed under NJDEP oversight in accordance with the 1986 ACO and a 1997 Memorandum of Understanding (MOU) and since 2012 has been overseen by a Licensed Site Remediation Professional (LSRP).

In a letter from NJDEP dated February 8, 2017, NJDEP informed Beazer that the remedial investigation for the Koppers Koke Site is not complete, as river sediments require further investigation. Since Beazer did not meet the requirements for the March 7, 2014 statutory deadline for the completion and submission of the Remedial Investigation Report, the requirements for NJDEP Direct Oversight have been triggered.

Previous remedial investigations conducted at the site indicated contamination within the Redevelopment Area, including: pockets of coal tar dense non-aqueous phase liquid (DNAPL) on the north-eastern portion of the site; chlorinated DNAPL to the west of the site (emanating from the adjacent SCCC site); and COPR fill on the eastern and western areas of the site. The area of Preferred Alternative Project Components A and B are outside the coal tar DNAPL, chlorinated DNAPL, and COPR impacted areas. Site-wide soil and groundwater contamination of VOCs, polycyclic aromatic hydrocarbons (PAHs), cyanide, and metals has been identified and are present within the areas of Preferred Alternative Project Components A and B. Sediment contamination of SVOCs and arsenic was found along the Hackensack River.

Remedial actions have been underway at the site for several years. A steel sheet pile wall was installed around the entire edge of the site adjacent to the Hackensack River. A secondary barrier in the form of a slurry wall runs parallel to the sheet pile wall and an additional wing wall on the eastern portion of the Koppers site. These walls were installed to prevent the DNAPL plume from migrating to the river. An IRM system for coal tar DNAPL recovery was installed in the northeastern portion of the site and is currently still in operation. A funnel and gate system was installed inside the southern property boundary, east of the existing site access off of Fish House Road, to contain the benzene plume in the shallow groundwater emanating from the coal tar. The COPR contamination on site was capped with an impermeable high-density polyethylene (HDPE) geomembrane, which is referred to as a capillary break. The capillary breaks act as a barrier to prevent the hexavalent chromium from contaminating the overlaid fill. The capillary breaks cover approximately 0.27 acres in the eastern area and 7.43 acres in the western area of the Koppers Koke Site. The site-wide soil contamination has been capped with PDM subgrade. Contaminated sediments within 50 feet of the shore were previously removed to a depth of three to five feet. The site has a groundwater classification exception area (CEA) established for the site-wide groundwater

contamination previously identified. A CEA is intended to provide an institutional control for groundwater pollution in a localized area caused by discharge at a contaminated site. The site is listed on the known contaminated site list (KCSL), a list maintained by the NJDEP to provide a record of sites with confirmed soil or water contamination at levels greater than the applicable cleanup standards.

The majority of the remedial action activities have been completed in accordance with the approved Remedial Action Work Plans (RAWPs) including the final placement of PDM. Construction activities for Preferred Alternative Project Component A would impact PDM, soil and groundwater contamination, and portions of the slurry wall and sheet piling. The development proposed by this project would require an LSRP-approved RAWP Amendment to be submitted to NJDEP to inform them of the changes to be made. Beazer would be responsible for all LSRP compliance for Preferred Alternative Project Components A and B.

Meadowlands Maintenance Complex (MMC)

Preferred Alternative Project Components C and D, and the optional routing for Project Component D, are partially located on the MMC property located southwest of the Koppers Koke Site. The 76-acre site is currently owned by NJ TRANSIT and is used for the maintenance of NJ TRANSIT locomotives and passenger rail cars. The site is listed on the KCSL and on the NJDEP Historic Fill database. It is identified as NJDEP PI number 030517 and Mr. William S. Pendexter (License Number 57390) is the assigned LSRP. The Remedial Investigation Report (RIR) was submitted in May 2016 and the Remedial Action Report (RAR) is currently pending. The Remedial Action Regulatory Timeframe is shown as May 6, 2021. Findings have indicated the presence of soil and groundwater contamination consistent with historic fill as well as light non-aqueous phase liquid (LNAPL). LNAPL collection systems were previously constructed at the site; however, they are not currently operational. LNAPL at the site is currently monitored and removed manually if necessary, in accordance with an NJDEP correspondence dated December 16, 2010.

Hoboken Yard

Hoboken Yard is located at the end of Preferred Alternative Project Component E. The site is owned and operated by NJ TRANSIT as a commuter rail terminal, bus terminal, a ferry terminal, and an extensive train maintenance and storage yard, and includes service and inspection facilities, train wash, and crew quarters. The Yard is identified as NJDEP PI number G000005103 and Mr. Mittul Patel, P.E. (License Number: 591566), is the LSRP. The historical record review identified 51 potential Areas of Concern (AOCs). A RI was conducted between March 2015 and August 2017 to delineate contamination within soil, groundwater, sediment, and surface water associated with the AOCs. The site is listed on the NJDEP Historic Fill database and concentrations of PAH and metals in on-site soils and groundwater are consistent with historic fill. Petroleum-related contamination, including residual product, has historically been identified at the site due to past railroad related operations. The Remedial Investigation Report (RIR), which included a CEA application for contaminated groundwater, was submitted to the NJDEP in July 2018. Based on these recent investigations, a deed notice is recommended for impacted soils and will be submitted as part of the RAWP.

Hudson County Chromate Site 202

The Hudson County Chromate “Site 202” is a NJ TRANSIT owned property located at the HBLR Headquarters in Jersey City, where the proposed platform for the emergency generators (nanogrid) would be built. The site is listed on the KCSL and NJDEP Historic Fill databases. It is identified as PI number G000044583 and there is no LSRP assigned. The site has groundwater contamination consistent with historic fill. Petroleum-related contamination has historically been identified at the site due to past railroad related operations, including benzene and VOCs. In 2004, NJ TRANSIT submitted a final RAR to NJDEP for the construction of the HBLR, including the HBLR Headquarters facility on Caven Point Avenue. NJDEP issued a Conditional No Further Action (NFA) Letter on May 3, 2012 for the HBLR Linear Construction Project.

The former Halladay Street Coal Gas PSE&G property has a groundwater CEA in place at the parcel west of the HBLR Headquarters that is 76 acres bounded to the west by Garfield Avenue and to the south by Caven Point Avenue. The plume migrated offsite and encompasses approximately 1.159 acres on the southwest portion of the HBLR Headquarters property. The groundwater contaminants of concern include lead, arsenic, benzene, naphthalene, total xylenes, toluene, ethylbenzene and benzo(a)anthracene. In May 2012, AECOM, on behalf of PPG Industries, Inc., prepared a Preliminary Assessment Report for the site. The report states that soil remedial actions were conducted during construction of the HBLR and that no current AOCs related to presence of chromate chemical processing waste (CCPW) have been identified. No further action was proposed in regards to any further CCPW investigation.

Standard Chlorine Chemical Company (SCCC)

The SCCC property is located along the Hackensack River to the north of the Koppers Koke site. It is identified as PI number G000001583 and there is no LSRP assigned. The 25-acre site was used for chemical manufacturing and processing operations between the early 1900s and the 1990s. The historic operations at the site included manufacturing of naphthalene products, mothballs (dichlorobenzene), drain cleaner products, creosote disinfectants, lead acid batteries, raw rubber parts, and dye carriers. COPR fill from non-site related activity is present on the property and resulting hexavalent chromium contamination is documented on the western portion of the site. The site is also referred to as Hudson County Chromate “Site 116.” The NJDEP identified several AOCs including on-site lagoons, dioxins in soil, VOCs and SVOCs in all media, and groundwater contamination including DNAPL, and contaminated drainage ditch sediment and surface water. Specific contaminants of concern include chromium, VOCs, SVOCs, metals, asbestos, and PCBs, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). The TCDD (dioxin) contamination was reported in the lagoon system and in the former processing area north of the lagoon system. Due to the extensive contamination, the NJDEP placed the site on the KCSL in 1989 and the USEPA placed the site on the Superfund National Priorities List (NPL) in 2007¹⁴.

¹⁴ Superfund, or the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), is a law enacted in 1980 that provides the federal government with the authority to respond directly to releases of contaminated substances that may endanger public health or the environment. Superfund sites are placed on the NPL.

Ongoing remediation activities at the site include construction of a perimeter hydraulic barrier, a groundwater recovery and treatment system for chlorinated DNAPL, lagoon cleanup, sediment cleanup, surface cover as the cap, and storm water management. A CEA has been established for the documented groundwater contamination. The Peninsula Restoration Group, which is composed of Beazer, SCCC, and Tierra Solutions, Inc., is undertaking the investigation and remedial activities associated with the SCCC site cleanup.

Diamond Shamrock Corporation

The 27-acre Diamond Shamrock property is located west of the Hackensack River between the SCCC site and Amtrak's Northeast Corridor. It is identified as PI number G000001974 and has an LSRP assigned. The chromium chemicals manufacturing facility initially engaged in the processing of imported chromite ore for the purpose of producing sodium bichromate for sale and for use in the manufacturing of other chromium chemicals. The site is also known as Occidental Chemical Corporation (successor to Diamond Shamrock) and Chemical Land Holdings. Chromium chemicals manufactured in the plant included chrome-based leather tanning agents, specifically a product sold under the trade name "Tanolin," and chromic acid. AOCs at the site include COPR-impacted site soil, shallow and deep contaminated groundwater aquifers, and the river sediments and surface water. Chromium contaminated material originating from Diamond Shamrock was utilized as fill off-site, which contaminated 40 other sites in Hudson County. The site is also referred to as Hudson County Chromate "Site 113." This site was placed on the KCSL in 1990 and a CEA has been established for the documented groundwater contamination. Tierra Solutions, Inc., is currently completing remediation and redevelopment at the Diamond Shamrock property. A RAWP was submitted May 3, 2018 to NJDEP.

Right-of-Way (NJ TRANSIT)

The proposed electrical line routes (Preferred Alternative Project Components C, D [including optional routing], E, and G) would be constructed along existing rights-of-way. Preferred Alternative Project Components C, E and Project Component D optional routing would run along the Morris & Essex Line right-of-way. Preferred Alternative Project Component D would depart the Morris & Essex Line but would remain within NJ TRANSIT right-of-way through the MMC property and access rail. The electrical power connectivity to the southern portions of HBLR would be through the construction of a small "nanogrid" (two emergency standby generators) on NJ TRANSIT-owned property at the HBLR Headquarters facility (Preferred Alternative Project Component F). Preferred Alternative Project Component G would run along the HBLR right-of-way. Rights-of-way of rail and roadways are known to potentially contain historic fill contamination as a result of fill material imported during construction. Rail rights-of-way are also known to potentially contain low to medium levels of PAHs, PCBs, and metals due to historic rail activities.

During construction of the HBLR, NJ TRANSIT conducted sampling of impacted areas for acquisition and materials management purposes. These investigations indicated that VOCs, SVOCs, PCBs and metals contamination was present throughout the alignment. In 2004, NJ TRANSIT submitted the final RAR to NJDEP for the HBLR project. NJDEP issued a Conditional NFA Letter on May 3, 2012 for the HBLR Linear

Construction Project. As mentioned above, the NFA includes the HBLR Headquarters on Caven Point Avenue.

14.4 PROBABLE IMPACTS OF THE PROJECT ALTERNATIVES

14.4.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed and NJ TRANSIT and Amtrak would continue to be served by the existing commercial grid. Without the microgrid, commuter and intercity rail service in Amtrak's and NJ TRANSIT's core service territory would remain vulnerable to power outages. Under the No Action Alternative, other planned and programmed transportation improvements for which commitment and financing have been identified would take place by 2021. These include projects in NJ TRANSIT's Resilience Program, Amtrak initiatives that will affect operations on the Northeast Corridor, and HCIA plans for warehousing development on portions of the Koppers Koke property.

In the absence of the proposed Project, Amtrak has plans to completely replace and rebuild Substation No. 41. Under the No Action Alternative, NJ TRANSIT intends to acquire the 20-acre parcel (Preferred Alternative Project Component A) on the Koppers Koke property as well as the six-acre parcel (Preferred Alternative Project Component B) located south of the Morris & Essex Line (due to a property settlement, as described in Chapter 2, "Project Alternatives"). Under the No Action Alternative, the Build Alternatives would not be implemented and the site would be available for other redevelopment options.

Remediation of the sites described in this chapter is expected to continue in accordance with their respective remedial investigation and remedial action schedules under the No Action Alternative.

14.4.2 Build Alternative

The proposed Project may be enrolled as a linear construction project (LCP) in accordance with NJDEP Linear Construction Technical Guidance, January 2012. An environmental sampling program may include investigation to identify and properly manage potentially contaminated/hazardous materials along the electrical lines (Project Components C, D, E, G, and the electrical lines for Project Component F within HBLR Headquarters property) performed in accordance with the NJDEP *Field Sampling Procedure Manual*, last updated April 11, 2011 (NJDEP 2011a). These activities would comply with the Site Remediation Reform Act (SRRA, N.J.S.A. § 58:10C-1 et seq. [2013]), the Administrative Requirements for the Remediation of Contaminated Sites (ARRCS, N.J.A.C. § 7:26C [2009]), the NJDEP Technical Requirements for Site Remediation (TRSR, N.J.A.C. § 7:26E [2012]), May 2012, and other applicable NJDEP technical guidance documents.

Project Components A and B

At Preferred Alternative Project Components A and B, where environmental conditions are well understood, a limited investigation would be performed to confirm current conditions, status of the remedial actions, and contaminant levels within NJ TRANSIT's acquisition area footprint. The limited

sampling activities would be used to establish current levels of any site contamination that may affect project design and construction.

Based on the records review and past/current land use, it is anticipated that contaminated materials could be encountered during construction if appropriate measures are not in place to avoid encountering contamination. During the installation of the proposed deep piles for the proposed buildings, contaminated soil below the PDM may be encountered. The proposed Project would also require subsurface disturbance in specific areas of Preferred Alternative Project Component A for installation of the storm water, sanitary and water supply systems and construction of the Main Facility's foundation and along the electrical line and gas pipeline routes (see Chapter 17, "Construction Effects").

Operation of the facility would require the handling and storage of fuel and hazardous non-fuel substances (such as ammonia and smaller quantities of industrial chemicals and cleaners used in the regular maintenance of the turbines and exhaust system). Preferred Alternative Project Component A would be designed to meet or exceed all relevant state and federal safety standards. Potential impacts related to fuel management and the handling and storage of hazardous substances needed to operate Preferred Alternative Project Component A are discussed in relation to occupational health and safety considerations in Chapter 16, "Safety and Security."

Project Components C, D and E

The operation of Preferred Alternative Project Components C, D and E, and the optional routing for Project Component D would not have any impacts on contaminated materials. However, the installation of new monopoles and underground duct banks could impact contaminated materials, because these areas are highly industrialized and used mainly for commercial services and transportation. Construction impacts of the proposed Project on contaminated materials are discussed in Chapter 17, "Construction Effects").

Project Component F

The operation of Preferred Alternative Project Component F would not have any impacts on contaminated materials. However, the installation of the foundation pad for the nanogrid could impact contaminated materials, because these areas are highly industrialized and used mainly for commercial services and transportation. Construction impacts of the proposed Project on contaminated materials are discussed in Chapter 17, "Construction Effects").

Project Component G

All Preferred Alternative Project Component G activities would be occurring within previously disturbed areas along the HBLR right-of-way. Limited excavation would be needed to install the utility poles or duct banks. The electrical lines along the HBLR would be installed on new utility poles (up to 39 feet high with a four-foot diameter foundation and depth of 20 feet) and/or within duct banks to a maximum depth of five feet below ground surface. The utility poles would be of similar scale and appearance as the existing infrastructure.

Based on the records review and past/current use, it is anticipated that contaminated materials could be encountered, as a result of contamination from neighboring properties. The impacts of the construction of the proposed Project on contaminated materials is discussed in Chapter 17, "Construction Effects." No impacts on contaminated materials from the operation of the proposed Project are anticipated.

14.5 SUMMARY OF SIGNIFICANT ADVERSE IMPACTS AND MITIGATION MEASURES

No significant adverse effects from the operation of the proposed Project on contaminated materials are expected. Also, as discussed in Chapter 17, "Construction Effects," with appropriate measures in place during construction, no significant adverse impacts from contaminated materials are expected for the proposed Project. The proposed monopoles would require the deepest-drilled foundations of the project, reaching 95 feet in depth to bedrock. When drilling to these depths, double/multi-cased piles will be used to ensure groundwater contamination, or migration of existing contamination does not occur.

With the implementation of the measures discussed above to characterize potential AOCs in the proposed Project area, and the protocols that would be followed for the handling, storage, transport and disposal of potential or known contaminated materials, the Build Alternative would not result in adverse impacts related to contaminated materials. Therefore, no other mitigation measures are needed. The Build Alternative would return a vacant brownfields site to active use, which is a positive net result.