

Appendix I Phase I Environmental Site Assessment

Hudson Yards - Western Rail Yard
NEW YORK, NEW YORK
Phase I Environmental Site Assessment

AKRF Project Number: 170425

Prepared for:

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EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by WRY Tenant LLC to perform a Phase I Environmental Site Assessment (ESA) of the approximately 13-acre site consisting of the western portion of the Hudson Yards Rail Yard complex in Manhattan, referred to as the Western Rail Yard (WRY) (the Property), as shown on Figures 1 and 2. The Property is bounded by West 30th Street to the south, Twelfth Avenue to the west, West 33rd Street to the north, and Eleventh Avenue to the east, and is also identified as New York Tax Block 676, Lots 1 and 5. The Property contains an active rail yard for the Long Island Railroad (LIRR) with ancillary mechanical and office buildings and surface parking. Proposed additions to the Property include a rail tunnel extension in its southern portion on Lot 1 (aka the Tunnel Encasement or Terra Firma), and a platform over the rail yard in its northern portion on Lot 5 (aka the Platform or LIRR Train Yard); the Platform is anticipated to support new construction in the future.

The Property previously underwent environmental review under New York City Environmental Quality Review (CEQR) and the State Environmental Quality Review Act (SEQRA) as part of the Western Rail Yard Final Environmental Impact Statement (FEIS) published in October 2009. A Restrictive Declaration (RD) was developed incorporating commitments associated with redevelopment, including environmental controls during construction and procedures for addressing hazardous materials, air quality and noise that will be subject to Mayor's Office of Environmental Remediation (OER) approvals. The current development plans are being analyzed in an updated EIS (currently underway) pursuant to CEQR and SEQRA.

This Phase I ESA was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, the Standard are described in Section 8.0. The term "Recognized Environmental Condition" or REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *De Minimis* Condition. A *De Minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action.

This assessment revealed the following:

Recognized Environmental Conditions (RECs)

- Spill #1802063 was reported for the Property in May 2018 at a listed address of 645 West 30th Street (Lot 1) when petroleum contamination was identified during a subsurface investigation in a former bus fueling and washing area located on the southwestern portion of the lot (remnants of the former fueling station including an inactive pump island were observed in this area during the site reconnaissance). The spill file notes indicated that the Property was listed under the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) facility #2-601983 and was associated with a former NYC Department of Sanitation (DSNY) garage (portions of the lot appeared to have been historically used by DSNY for vehicle storage). Several closed-removed underground and aboveground petroleum storage tanks ranging in size from approximately 275 to 2,500 gallons of hydraulic oil, motor oil, biodiesel and diesel were identified; the tanks were reportedly removed between 2007 and 2014. According to the spill file, no evidence of widespread contamination was identified during subsequent soil boring investigations completed in the former bus fueling area in 2018, and it was noted that the proposed redevelopment would require petroleum-contaminated soil removal to the water table with associated waste characterization sampling for off-site disposal purposes. The file notes indicated that remedial activities would be managed under OER oversight during redevelopment to address contamination and the spill was closed in January 2019.

- Spill #0407411 was listed for the Property in October 2004 with an address of Twelfth Avenue and West 33rd Street (Lot 5) due to significant on- and off-site petroleum contamination discovered during subsurface investigations. The contamination was noted to be primarily on the northwestern portion of the Property and to the north across West 33rd Street. Remedial investigations conducted in 2009 indicated few exceedances of dissolved VOCs in groundwater, and the file notes indicated contamination consistent with manufactured gas plant (MGP) waste was limited to an area on the northwestern portion of the site in deeper soil (below the groundwater interface). It was noted that additional remedial investigation activities were proposed to delineate potential residual contamination, which would be addressed under the NYSDEC State Hazardous Waste Site (SHWS) program (ID #231083). The spill was subsequently closed in March 2013; however, residual contamination may be present. Online NYSDEC records identified the Property as a “P” site (i.e., a potential SHWS site, being evaluated for addition to the registry).
- Sanborn maps and aerial photographs indicated that the Property had a long history of railroad and freight uses, since at least circa 1890 that could have affected subsurface conditions. Additional uses on the site included a lumber yard (subsequently a department store warehouse), freight storage sheds and a freight terminal. The Property was shown as a rail yard with three ancillary structures (noted as constructed between 1983 and 1985) for the LIRR by 1992.
- The surrounding blocks were largely industrial and automotive in use according to Sanborn maps and the regulatory database information, including various warehouses, a varnish works, a beer distribution facility with fueling operations (subsequently a motor freight station) on the north-adjacent block and various uses including a soap factory, motor freight stations, various manufacturing uses, garages with gasoline tanks, a bus garage (subsequently a DSNY garage) and filling stations on the south-adjacent block. Such uses may have affected area environmental conditions.

On-site/Off-site Environmental Concerns (items outside the scope of ASTM E1527-13 such as ACM, LBP and/or PCBs in Building Materials or Fill/Debris)

- Building components and/or historic fill materials may contain LBP and/or ACM and/or PCBs (including electrical equipment, train ballasts and other rail components).
- The Property was formerly part of the Hudson River, which was filled to expand the Manhattan shoreline beginning approximately in the late 1800s. Based prior subsurface investigations, the Property Site is underlain by an approximately 10- to 45-foot layer of fill materials (including silty sand, gravel, bricks, cinders, concrete, roots, and rock fragments).

Potential for Vapor Encroachment

Based on the RECs identified above, this Phase I ESA identified a potential for vapor encroachment into current or future buildings at the Property. The Property is subject to a Restrictive Declaration; thus, construction of any future buildings is subject to OER oversight. Construction of the proposed platform would include installation of ventilation systems for the train yard beneath. Any future buildings constructed on the platform above a ventilated train yard are unlikely to be affected by vapor encroachment, as no complete soil vapor exposure pathway would exist. It is anticipated that OER will require any future buildings constructed directly on soil and/or bedrock to incorporate vapor control measures.

RECOMMENDATIONS

- As noted above, the Property is subject to a Restrictive Declaration for air quality, noise, and hazardous materials concerns. The Hazardous Materials pre-construction requirements of the RD require that the proposed construction be conducted in accordance with an OER-approved Remedial

Action Plan (RAP) and Construction Health and Safety Plan (CHASP). Following construction, submission and approval of a Remedial Closure Report (RCR) is required to obtain the Notice of Satisfaction (NOS) from the OER, which will be needed to obtain occupancy permits from DOB. The RCR is intended to document that environmental remediation activities at the Property were conducted in accordance with the RAP. Coordination of construction activities may be required with NYSDEC in conjunction with the SHWS program, and the USEPA prior to disturbance of potential PCB-containing materials. All intrusive work must be in accordance with MTA LIRR requirements.

- As noted above, information in the NY Spills database indicated that additional remedial activities would be required to address known or potential residual contamination on the southwestern portion of the Property related to Spill #1802063 and on the northwestern portion of the Property under the SHWS program (ID #231083). Remedial activities in these areas should continue to be conducted in coordination with NYSDEC and OER, as required.
- Any USTs encountered during Property redevelopment should be properly closed and removed, along with any contaminated soil, in accordance with federal, state, and local regulations, including NYSDEC for registration and, if applicable, spill reporting.
- During any future subsurface disturbance, excavated soil should be handled and disposed of properly in accordance with all applicable regulatory requirements. Any evidence of a petroleum spill must be reported to NYSDEC and addressed in accordance with applicable requirements. Transportation of material leaving the Property for off-site disposal should be in accordance with federal, state, and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- Regulatory requirements for ACM (or suspect ACM until proven not to be ACM) include maintenance requirements and, prior to any renovation or demolition, inspection/sampling by a NYC-certified asbestos investigator to determine if the project will disturb ACM. Any ACM in an area to be disturbed (and any other ACM subsequently identified) should be removed prior to the renovation or demolition.
- Unless there is labeling or test data indicating that suspect PCB-containing electrical equipment does not contain PCBs, and that caulking/glazing and fluorescent lighting fixtures, thermostats, etc. are not mercury- and/or PCB-containing, if disposal is required, it should be performed in accordance with applicable federal, state and local regulations and guidelines.
- Any activities with the potential to disturb lead-based paint should be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration regulation 29 CFR 1926.62 - Lead Exposure in Construction).
- Dewatering activities should be conducted in accordance with applicable discharge requirements, including NYCDEP protocol, with pre-treatment (if required).

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1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by WRY Tenant LLC to perform a Phase I Environmental Site Assessment (ESA) of the approximately 13-acre site consisting of the western portion of the Hudson Yards Rail Yard complex in Manhattan, referred to as the Western Rail Yard (WRY) (the Property), as shown on Figures 1 and 2. The Property is bounded by West 30th Street to the south, Twelfth Avenue to the west, West 33rd Street to the north, and Eleventh Avenue to the east, and is also identified as New York Tax Block 676, Lots 1 and 5. Proposed additions to the Property include a rail tunnel extension in its southern portion on Lot 1 (aka the Tunnel Encasement or Terra Firma), and a platform over the rail yard in its northern portion on Lot 5 (aka the Platform or the LIRR Train Yard); the Platform is anticipated to support new construction in the future.

The Property previously underwent environmental review under New York City Environmental Quality Review (CEQR) and the State Environmental Quality Review Act (SEQRA) as part of the Western Rail Yard Final Environmental Impact Statement (FEIS) published in October 2009. A Restrictive Declaration (RD) was developed incorporating commitments associated with redevelopment, including environmental controls during construction and procedures for addressing hazardous materials, air quality and noise that will be subject to Mayor's Office of Environmental Remediation (OER) approvals. The current development plans are being analyzed in an updated EIS (currently underway) pursuant to CEQR and SEQRA.

The scope of services for this assessment was in conformance with ASTM Standard E1527-13 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*). Any exceptions to, or deletions from, this practice are described in Section 8.0. The scope included the following:

- Observations of the Property (reconnaissance) to identify potential sources or indications of hazardous substances, including: aboveground storage tanks (ASTs); underground storage tanks (USTs); tank vents and fill ports; transformers and other items that could contain polychlorinated biphenyls (PCBs), drums or areas where hazardous materials were used, stored, or disposed; stained surfaces and soils; stressed vegetation, leaks, odors. In addition, neighboring properties were viewed, but only from public rights-of-way, to identify similar concerns.
- Readily available geological and groundwater (hydrogeological) information was evaluated to assist in determining the potential for contamination migration (including in soil, soil vapor and/or groundwater) within, from and onto the Property.
- The reconnaissance of the Property included observation of any readily visible suspect asbestos-containing materials (ACM) and potential lead-based paint. However, no samples were collected or analyzed, and this reconnaissance provides neither definitive nor exhaustive information.
- A state database of county-level radon concentrations was used to determine typical indoor radon levels and compare them to United States Environmental Protection Agency (USEPA) guidelines.
- Historical fire insurance maps for the Property and nearby sites were reviewed to evaluate historical land uses.
- The following federal regulatory databases were reviewed to determine the regulatory status of the Property and other properties within the ASTM-defined radii: National Priority List (NPL); Superfund Enterprise Management System (SEMS); Emergency Response Notification System (ERNS); and Toxic Release Inventory System (TRIS). The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.

- The following state regulatory databases were reviewed to determine the regulatory status of the Property and other properties within predetermined radii: petroleum and hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Hazardous Substance Disposal Site Draft Study; Hazardous Waste Treatment, Storage or Disposal Facilities; Major Oil Storage Facilities (MOSF); Brownfield Cleanup Program (BCP); Registered Drycleaners; and City Environmental Quality Review (CEQR) E Designation Sites.
- Local agency reviews, including online Buildings and Finance Departments records, were conducted for the Property only.

2.0 PHYSICAL SITE DESCRIPTION

On November 29, 2020, Neoma Chefalo of AKRF conducted a reconnaissance of the Property from public streets and rights-of-way (the interior of the WRY was not accessible for inspection). The weather was clear and approximately 50 °F, the visibility good, and the premises adequately illuminated. Photographs from the reconnaissance are included in Appendix A. Details of the Property are shown on Figure 2.

2.1 General Site Conditions

The Property consisted of the 13-acre Western Rail Yard (WRY) site within the larger Hudson Yards complex in Manhattan (Block 676, Lots 1 and 5).

Lot 5, located on the northern and central portions of the Property, was occupied by the LIRR rail yard, which contained numerous railroad tracks and train car storage areas, with several asphalt-paved access roads. The majority of the lot contained train tracks with a central platform area and some ancillary support structures, including a single story structure on the northwestern portion of the lot (aka Building 1) that houses cleaning supplies and mechanical equipment, according to an April 2019 *30 Percent Resubmission Design Criteria Report for WRY* (discussed in Section 7.0). An additional ancillary two-story building (Building 2) was located just south of Building 1 and was reported to contain the headquarters and locker rooms for the train car maintenance personnel. Building 3, located on the southwestern portion of Lot 5, also contained locker rooms and offices for LIRR personnel according to the Design Criteria Report.

Lot 1, located on the southern portion of the WRY, contained asphalt-paved areas and apparent storage areas associated with the train yard. Several metal trailers and parked vehicles were located throughout. The southeastern portion of Lot 1 contained Building 4, a single-story structure that, according to the April 2019 Design Criteria Report, contained emergency service equipment, including a fire water tank, fire booster pumps, and an emergency generator (with fuel oil storage) to supply the current fire protection system throughout the WRY. An apparent former filling station was observed in the southwestern portion of Lot 1 (including an apparent former pump island and metal trailer with several apparent gasoline or diesel vent pipes mounted to the exterior); signage in the area identified this area as the WRY Vehicle Processing Area. Several metal trailers (possibly containing remediation equipment) were noted (Spill #1802063 was reported in May 2018 for contamination identified for this area that was reportedly associated with former bus fueling and washing operations, as discussed in Section 5.2.2).

Apparent monitoring wells were observed within the sidewalk along Twelfth Avenue near the northwestern portion of the Property, and within asphalt pavement on the southeastern portion of

the Property in the vicinity of Building 4. The wells may have been associated with prior remedial investigations.

2.2 Topography and Hydrogeology

Based on U.S. Geological Survey mapping (Weehawken Quadrangle), both portions of the Property (the train yard and “terra firma”) are at an elevation of approximately 10 feet above the North American Vertical Datum of 1988 (NAVD 1988), an approximation of mean sea level. Due to variations in street grade, the Property is approximately 10 feet below street level on its eastern side, and at street level on its western side. Prior reports indicated that in the 1980s, the Property was redeveloped for use by the LIRR. The redevelopment included removal of historical train tracks, installation of a 12- to 18-inch concrete slab over the train yard, and installation of new tracks and structures over this slab. The Property was formerly part of the Hudson River, which was filled to expand the Manhattan shoreline beginning approximately in the late 1800s. Based on a 2004 Phase II Environmental Site Investigation (ESI) (see Section 7.0), the Property pavement is underlain by an approximately 10- to 35-foot layer of fill materials (including silty sand, gravel, bricks, cinders, concrete, roots, and rock fragments). An area in the center of the Property contains fill up to 45 feet deep, which is underlain by native sand, silt, clay, organic soil (riverine deposits), and glacial till. Depth to bedrock beneath the Property ranges from approximately 25 to 150 feet below ground surface (bgs), with bedrock sloping down toward the west.

The 2004 Phase II ESI first encountered groundwater approximately 5 to 7 feet below grade. Groundwater is anticipated to flow in a westerly or northwesterly direction toward the Hudson River (approximately 260 feet away), but is likely tidally influenced. The actual groundwater flow direction may also be affected by bedrock topography, subsurface openings or obstructions such as basements, and other factors beyond the scope of this assessment. Groundwater in Manhattan is not used as a source of potable water (the municipal water supply uses upstate reservoirs).

Additional subsurface investigations conducted in 2018 indicated a limited petroleum spill in the southwestern portion of the Property, in the area of a former bus filling station and washing facility (discussed further in Section 5.2.2)

2.3 Storage Tanks

2.3.1 Underground Storage Tanks (USTs)/Aboveground Storage Tanks (ASTs)

Previous studies identified fuel oil and diesel storage at the Property (the LIRR may maintain tank records that are not publicly available) and information provided in the NY Spills database indicated that certain petroleum storage tanks at the Property appeared to have been listed under the DSNY M District 6 Garage NYSDEC PBS listing, as noted in the table below (DSNY appears to have historically occupied portions of the Property on Lot 1).

Property NYSDEC PBS Listing

Location	Capacity (gallons)	Product Stored	Status	Distance/Direction from Property
DSNY M District 6 Garage 319 Eleventh Avenue PBS facility #: 2-601983	4 x 2,500 UST	Diesel	Closed-Removed	Property
	1,000 UST	Motor Oil		
	1,000 UST	Hydraulic Oil		
	275 AST	Motor Oil		
	275 AST	Hydraulic Oil		
	275 AST	Waste Oil		

Potential undocumented bulk storage tanks elsewhere in the WRY facility may have been removed or may remain beneath the Property.

Off-site USTs and ASTs are discussed in Section 5.2.2.

2.4 Polychlorinated Biphenyls (PCBs) and Mercury

Until 1979, polychlorinated biphenyls (PCBs), which provided beneficial insulating properties, were used in a variety of products, in particular electrical equipment such as transformers, capacitors, fluorescent light fixtures, and voltage regulators, but also in hydraulic fluids and some other products such as caulking.

Based on the age of the WRY buildings (constructed in the mid 1980's), fluorescent lighting fixtures, window caulking, and electrical equipment are not as likely to contain PCBs, however this could only be confirmed by testing. PCBs may be present within railroad track components including ballasts.

2.5 Lead-Based Paint

After 1977, the use of lead-based paint inside commercial structures was restricted and its use elsewhere became less common, but lead-based paint may still sometimes be used outdoors. Lead-based paint can present a hazard, particularly to children, especially when it is in poor condition.

Based on the age of the WRY buildings (constructed in the mid 1980's), building surfaces are not as likely to contain lead-based paint, however this could only be confirmed through testing. Activities (such as renovation or demolition) with the potential to disturb lead-based paint are subject to a variety of requirements, including US Occupational Safety and Health Administration regulation 29 CFR 1926.62 (Lead Exposure in Construction).

2.6 Utilities

The Property and surrounding area was supplied with natural gas and electricity by Consolidated Edison, and connected to the municipal water and sanitary sewer systems.

2.7 Waste Management and Chemical Handling

Portions of the Property were used for historical bus fueling and vehicle washing areas, which may have generated wastes (no pertinent information was provided in the regulatory database information and waste generation associated with LIRR activities may not be publicly available). Cleaning materials associated with train car cleaning operations were stored in several designated areas according to prior reports.

2.8 Radon

Radon is a colorless, odorless gas most commonly produced by the natural radioactive decay of certain rocks. According to a New York State Department of Health database, the average level of radon found in Manhattan is 2.07 picocuries/liter in basements and 2.68 picocuries per liter on ground floors, both below the USEPA recommended action level of 4.0 picocuries/liter.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Asbestos refers to a group of natural minerals that provide good fire resistance and insulation. Asbestos is also commonly found in vinyl flooring, plaster, sheetrock, joint compound, ceiling tiles, roofing materials, gaskets, mastics, caulks and other products. Materials containing more than one percent asbestos are considered asbestos-containing materials (ACM). ACM are classified as either friable (i.e., more readily release fibers, such as most spray-applied fireproofing) or non-friable (such as floor tiles).

Although less likely based on the age of the buildings (circa 1983 to 1985), the on-site buildings, rail components, and/or historic fill materials beneath the Property may contain ACM.

Regulatory requirements for ACM (or suspect ACM until proven not to be ACM) include maintenance requirements and, prior to any renovation or demolition, inspection/sampling by a NYC-certified asbestos investigator to determine if the project will disturb ACM. Any ACM in an area to be disturbed (and any other ACM subsequently identified) must be removed prior to the renovation or demolition.

4.0 ADJACENT LAND USE

The Property is bound by Eleventh Avenue (and the Eleventh Avenue Viaduct) to the east, Twelfth Avenue (aka the West Side Highway) to the west, the 33rd Street to the north, and 30th Street to the south. Current properties adjacent to the Western Rail Yard include the Jacob K. Javits Convention Center truck parking lot to the north; a parking lot, an apparent mixed use structure (currently under construction) and a former Greyhound Bus parking lot to the south; the Eastern Rail Yard and mixed use commercial and residential buildings to the east; and the West Side Highway to the west. The elevated Highline pedestrian walkway is located above the western and southern portions of the Property.

5.0 PROPERTY HISTORY AND RECORDS REVIEW

5.1 Prior Ownership and Usage

5.1.1 Historical Land Use maps

Historical maps were reviewed for indications of uses (or other evidence) suggesting hazardous materials generation, usage or disposal on or near the Property. Specifically, Sanborn Fire Insurance Maps from 1890, 1899, 1911, 1930, 1950, 1976, 1982-1992, and 1995-2005 were reviewed.

1890

The Property contained railroad tracks with several freight sheds in the central portion associated with the N.Y. Central and Hudson River Railroad Co. and a portion of a lumber yard was depicted along its southern edge.

The Property was surrounded by additional railroad tracks to the north and east, with some commercial structures including stables and feed warehouses, and beer bottling and storage warehouses along West 34th Street to the north, and a locomotive house and a coal platform noted in the rail yard area to the east. Industrial uses, including a kindling factory, building materials sheds and lumber yards were noted to the south of the Property, beyond West 30th Street. Piers containing railroad freight terminals were noted to the west of the Property beyond Twelfth Avenue (current Route 9D/West Side Highway) along the Hudson River.

1899

The Property remained similar to the 1890 map, as a portion of the N.Y. Central and Hudson River Railroad Co. and associated freight sheds.

The surrounding area remained similar in nature to the 1890 map, with additional unlabeled structures and a soap factory depicted on the south-adjacent block in areas of former lumber and building materials storage yards.

1911

The central portion of the Property was labeled as N.Y. Central and Hudson River Railroad Co. and N.Y. Ontario and Western Railroad Co. 33rd Street Freight Station. A stable was shown on the southwestern portion of the Property

Additional industrial uses were depicted to the north along West 34th Street, including varnish works, vinegar work, wire warehouses and distilling warehouses.

1930

The Property remained similar in nature to the 1911 map, occupied by the rail yard and freight station. Additional railroad tracks were shown on the southern portion of the Property in place of the former lumber yard noted on earlier maps.

Some of the former industrial uses to the north depicted in 1911 (the varnish works and wire warehouse) were no longer labeled as such, and several were labeled as newspaper warehouses. The soap factory on the south-adjacent block beyond West 30th Street had expanded, including the addition of a business garage with buried gasoline tank along West 30th Street.

1950

The Property remained in use as a rail yard. Former freight sheds depicted on earlier maps had been razed and were replaced with railroad tracks.

Several warehouse structures were noted in the remaining rail yard areas to the east of the Property. Additional automotive and industrial uses were noted on the surrounding blocks including a beer distribution warehouse with an attached garage with gasoline tanks on the north-adjacent block along West 33rd Street and several filling stations, private garages, machine shops, motor freight station, and a bus repair facility on the south-adjacent block.

1976

A freight terminal building with an attached office was depicted on the northern portion of the Property, and a department store warehouse was located on the southern portion along West 30th Street. An elevated steel viaduct (current high line walkway) was shown above the western and southern portions of the Property.

A motor freight station was shown on the north-adjacent block, replacing beer distribution warehouse noted in 1951 (gasoline tanks remained depicted in the structure). The south-adjacent block remained largely automotive in nature with a DSNY garage replacing a former bus garage noted in 1951.

1982-1992

The former warehouse and freight terminal structures noted in 1976 on the Property had been razed by 1992, and the Property was largely covered with railroad tracks labeled “L.I.R.R. Storage Yard”, with two ancillary unspecified structures located on the western portion of the Property, and a third structure on the southeastern portion.

The western portion of the south-adjacent block was vacant by 1982, and the eastern portion retained its automotive and industrial uses, including the DSNY garage, motor freight stations a truck rental garage with gasoline tanks and a filling station. Former structures had been razed on the north-adjacent block by 1982, including the former motor freight station noted in 1976. A trailer parking area for the Jacob Javits Convention Center and unspecified structure were noted on this block.

1995-2005

A small warehouse building was shown on the southern portion of the Property. A NY Times truck parking garage and several unspecified warehouses were noted on the south-adjacent block. No further significant changes from the 1992 map were noted on the Property or in the surrounding area.

Sanborn maps indicated that the Property had a long history of railroad and freight uses, since at least circa 1890. Additional uses on the site included a lumber yard (subsequently a department store warehouse), freight storage sheds and a freight terminal. The Property was shown as a rail yard with three ancillary structures (noted as constructed between 1983 and 1985) for the LIRR by circa 1992 through 2005.

The surrounding blocks were largely industrial and automotive in use, including various warehouses, a varnish works, a beer distribution facility with fueling operations (subsequently a motor freight station) on the north-adjacent block, and various uses including a soap factory, motor freight stations, various manufacturing uses, garages with gasoline tanks, a bus garage (subsequently a DSNY garage) and filling stations on the south-adjacent block.

Copies of the historical Sanborn maps are included in Appendix B.

5.1.2 Historical Aerial Photographs

Historical aerial photographs dated between 1924 and 2017 were reviewed for indications of uses (or other evidence) suggesting hazardous materials generation, usage or disposal on or near the Property.

A review of aerial photographs indicated the Property was occupied by a rail yard with freight car storage areas since at least 1924, with the elevated viaduct (current High Line walkway) noted on the 1940 aerial photograph. Apparent warehouse structures were depicted on the northern and southern portions of the Property in the 1975 and 1980 aerial photographs that appeared to have been razed by the mid 1990’s and the 2006 through 2017 photographs depicted the Property as primarily a rail car storage yard with

some apparent ancillary structures, and parking and storage areas along the southern portion of the yard.

Copies of the historical aerial photographs are provided as Appendix C.

5.1.3 Property Tax Files and Zoning Records

Based on online New York City zoning maps, the Property was assigned commercial (C6-4) zoning, and was part of the Hudson Yards Special District. Both Lot 1 and Lot 5 were listed with two buildings, with no construction date specified, and were classified as “vacant lots – zoned Commercial or Manhattan Residential” (V1). Online New York City tax records indicated that the entire Property was historically assigned Lot 3, which was subdivided into Lots 1 and 5 in July 2014, based on a deed recorded in July 2012.

5.1.4 Recorded Land Title Records

No title records were provided. Title records for the Property were reviewed on the NYC ACRIS website (discussed in Section 5.2.3).

5.1.5 Local Street Directories

Since historical Sanborn maps and aerial photographs were available for the Property (and surrounding area) and these maps included information relating to land use, city directories would, most likely, not provide additional useful information relevant to the potential for recognized environmental conditions or other environmental concerns. As such, city directories were not reviewed.

5.2 Regulatory Review

Regulatory database information, as shown in Appendix D, was obtained from EDR. The Introduction of Appendix D includes summaries of the databases searched, their radii around the Property and limitations of the data. The databases searched and associated radii were consistent with ASTM E1527-13.

5.2.1 Federal

The federal databases searched included the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Superfund Enterprise Management System Archive (SEMS-ARCHIVE); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); and Federal Institutional Control/Engineering Control Registries. The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.

National Priority List (NPL)

The NPL is the USEPA’s compilation of some sites that probably remedial action under the Superfund Program. NPL sites can pose a significant risk of stigmatizing surrounding properties and thus impacting property values.

The Property was not identified in the NPL database. One NPL site, Hudson River PCBs, was identified within a one-mile radius of the Property. The listing was associated with PCB-contaminated sediment in the Hudson River, approximately 260 feet away at its closest approach. Based on the nature of the listing, distance, and anticipated groundwater flow direction, this listing is not anticipated to have affected subsurface conditions beneath the Property.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of sites, which the USEPA has investigated, or plans to investigate, pursuant to the Superfund Act of 1980 (CERCLA). As such, some of these sites may ultimately present concerns and others may not (but could still pose a perceived threat, thus affecting property values).

The Property was not identified as a CERCLIS facility. One CERCLIS site was identified within a ½-mile radius of the Property. The Hudson River PCBs listing was associated with PCB-contaminated sediment in the Hudson River, approximately 260 feet away at its closest approach. Based on the nature of the listing, distance, and anticipated groundwater flow direction, this listing is not anticipated to have affected subsurface conditions beneath the Property.

SEMS-ARCHIVE (Superfund Enterprise Management System Archive)

This database tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the USEPA in 2015. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of USEPA's knowledge, assessment at a site has been completed and that USEPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.

The Property was not listed in the SEMS-Archive database. Two SEMS-Archive sites were identified within a ½-mile radius of the Property. Nassau Smelting & Refining Co., located at 603 West 29th Street, approximately 240 feet to the south, was listed as a historical lead smelter classified as a facility for batteries/scrap metals/secondary smelting/precious metals recovery (recycling). The listing indicated that based on a site assessment in 2015, this facility was assigned an "Archived" status. Based on its proximity, this facility may have affected subsurface conditions beneath the Property.

Based on distance (over 1,880 feet away) and the anticipated groundwater flow direction, the second SEMS-Archive listing is not anticipated to have affected the Property.

Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on certain reported releases of petroleum and other potentially hazardous substances.

Two ERNS listings were identified as potentially located on the Property in the database, as follows:

- In July 2018, a caller reported a derailment of two empty passenger train cars at the West Side Yard at 300 Twelfth Avenue (an alternative address for the Property). The incident was classified as "railroad non-release."
- In September 2019, a caller reported damage to a train car coupling at the West Side Yard at 300 Twelfth Avenue. The incident was classified as "railroad non-release."

Based on the listing details, the ERNS listings are not anticipated to have affected subsurface conditions beneath the Property.

Toxic Chemical Release Inventory System (TRIS)

The TRIS contains information reported by a variety of industries on their annual estimated releases of certain chemicals.

The Property was not identified in the TRIS database. No TRIS sites were identified within a 1/8-mile radius of the Property.

Federal Institutional Control/Engineering Control Registries

These registries are listings of sites with engineering and institutional controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site.

The Property was not listed in the Federal Institutional Control/Engineering Control (IC/EC) Registries database; however, remedial activities at the Property are subject to OER approval pursuant to the Restrictive Declaration (R-230) placed at the site in 2014. One Federal IC listing and one Federal EC listing were identified within a 1/2-mile radius of the Property. Both listings were for the Hudson River PCBs site, associated with PCB-contaminated sediment in the Hudson River, approximately 260 feet away at its closest approach. Based on the nature of the listings, distance, and anticipated groundwater flow direction, these listings are not anticipated to have affected subsurface conditions beneath the Property.

5.2.2 State

State databases included the listings of petroleum/hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Major Oil Storage Facilities (MOSF); Brownfield Cleanup Program (BCP) Sites; and Registered Dry Cleaners and Historic Cleaners.

New York SPILLS Database

This database includes releases reported to the NYSDEC, including tank test failures (for USTs only) and tank failures.

The Property was listed on the NY Spills database. Pertinent spills that occurred on-site are listed as follows:

Spill #1802063 was reported in May 2018 at a listed address of 645 West 30th Street when petroleum contamination was identified during a subsurface investigation in a former bus fueling and washing area located on the southwestern portion of Lot 1. The spill file indicated that the area was formerly operated as a filling station and washing facility for a prior Greyhound bus lot located on the south-adjacent block. The file notes indicated that the site was listed under PBS facility #2-601983 associated with a DSNY Garage (portions of the lot appeared to have been historically used by DSNY for vehicle storage), with several closed-removed ASTs and USTs ranging in size from 275 to 2,500 gallons of hydraulic oil, motor oil, biodiesel and diesel located on the southwestern portion of the lot in the former bus fueling area and on the southeastern portion of the lot

in the vicinity of Building 4; the tanks were reportedly removed between 2007 and 2014. According to the spill file, no evidence of widespread contamination was identified during subsequent soil boring investigations completed in the former bus fueling area in 2018, and it was noted that the proposed redevelopment would require soil removal to the water table with associated waste characterization sampling for off-site disposal purposes. The file notes also indicated that remedial activities would be managed under OER oversight during redevelopment. The spill was subsequently closed in January 2019.

Spill #0407411 was listed for the Property in October 2004 with an address of Twelfth Avenue and West 33rd Street (Lot 5) for significant on- and off-site petroleum contamination discovered during subsurface investigations, noted to be mainly on the northwestern portion of the Property and to the north across West 33rd Street according to the file notes. Remedial investigations conducted in 2009 indicated few exceedances of dissolved VOCs in groundwater and the file notes indicated contamination consistent with manufactured gas plant (MGP) waste was limited to an area on the northwestern portion of the site in deeper soil (below the groundwater interface) in this area. Due to the presence of footings for the elevated Highline walkway and numerous utilities in the area, it was noted that excavation within this area did not appear to be possible. General site conditions were noted to consist of roughly 20 to 30 feet of urban fill beneath the site underlain by clays and silt. Groundwater was noted to be approximately 5 to 7 feet below grade with a general northwesterly flow. It was noted that additional remedial investigation activities were proposed to delineate potential residual contamination and would be addressed under the NYSDEC SHWS program (ID #231083); the spill was closed in March 2013.

Spill #0407107, was open in September 2004 when field evidence of contamination was noted during a soil boring investigation at a boring location near Track 14 within the rail yard, the spill was closed in April 2006 after NYSDEC noted that no evidence of widespread contamination was noted in samples collected from areas surrounding the boring location.

Spill #1007207 was reported in October 2010 due to a release of lubricant oil from a locomotive (“equipment failure”). It was noted that approximately 15 to 20 gallons of the lubricant oil was released to surrounding storm drains. Corrective actions were initiated including the cleanout of several storm drains and pumping oil/water mixture from the drain network by a licensed contractor. Upon review of the closure documentation the spill was closed by NYSDEC within the same month of issuance.

Additional DeMinimis spills, including minor releases of hydraulic fluids within transformers in the train yard and other closed status spills of incidental releases of small quantities of petroleum oils due to human error etc. were reported within the West Side Train Yard; however, given their regulatory status and nature of the releases would not be anticipated to have significantly affected the Property.

Based on listing details and/or location, other reported spills are unlikely to have affected subsurface conditions at the Property. Details from all reported spills are included in Appendix D.

Resource Conservation and Recovery Act (RCRA) Notifiers Listings

This database lists sites that have filed notification forms regarding hazardous waste activity, including: treatment, storage and disposal facilities (TSDs); small-quantity

(SQG) and large-quantity generators (LQG); and transporters regulated under RCRA. The discussion below includes any CORRACTS listings of facilities that are subject to corrective action under RCRA.

No CORRACTS sites were listed within a one-mile radius of the Property. No TSD facilities were listed within a one-half mile radius of the Property. The Property was not listed as a hazardous waste generator (wastes associated with the LIRR operations may not be publicly available).

The following RCRA listing appeared to be listed for the eastern portion of the Hudson River Yards, on the east-adjacent block:

Hudson Yards Terra Firma (ID #NYR000214411) with a listed address of 553 West 30th Street was listed as having generated lead-containing wastes in 2014 and 2015 (likely associated with soil disposal activities during redevelopment). No further pertinent information was provided in the listing.

Based on listing details and/or anticipated groundwater flow direction, this listing and the remaining listed RCRA generators/transporters are not likely to have significantly affected the Property.

Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

The Property was not identified in the CBS database. No CBS facilities were listed within a 1/8-mile radius of the Property.

Solid Waste Facilities (SWF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other sites which manage solid waste.

The Property was not listed in the SWF database. Three Solid Waste Facilities were identified within a 1/2-mile radius of the Property. Based on listing details, distance (over 230 feet away), and the anticipated groundwater flow direction, these facilities are not anticipated to have affected subsurface conditions beneath the Property.

Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than 400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

Previous studies indicated fuel oil and diesel storage at the Property (the LIRR may maintain tank records that are not publicly available) and information provided in the NY Spills database indicated certain petroleum storage tanks at the Property appeared to have been listed under the DSNY M District 6 Garage PBS listing (noted below). Twenty-six additional PBS listings were identified within a 1/8-mile radius of the Property. Details of facilities with some potential to affect the Property, based on listing details and/or location, are noted in Table 1.

Table 2
Property and Area Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Status	Distance/Direction from Property
DSNY M District 6 Garage 319 Eleventh Avenue	4 x 2,500 UST 1,000 UST 1,000 UST 275 AST 275 AST 275 AST	Diesel Motor Oil Hydraulic Oil Motor Oil Hydraulic Oil Waste Oil	Closed-Removed	Property
Empire City Subway Company Ltd. 260 Twelfth Avenue	2 x 2,000 AST 2 x 6,000 AST 480 AST 280 AST	Unlisted	Closed-Removed	40 feet west-southwest
Mike Sie Palm 604 West 30 th Street	275 AST	Waste Oil	In Service	95 feet south
Ryder Truck Rental 624 West 30 th Street	11x 2,000 UST 9 x 2,000 UST	Gasoline Diesel	Closed pre-1991*	75 feet south-southwest
Mobil Oil Corp. SS #510 309 Eleventh Avenue	5 x 4,000 UST 1,000 UST 2,000 UST 550 UST 6,000 UST 8,000 UST Unlisted UST 4,000 UST 1,000 UST 16 x 550 UST	Gasoline No. 2 Fuel Oil Gasoline Unlisted Gasoline Gasoline Gasoline Diesel Waste Oil Gasoline	Closed-Removed Closed-Removed Closed-Removed Conv. to Non-Regulated Use Closed-Removed Closed-Removed Closed-Removed Closed-Removed Closed-Removed Closed-Removed	110 feet south
Federal Express Corp. 538 West 34 th Street	5,000 AST 275 AST 500 AST 20,000 UST 4x 10,000 UST 2x 10,000 UST 2x 10,000 UST 175 AST 275 AST	No. 2 Fuel Oil Waste Oil Waste Oil Diesel Gasoline Diesel No. 6 Fuel Oil Lube Oil Waste Oil	Closed-In-Place Conv. to Non-Regulated Use Closed-In-Place Closed-In-Place Closed-In-Place Closed-In-Place Closed-In-Place In Service In Service	420 feet east
550 West 30 th Street	3,000 UST	No. 2 Fuel Oil	Closed-In-Place	370 feet south-southeast
MTA No. 7 Subline Extension 524 West 34 th Street (alternative address for 538 West 34 th Street)	550 UST 12,000 UST 550 UST 1,000 UST	Gasoline No. 2 Fuel Oil No. 2 Fuel Oil No. 2 Fuel Oil	Closed-Removed	420 feet east

Notes: UST - underground storage tank; AST - aboveground storage tank; *Type of closure not specified

Known spills, and potential undocumented releases, from the above facilities may have affected subsurface conditions beneath the Property. Based on listing details, distance, and/or the anticipated groundwater flow direction, other PBS listings are not anticipated

to have significantly affected the Property. Details of all PBS facilities are included in Appendix D.

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

The Property was listed as New York SHWS Site No. 231083, identified as LIRR West Side Yard, located at the intersection of Twelfth Avenue and West 33rd Street. The listing indicated that the Property was used for railroad operations for over 100 years, but no bulk petroleum storage was located on its western side, and on-site maintenance activities did not include the use of petroleum products. According to the listing, a 2004 subsurface investigation (see Section 7.0) identified field evidence of coal tar, and elevated concentrations of semi-volatile organic compounds (SVOCs) in soil and groundwater, in the northwestern corner of the Property. As a result, Spill No. 0407411 was reported to NYSDEC. The listing indicated that the affected area was underlain by an approximately 20-foot layer of fill, and the contamination appeared to have been co-deposited with the fill during Property landfilling circa 1900. The coal tar was observed in four borings at depths of 15 to 40 feet bgs, within the water table. Groundwater was reportedly encountered approximately 5 to 7 feet bgs, and flowing in a northwesterly direction. Online NYSDEC records identified the Property as a “P” site (i.e., a potential SHWS site, being evaluated for addition to the registry)

Additionally, two New York SHWS listings and nine New Jersey SHWS listings were reported within a one-mile radius of the Property. Based on their distance (over ½ mile away), these listings are unlikely to have significantly affected environmental conditions at the Property.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks certain sites that were not listed on SHWS, but may still require investigation and/or cleanup.

The Property was not identified in the SHSWDS database. No SHSWDS facilities were identified within a ½-mile radius of the Property.

Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more.

The Property was not listed in the MOSF database. No Major Oil Storage Facilities were reported within a ½-mile radius of the Property.

Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

The Property was not listed in the ERP database. No ERP sites were identified within a ½-mile radius of the Property.

Voluntary Cleanup Program/Brownfield Cleanup Program

The Voluntary Cleanup Program is a NYSDEC program for investigation and remediation of (generally) privately-owned sites. Some sites in this program have known

contamination, whereas others have not had sufficient investigation to determine whether contamination is present. The Brownfield Cleanup Program is the successor to the Voluntary Cleanup Program. Again, some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

The Property was not identified in the VCP/BCP database. Fourteen VCP and BCP sites were identified within a ½-mile radius of the Property. Based on listing details, these facilities are not anticipated to have affected the Property subsurface.

Registered Drycleaners and Historic Cleaners

The Registered Drycleaners database lists dry cleaners registered with NYSDEC. The Historic Cleaners database is an inventory of facilities identified as potential dry cleaners based on historical City Directory listings.

The Property was not identified in the Registered Drycleaner or Historic Cleaners databases. No Registered Drycleaners were identified within a ¼-mile radius of the Property. No Historic Cleaners were listed within a ½-mile radius of the Property.

5.2.3 Local Agency File Review

Records available online from the New York City Buildings and Finance Departments were viewed for the Property. Since the records typically address a multitude of issues, the review focused on items likely to relate to the potential presence of hazardous materials, e.g., petroleum tank installation applications and permits, and records indicating prior uses. Copies of pertinent information are included in Appendix E.

Buildings Department

Computerized Buildings Department records for the Property identified the following:

Block 676 Lot 1 (Tunnel Encasement)

- A permit issued in 2014 for the removal of two diesel and two motor oil USTs.
- A permit issued in 1994 for the installation of fuel oil storage tank and fire suppression system (no further pertinent details were included).

Block 676 Lot 5 (Platform)

No pertinent environmental information was provided in the electronic DOB records

Both Property lots were noted to have Environmental Restrictions for Hazardous Materials pursuant to a Restrictive Declaration (RD) issued for the site during prior rezoning actions in 2009 and 2014 (remedial actions at the Property are subject to approval by OER). As detailed further below, compliance with OER requirements must be documented prior to such new structures obtaining a Certificate of Occupancy (C of O) from the DOB.

Land Title Records and Tax Records

Electronic property transaction records for the Property were reviewed in the New York City Department of Finance Office of the City Register Automated City Register Information System (ACRIS). No deed records were identified for Property Lots 1 and 5. Deed information obtained from the ACRIS files for historical Property Lot 3 is summarized as follows:

Year	Grantor/Grantee Listed on Deed
1978	Grantor is Penn Central Transportation Co.; Grantee is Owasco River Railways Inc.
1978	Grantor is Penn Central Transportation Co.; Grantee is Consolidated Rail Corp.
1978	Grantor is Despatch Shops Inc.; Grantee is Consolidated Rail Corp.
1980	Grantor is Consolidated Rail Corp.; Grantee is Triborough Bridge & Tunnel Authority
1981	Grantor is Consolidated Rail Corp.; Grantee is Triborough Bridge & Tunnel Authority
2000	Grantor is Consolidated Rail Corp.; Grantee is New York Central Lines LLC.
2004	Grantor is Consolidated Rail Corp.; Grantee is New York Central Lines LLC. (correction deed)
2010	Grantor is the City of New York; Grantee is Triborough Bridge & Tunnel Authority
2010	Grantor is Triborough Bridge & Tunnel Authority; Grantee is Metropolitan Transportation Authority (MTA)
2012	Grantor is CSX Transportation, Inc.; Grantee is the City of New York

The historical ownership of the Property by rail/transportation companies is considered a REC. The ACRIS records also identified the following:

- A 2010 Restrictive Declaration (RD) associated with zoning restrictions.
- A 2014 RD and “Consent to Execution of Restrictive Declaration”. The Consent document noted that the Property was owned by the MTA, and was leased to WRY Tenant LLC. The RD included various commitments associated with the 2009 rezoning, including the following environmental commitments:
 - For any existing structures to be demolished, a pre-demolition survey for lead-based paint, ACM, and PCBs.
 - Preparation of a Construction Health and Safety Plan (CHASP) prior to the start of construction. The CHASP was required to list measures for reducing the potential for exposure to both subsurface contaminants, and hazardous building materials (i.e., ACM, PCBs and/or lead-based paint). The RD noted that the CHASP would be submitted to the New York City Department of Environmental Protection (DEP) for review and approval.
 - If required by DEP, soil vapor mitigation measures for any new buildings constructed in the terra firma portion of the Property.

Of note, although the RD specified that DEP would be the agency overseeing environmental remediation, the NYC Office of Environmental Remediation (OER) is the agency currently responsible for oversight of sites with RDs.

Department of City Planning

Online NYC Department of City Planning (DCP) records identified an RD associated with noise, hazardous materials, and air quality concerns for the Property. The RD, R-230, was assigned in 2014 in connection with the 2009 Western Rail Yard Rezoning [City Environmental Quality Review (CEQR) No. 09DCP007M]. Noise and air quality RDs require that new structures constructed on the Property incorporate noise reduction and air quality improvement measures to the satisfaction of the New York City Office of Environmental Remediation (OER). Recent email correspondence between AKRF and OER indicated that remedial activities at the Property will be managed by OER.

5.2.4 Additional Environmental Record Sources

To enhance the search, ASTM requires that additional local records be reviewed (i.e., beyond those included as part of the standard database search or checked online) when,

in judgment of the environmental professional, such records for the Property or any adjoining property would be reasonably ascertainable; and useful, accurate and complete in light of the objective of the records review. These records may include:

- Local Brownfields Lists
- Local Lists of Landfill/solid waste disposal sites
- Local Lists of Hazardous Waste/Contaminated Sites
- Local Lists of Registered Tanks
- Local Land Records (for activity use limitations)
- Records of emergency release reports
- Records of contaminated public wells

Sources for these records include:

- Department of Health/Environmental Division
- Fire Department
- Building Permit/Inspection Department
- Local/Regional Pollution Control Agency
- Local/Regional Water Quality Agency
- Local Electric Utility (for PCB records)

Online U.S. Department of Environmental Protection (USEPA) MyPropertyInfo files were searched for records pertaining to the Property. FOIL requests were submitted to the NYSDEC, New York State Department of Health (NYSDOH), New York City Department of Environmental Protection (NYCDEP), and the NYC Department of Health and Mental Hygiene (DOHMH). As of the writing of this report NYSDEC issued several FOIL responses including spill file reports for the associated closed spills at the Property (the information is consistent with records provided in the regulatory database review discussed in Section 5.2.2). If issues of potential concern are noted upon receipt of additional information, an addendum to this report will be created to discuss relevant findings.

In AKRF's judgment, no other additional local records meeting the ASTM criteria are pertinent for the Property.

6.0 USER-PROVIDED INFORMATION

In preparing this Phase I ESA, AKRF requested that the Client provide any pertinent information regarding the Property, specifically:

- Whether any *environmental liens* or *activity and land use limitations (AULs)* are in place or filed or recorded against the Property?
- Whether they had any specialized knowledge or experience related to the Property or nearby properties (e.g., specialized knowledge of any chemicals used on-site)?
- Whether the (anticipated) purchase price reflects that the Property is or could be contaminated?
- Whether they were aware of commonly known or reasonably ascertainable information about environmental conditions of the Property?
- Whether they were aware of any obvious indicators of contamination at the Property?
- Whether they were aware of any pending, threatened, ongoing or past litigation/enforcement action/consent order/notice of violation related to hazardous substances or petroleum products?

The Phase I ESA was conducted as part of due diligence prior to proposed improvements pursuant to CEQR and SEQRA including the tunnel encasement on Lot 1 and platform on Lot 5. To the extent that pertinent additional information was provided, it has been summarized elsewhere in this report.

7.0 PREVIOUS STUDIES

Phase I ESA – Block 676, Lot 3; Block 704, Lot 1; and Block 702, Lots 1 and 50, Parsons Brinckerhoff and Louis Berger and Associates, P.C., July 2004

A Phase I ESA [Parsons Brinckerhoff (PB) and Louis Berger and Associates, P.C. (LBA), July 2004] was completed for the Property and two off-site parcels as part of the 2004 Hudson Yards rezoning. The following RECs were identified by the 2004 Phase I ESA:

- Historical uses of the Property as a lumber yard, freight yard, and train storage yard;
- Potential use of pesticides, herbicides, and creosote at on-site train tracks;
- Historical off-site uses, including a rail yard with coal storage, iron works, and a locomotive house on the east-adjacent block (the Eastern Rail Yard), a metals purchasing company, a lumber yard, a coal yard, garages, filling stations, a truck rental company, and a motor freight station; and
- Two off-site properties within 0.125 miles of the Property were identified in LTANKS and NY Spills databases with open/active petroleum spill listings.

Phase II Environmental Site Investigation – Caemmerer Yard West, Parsons Brinckerhoff, 2004

Based on the findings of the 2004 Phase I ESA, a Phase II Environmental Site Investigation (ESI) (PB, 2004) consisting of subsurface soil and groundwater sampling was conducted throughout the Property. The scope of the ESI included:

- Installation of 45 soil borings to a maximum depth of 45 feet bgs, with the collection and laboratory analysis of 175 soil samples;
- Screening of soil samples for volatile organic compounds (VOCs) and methane; and
- Collection and laboratory analysis of 11 groundwater samples.

Soil sampling results were compared to the Remedial Soil Cleanup Objectives (RSCOs) contained in NYSDEC TAGM #4046 (a set of guidance values used at the time of the ESI). The soil sampling results revealed no exceedances of the RSCOs for pesticides, herbicides, or PCBs. Nine soil samples containing levels of benzene ranging from 96 to 2,200 parts per billion (ppb) were detected above the RSCO of 60 ppb. Three of these nine samples also exhibited levels of ethylbenzene, ranging from 15,000 to 120,000 ppb, above the RSCO of 5,500 ppb. Sampling revealed the presence of several semi-volatile organic compounds (SVOCs) at concentrations exceeding their respective RSCOs. The compounds detected were part of the group of SVOCs known as polycyclic aromatic hydrocarbons (PAHs), formed during incomplete burning of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and charbroiled meat. PAHs are commonly present in urban fill materials. One of the detected PAHs, benzo(a)pyrene, a known carcinogen, ranged from not being detected to 30,000 ppb in the samples, many of which exceeded the RSCO of 61 ppb. Metals detected at levels above their respective RSCOs included arsenic, barium, beryllium, cadmium, chromium, copper, lead, magnesium, mercury, nickel, selenium, and zinc.

None of the soil samples analyzed exhibited toxicity levels above RCRA hazardous waste characteristics. No above-background levels of methane were detected during field screening activities.

Groundwater sampling results were compared to NYSDEC's "Class GA" Water Quality Standards or Guidance Values (drinking water standards). No pesticides, herbicides or PCBs were detected in the groundwater samples. VOCs (benzene, ethylbenzene, total xylenes, and toluene) and SVOCs (naphthalene, 2-methylphenol, 4-methylphenol, and several PAHs) were detected in two of the samples analyzed at concentration levels above "Class GA" standards or guidance values, which may reflect the presence of isolated petroleum contamination (VOCs) and creosote (SVOCs).

Metals exceeding the groundwater criteria included arsenic, barium, beryllium, chromium, copper, magnesium, manganese, lead, and mercury. However, the contaminant levels encountered were consistent with those typically found in urban groundwater—in particular, areas with historic fill. Additionally, during the sampling event, field screening identified high turbidity levels. The presence of elevated metals is likely attributable to metals in suspended particles within the groundwater samples rather than attributable to specific releases or spills.

In addition to the "Class GA" comparisons, the groundwater sampling results were compared to DEP's Effluent Discharge Limitations to sewers. Analytical results indicate that if dewatering for construction is necessary, groundwater would likely require treatment prior to its discharge to meet DEP groundwater discharge criteria.

Generally, the soil sampling results were consistent with the presence of historic urban fill, which was observed beneath the Property. However, in two instances (NYSDEC Spill No. 0407107 and 0407411), potential petroleum impacts were noted during field screening, and NYSDEC was notified. Laboratory analysis revealed no elevated levels of VOCs or SVOCs in the former case, and Spill No. 0407107 was closed on April 6, 2006.

Spill No. 0407411 associated with a boring in the sidewalk southeast of the intersection of Twelfth Avenue and West 33rd Street identified contamination consistent with petroleum as confirmed by laboratory analysis. This spill was subject to a December 2006 Consent Order between LIRR and NYCDEC requiring implementation of a Site Investigation Work Plan and subsequent implementation of an appropriate Remedial Action Plan (RAP), as necessary. Spill No. 0407411 was ultimately closed by NYSDEC in March 2013 after additional soil sampling and groundwater monitoring was conducted; however, based on evidence of coal tar observed in the spill area, the Property was enrolled in the NY SHWS database as Site No. 231083. A review of sampling results for the soil and groundwater in the segment of Route 9A along Twelfth Avenue immediately adjacent to the Property (as summarized in the

Route 9A Reconstruction Project FEIS), did not reveal any additional information with regard to the nature and extent of subsurface contaminants identified in this area.

Phase I ESA – John D. Caemmerer West Side Yard, Block 676, Lot 3, New York, NY, Louis Berger and Associates, P.C., January 2009

A Phase I ESA was prepared by LBA for the Property in January 2009. The findings of the 2009 Phase I ESA were generally similar to those of the 2004 Phase I ESA, with the following additional RECs identified:

- On-site Spill No. 0407411, which was reported based on contamination noted in the northwestern corner of the Property during the 2004 Phase II ESI, and had an active status at the time of the 2009 Phase I ESA.
- On-site Spill No. 0407107, for which closure was requested from NYSDEC at the time of the 2009 Phase I ESA. The report noted that no closure documentation was identified; thus, the spill was identified as a REC. However, based on online NYSDEC records, this spill listing was closed in April 2006.
- Nearby regulatory listings, including four spills which had an active status at the time of the 2009 Phase I ESA, one CERCLIS listing with a No Further Remedial Action Planned (NFRAP) status, and one State BCP site.

WRYHYW-PL-KPF-RPT-A-20190415 Design Report 30 Percent Resubmission Hudson Yards - WRY Platform and Associated Projects, KPF, April 2019

The KPF report outlined the proposed platform and tunnel encasement components of the project and provided specific information related to design and construction and associated schedules. Information pertaining to hazardous materials analysis indicated that a Remedial Investigation (with preapproval by OER) was performed by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) in 2018. It was noted that the results of the RI would be summarized in a Remedial Investigation Report (RIR) and used to prepare a Remedial Action Plan (RAP) for submission to OER, noting that the RAP will describe appropriate remediation measures to comply with the RD, and address soil, groundwater, and soil vapor management, mitigation and disposal procedures. The report noted that once approved by OER, the RAP and associated Construction Health and Safety Plan (CHASP) will govern hazardous materials remediation at the site during redevelopment.

8.0 LIMITATIONS AND DATA GAPS

This assessment met the requirements of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 at the time it was performed, with the following limitations:

- Results of this investigation are valid as of the dates on which the investigation was performed.
- The Site Reconnaissance was conducted from public right-of-ways and public streets; the interior of the WRY facility and associated structures was not accessed.
- Interviews and user provided information were limited to those discussed in Section 6.0. To the extent that interviews were not conducted with the list of interviewees cited in the ASTM Standard (past and present owners, operators, and occupants of the Property and local government officials), AKRF does not believe that this represents a significant data gap likely to result in additional or significantly changed recognized environmental conditions or conclusions.
- The Property area history was not conducted in five-year intervals. However, sufficient information about the history of the site and surrounding area could be obtained from the available historical Sanborn maps, DOB records, and interviews, and this data gap is not likely to alter the conclusions of this report.
- Agency File Reviews for the Property and adjacent properties consisted of a review of standard databases, electronic records maintained by pertinent departments and agencies (summarized in Section 5.2), and FOIL requests submitted to NYSDEC, NYSDOH, NYCDEP, and DOHMH. AKRF believes that this file review was sufficient in determining the potential for recognized environmental conditions (RECs) or other environmental concerns (ECs) at the Property, and additional reviews beyond this are not warranted and would not likely change the conclusions of this assessment.

9.0 CONCLUSIONS AND RECOMMENDATIONS

This Phase I Environmental Site Assessment was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, the Standard are described in Section 8.0. The term “Recognized Environmental Condition” or REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *De Minimis* Condition. A *De Minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action.

This assessment revealed the following:

Recognized Environmental Conditions (RECs)

- Spill #1802063 was reported for the Property in May 2018 at a listed address of 645 West 30th Street (Lot 1) when petroleum contamination was identified during a subsurface investigation in a former bus fueling and washing area located on the southwestern portion of the lot (remnants of the former fueling station including an inactive pump island were observed in this area during the site reconnaissance). The spill file notes indicated that the Property was listed under the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) facility #2-601983 and was associated with a former NYC Department of Sanitation (DSNY) garage (portions of the lot appeared to have been historically used by DSNY for vehicle storage). Several closed-removed underground and aboveground petroleum storage tanks ranging in size from approximately 275 to 2,500 gallons of hydraulic oil, motor oil, biodiesel and diesel were identified; the tanks were reportedly removed between 2007 and 2014. According to the spill file, no evidence of widespread contamination was identified during subsequent soil boring investigations completed in the former bus fueling area in 2018, and it was noted that the proposed redevelopment would require petroleum-contaminated soil removal to the water table with associated waste characterization sampling for off-site disposal purposes. The file notes indicated that remedial activities would be managed under Mayor’s Office of Environmental Remediation (OER) oversight during redevelopment to address contamination and the spill was closed in January 2019.
- Spill #0407411 was listed for the Property in October 2004 with an address of Twelfth Avenue and West 33rd Street (Lot 5) due to significant on- and off-site petroleum contamination discovered during subsurface investigations. The contamination was noted to be primarily on the northwestern portion of the Property and to the north across West 33rd Street. Remedial investigations conducted in 2009 indicated few exceedances of dissolved VOCs in groundwater, and the file notes indicated contamination consistent with manufactured gas plant (MGP) waste was limited to an area on the northwestern portion of the site in deeper soil (below the groundwater interface). It was noted that additional remedial investigation activities were proposed to delineate potential residual contamination, which would be addressed under the NYSDEC State Hazardous Waste Site (SHWS) program (ID #231083). The spill was subsequently closed in March 2013; however, residual contamination may be present. Online NYSDEC records identified the Property as a “P” site (i.e., a potential SHWS site, being evaluated for addition to the registry).
- Sanborn maps and aerial photographs indicated that the Property had a long history of railroad and freight uses, since at least circa 1890 that could have affected subsurface conditions. Additional uses on the site included a lumber yard (subsequently a department store warehouse), freight storage sheds

and a freight terminal. The Property was shown as a rail yard with three ancillary structures (noted as constructed between 1983 and 1985) for the LIRR by 1992.

- The surrounding blocks were largely industrial and automotive in use according to Sanborn maps and the regulatory database information, including various warehouses, a varnish works, a beer distribution facility with fueling operations (subsequently a motor freight station) on the north-adjacent block and various uses including a soap factory, motor freight stations, various manufacturing uses, garages with gasoline tanks, a bus garage (subsequently a DSNY garage) and filling stations on the south-adjacent block. Such uses may have affected area environmental conditions.

On-site/Off-site Environmental Concerns (items outside the scope of ASTM E1527-13 such as ACM, LBP and/or PCBs in Building Materials or Fill/Debris)

- Building components and/or historic fill materials may contain LBP and/or ACM and/or PCBs (including electrical equipment, train ballasts and other rail components).
- The Property was formerly part of the Hudson River, which was filled to expand the Manhattan shoreline beginning approximately in the late 1800s. Based prior subsurface investigations, the Property Site is underlain by an approximately 10- to 45-foot layer of fill materials (including silty sand, gravel, bricks, cinders, concrete, roots, and rock fragments).

Potential for Vapor Encroachment

Based on the RECs identified above, this Phase I ESA identified a potential for vapor encroachment into current or future buildings at the Property. The Property is subject to a Restrictive Declaration; thus, construction of any future buildings is subject to OER oversight. Construction of the proposed platform would include installation of ventilation systems for the train yard beneath. Any future buildings constructed on the platform above a ventilated train yard are unlikely to be affected by vapor encroachment, as no complete soil vapor exposure pathway would exist. It is anticipated that OER will require any future buildings constructed directly on soil and/or bedrock to incorporate vapor control measures.

RECOMMENDATIONS

- As noted above, the Property is subject to a Restrictive Declaration for air quality, noise, and hazardous materials concerns. The Hazardous Materials pre-construction requirements of the RD require that the proposed construction be conducted in accordance with an OER-approved Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP). Following construction, submission and approval of a Remedial Closure Report (RCR) is required to obtain the Notice of Satisfaction (NOS) from the OER, which will be needed to obtain occupancy permits from DOB. The RCR is intended to document that environmental remediation activities at the Property were conducted in accordance with the RAP. Coordination of construction activities may be required with NYSDEC in conjunction with the SHWS program, and the USEPA prior to disturbance of potential PCB-containing materials. All intrusive work must be in accordance with MTA LIRR requirements.
- As noted above, information in the NY Spills database indicated that additional remedial activities would be required to address known or potential residual contamination on the southwestern portion of the Property related to Spill #1802063 and on the northwestern portion of the Property under the SHWS program (ID #231083). Remedial activities in these areas should continue to be conducted in coordination with NYSDEC and OER, as required.
- Any USTs encountered during Property redevelopment should be properly closed and removed, along with any contaminated soil, in accordance with federal, state, and local regulations, including NYSDEC for registration and, if applicable, spill reporting.

- During any future subsurface disturbance, excavated soil should be handled and disposed of properly in accordance with all applicable regulatory requirements. Any evidence of a petroleum spill must be reported to NYSDEC and addressed in accordance with applicable requirements. Transportation of material leaving the Property for off-site disposal should be in accordance with federal, state, and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- Regulatory requirements for ACM (or suspect ACM until proven not to be ACM) include maintenance requirements and, prior to any renovation or demolition, inspection/sampling by a NYC-certified asbestos investigator to determine if the project will disturb ACM. Any ACM in an area to be disturbed (and any other ACM subsequently identified) should be removed prior to the renovation or demolition.
- Unless there is labeling or test data indicating that suspect PCB-containing electrical equipment does not contain PCBs, and that caulking/glazing and fluorescent lighting fixtures, thermostats, etc. are not mercury- and/or PCB-containing, if disposal is required, it should be performed in accordance with applicable federal, state and local regulations and guidelines.
- Any activities with the potential to disturb lead-based paint should be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration regulation 29 CFR 1926.62 - Lead Exposure in Construction).
- Dewatering activities should be conducted in accordance with applicable discharge requirements, including NYCDEP protocol, with pre-treatment (if required).

10.0 SIGNATURE PAGE

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property for which the assessment was performed. We have performed all the appropriate inquiries in conformance with standards and practices set forth in 40 CFR Part 312.



Axel Schwendt
Vice President



Neoma Chefalo
Technical Director

11.0 QUALIFICATIONS

The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the Property, and to identify existing and/or potential environmental issues associated with the Property including *Recognized Environmental Conditions* as defined in ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*.

The assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in accordance with the above-referenced ASTM Standard, except as noted otherwise in Section 8.0. It should only be used as a guide in determining the possible presence or absence of hazardous materials on the Property at the time of the reconnaissance, as it is based upon the review of readily available records relating to both the Property and the surrounding area, as well as a visual reconnaissance of current conditions.

This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

This report is based on services performed by AKRF, Inc. professional staff and observation of the Property and its surroundings. We represent that observations made in this assessment are accurate to the best of our knowledge, and that no findings or observations concerning the potential presence of hazardous substances have been withheld or amended. The research and reconnaissance have been carried to a level that meets accepted industry and professional standards. Nevertheless, AKRF and the undersigned shall have no liability or obligation to any party other than WRY Tenant LLC and its successors or assignees, and AKRF's obligations and liabilities to the above, their successors or assignees is limited to fraudulent statements made, or grossly negligent or willful acts or omissions.

12.0 REFERENCES

1. Environmental Data Resources, Inc., WRY, Regulatory Radius Search, November 2020.
2. U.S. Geological Survey, *Weehawken, NJ – NY Quadrangle, 7.5 minute Series (Topographic), Scale 1:24,000*, 2014.
3. U.S. Geological Survey, *Bedrock and Engineering Geologic Maps of Bronx County and Parts of New York and Queens Counties, New York, Map I-2003, Sheet 2 of 2*, Charles A. Baskerville, 1992.
4. New York State Department of Health: Office of Public Health - Environmental Radiation Section, *Basement Radon Screening Data*, October 2019.
5. Sanborn Insurance Maps dated 1890, 1899, 1911, 1930, 1950, 1976, 1982-1992, and 1995-2005.
6. New York City Department of City Planning – Zoning Resolution, Appendix C – CEQR Requirements, <https://zr.planning.nyc.gov/appendix-c-table-1-city-environmental-quality-review-ceqr-environmental-requirements-e-designations> and <https://zr.planning.nyc.gov/appendix-c-table-2-city-environmental-quality-review-ceqr-environmental-requirements-environmental>, reviewed November 5, 2020.
7. *Phase I Environmental Site Assessment – Block 676, Lot 3; Block 704, Lot 1; and Block 702, Lots 1 and 50*, Parsons Brinckerhoff and Louis Berger and Associates, P.C., July 2004.
8. *Phase II Environmental Site Investigation – Caemmerer Yard West*, Parsons Brinckerhoff, 2004.
9. *Phase I Environmental Site Assessment – John D. Caemmerer West Side Yard, Block 676, Lot 3, New York, NY*, Louis Berger and Associates, P.C., January 2009.

FIGURES

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

APPENDIX B
HISTORICAL SANBORN MAPS

APPENDIX C
HISTORICAL AERIAL PHOTOGRAPHS

APPENDIX D
REGULATORY DATABASE REVIEW

APPENDIX E
LOCAL RECORDS/PREVIOUS REPORT