State of New York/First Rensselaer/Marine Management Site
Table of Contents

Table of Contents (continued)

Section **Page**

List of Tables

List of Figures

State of New York/First Rensselaer/Marine Management Site

2 Phase I Environmental Site Assessment

2.1 Site Location, Description, and Environmental Setting

The State of New York/First Rensselaer/Marine Management Final Candidate Site (FCS) is located in the Hudson-Mohawk Lowland physiographic province. The topography of this province has been produced primarily by erosion along outcrop belts of sedimentary rocks that lie between the Catskills and the metamorphosed shale hills of the Taconics. The province generally has low relief and elevation and is underlain by Ordovician shales that have been exposed by the erosion of Silurian and Devonian limestones (University of the State of New York 1966). Site photos are found in Appendix A.

The State of New York/First Rensselaer/Marine Management site has an area of approximately 16.6 acres and comprises 17 parcels (see Figure 2-1). The site is located in Rensselaer, New York, on the east side of Hudson River (at approximately river mile 146.7). Site owners include the State of New York, First Rensselaer Corporation, and Marine Management of the Hudson, Inc. The site is undeveloped and there are no buildings or other structures on the site. The remains of an old concrete foundation measuring approximately 20 feet by 30 feet are located near the midpoint of the eastern side of the site, nearly 40 feet west of the railroad right-of-way (ROW).

The site is bordered by a single-family riverfront residence and vacant commercial properties to the north; the railroad ROW and a train station to the south; the railroad ROW, industrial manufacturing and processing facilities, and residential and commercial properties to the east; and the Hudson River to the west. A school and a cemetery are located within 1 mile to the northeast, and a park is located within 0.5 mile to the southeast. The site is mostly wooded and has a variable topography. The southwestern part of the site exhibits a gentle grade to a sandy or gravelly beachfront along the Hudson River. A very steep incline of more than 25 vertical feet flanks the northwestern end of the site, which is owned by Marine Management.

A gray ash pile with an average height of 6 feet above grade and a width of 15 feet flanks most of the eastern site border south of a sewage pumping station. Mounding with municipal-type trash at surface and in depressions was observed in the northern portion of the site during the July 2003 site visit. Several piles of surface debris consisting of glass, concrete blocks, roofing shingles, and tires were noted throughout the remainder of the site. Three empty drums were noted. At least one junked vehicle was observed. In addition, a stacked pile of approximately 50 to 100 wooden telephone-type poles is located in the east-central part of the site. A 24-inch-diameter pipe traverses the northern part of the site.

The site is completely unfenced and can be accessed by vehicle. Road access to the site is via Tracy Street, a residential road that ends at the north edge of the site (see Figure 2-1). Forbes Avenue connects to Tracy Street from the north. Houses, vacant residential land, and industrial manufacturing and processing facilities separate the site from Broadway Avenue, which runs parallel to the east side of the site. While rail lines do not

traverse the site, there are approximately 2,000 feet of direct rail access. A single active rail line borders the eastern side of the site adjacent to the ash pile (see above), and a railroad bridge crosses the river immediately south of the site. A railroad yard is located south of the site. River access is provided by approximately 1,400 feet of river frontage, and no structures are located directly on this portion of the shoreline. No dock facilities are located on the site.

An overhead electrical transmission line bisects the site. Key site features are presented on Figure 2-1.

2.2 Historical Use Information

On an 1876 Beers map the project area appears to extend into the river, suggesting that much of the site consists of made land. At that time there were no structures on the site. By 1950, according to the U.S. Geological Survey (USGS) topographic map, the western portion of the area had been completely filled. The made land consists of dredgings of gravel, sand, and mud from the Hudson River, construction and demolition debris, and trash. The made land was used to fill in low areas, marshes, and bottomlands. In most places, the made land covers the original land to a depth of several feet (Planners East, Inc. 1986).

2.3 Summary of Previous Studies

According to the current owners of the Marine Management parcel, no previous site assessments have been conducted on the site.

3. Phase II Investigation

3.1 Field Investigations

The initial phase of the environmental assessment consisted of collecting environmental and geotechnical samples. Results of the geotechnical sampling are provided in Section 4 of this report. Site photos are found in Appendix A. Boring logs and supplemental geotechnical information are found in Appendix B. Environmental samples were collected from surface soil, subsurface soil, and groundwater. Surface and subsurface soil samples were collected in areas of surficial dumping and areas of the sites where construction operations would be expected to occur if the site were selected. Sediment samples were collected along present site runoff flow pathways. Groundwater samples were collected to provide an indication of overall environmental conditions.

All environmental field investigations were performed in accordance with the August 2003 *Hudson River PCBs Superfund Site Facility Siting Work Plan* (Ecology and Environment, Inc.) and the September 2003 addenda to that plan, the *Site-Specific Field Investigations of Final Candidate Sites* (Ecology and Environment, Inc.). Investigations at this site were performed in September and October 2003. A summary of investigation activities and dates is provided in Table 3.1-1.

Deviations from the Work Plan
The following deviations from the work plan occurred during the field program:

- Geotechnical boring MM-GT01 was moved approximately 100 feet to the northwest and MM-GT02 was moved approximately 100 feet north to facilitate rig access.

- Geotechnical boring MM-GT03 was moved approximately 150 east from the State of New York parcel to the First Rensselaer parcel because of lack of permission to access the State of New York parcel.

- Geoprobe boring MM-GP03 was eliminated because of lack of permission to access the State of New York parcel.

- Because of lack of permission to access the State of New York parcel, surface soil sample locations MM-SS03, MM-SS04, and MM-SS06 were eliminated, and MM-SS08A was moved from the State of New York parcel to the First Rensselaer parcel.

- Because of lack of permission to access the State of New York parcel, surface water/sediment sample location MM-SW/SE01 and sediment location MM-SE02 were eliminated.

- Initially the field team was unable to collect all groundwater parameters on October 10 from temporary well MM- GP04 due to poor recharge. However, the remaining volumes were collected on October 15.

3.2 Environmental Sampling Program

3.2.1 Temporary Well Installation and Groundwater Flow

Three temporary 1-inch polyvinyl chloride (PVC) wells were installed via direct push technologies (DPT). Well construction information is provided in Table 3.2-1. Before groundwater sampling, each temporary well was purged three times the volume of water standing in the casing or to dryness (whichever occurred first). Water quality parameters measured in the field during purging are presented in Table 3.2-2. Groundwater sample results are described below.

Groundwater elevations were measured from each temporary well upon well completion and at two separate times following completion of the sampling program. In addition, a surface water elevation was obtained from the Hudson River along the western border of the site via a stream gauge. The top of each temporary well and a reference mark on the stream gauge were surveyed so that an accurate elevation could be obtained. Table 3.2-3 summarizes the recorded elevations. Based on the limited information available from this study (three wells spaced more than 600 feet apart), groundwater flow beneath the site appears to be to the northwest towards the Hudson River (see Figure 3-1). The water level measurement round that was mapped occurred close to low tide. The water level measurement round on November 6, 2003 was taken near high tide. MM-GP02 was impacted by the increase in water levels on the Hudson River, creating a temporary reversal of gradient during which flow was from the northwest to the southeast.

3.2.2 Field Sampling and Surveying

The environmental investigations at this site included collecting seven surface soil samples; subsurface soil sampling and installation and sampling of temporary 1-inch monitoring wells via direct push technologies (DPT) at three locations; two geotechnical soil borings; and installation of one stream gauge for hydrologic monitoring purposes. Table 3.2-4 summarizes the total number of field and quality assurance/quality control (QA/QC) samples collected and the parameters for which they were analyzed. Figure 3-1 illustrates all environmental investigation locations. All sample locations and stream gauges were surveyed for both horizontal and vertical positions. Survey data is presented in Appendix C. All samples were collected in accordance with the project work plans. Field chemistry data recorded from surface water sample locations are presented in Table 3.2-2. Results from each sample media are described below.

3.2.3 Data Usability

Soil, sediment, surface water, and groundwater samples were collected from various locations at each FCS (see Section 3.3). The samples were submitted to several environmental analytical laboratories for analytical testing as directed by EPA. Appendix D provides the complete analytical results, field quality control (QC) samples, and data qualification. The specific data usability concerns regarding each FCS are still under evaluation as part of a detailed review of the hard copy data assessment reports. The following is a summary of general information regarding data usability determined from the electronic data review.

Out of a total of 1,903 reported values, 194 values were qualified during the data validation process. The data points that were qualified as estimated, bias low, or non-detect are considered useable for the purposes of this project. A total of 17 values were flagged as unuseable, resulting in a completeness of more than 99.9%. Further evaluation of the data will include determining potential limitations of other qualified data and the impact of rejected data. In general, potential data limitations for the site are minor, as noted below:

- Low levels of several volatiles and pesticides were flagged "U" as non-detected. The results were generally below the reporting limit and, therefore, the data qualification has no impact on the data usability.

- Data qualified as unusable are for compounds that are generally highly reactive and not typically found during site investigations.

- Field blanks, including trip blanks, rinseates, and field duplicates, were collected to be applicable to all FCSs. The results are summarized in Appendix D. The results demonstrate good overall sampling and analysis precision and no significant field contamination.

- The laboratory reported tentatively identified compounds (TICs) for volatile and semivolatile compounds on the hard copy data package. TIC values are reported as

"NJ" with presumptive evidence that the compounds are present and concentrations are considered highly estimated. The TICs are being reviewed to determine any indications of significant contamination not identified by the results for the known target compounds.

3.3 Environmental Sample Results and Evaluation

State and federal standards, criteria, and guidances were used for preliminary screening purposes during review of the analytical sample results for surface soil, subsurface soil, surface water, sediment, and groundwater. Exceedances of the criteria (with the exception of metals) are noted in Tables 3.3-1through 3.3-3 by shading the values that exceeded the criteria.

Metals cannot be directly compared to the criteria without additional evaluation (including evaluation of background levels) because metals occur naturally in the environment. Additionally, turbidity in surface water and groundwater samples can cause interference with metals analysis. These factors were considered in the evaluation of the significance of detected compounds.

The criteria were selected based on a review of available EPA and New York State Department of Environmental Conservation (NYSDEC) standards, criteria, and guidances for the various media sampled. The applicability of these preliminary screening criteria to the FCSs will be determined as part of further evaluation by EPA in consultation with NYSDEC and the New York State Department of Health (NYSDOH).

The following discussion identifies the samples, by medium, with compounds exceeding the screening criteria. Those compounds without appropriate screening criteria also are identified. Where available, pertinent information for comparison purposes is provided.

Soil (Surface and Subsurface)

(NYSDEC, *Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (1994) and subsequent amendments (December 20, 2000) (TAGM 4046). The recommended soil cleanup objectives and typical eastern USA background concentrations for metals contained in TAGM 4046 were used as preliminary screening guidance for soil. Where specific guidance values were available for surface and subsurface soils (such as for polychlorinated biphenyls [PCBs]) they were applied based on the depth of the samples collected. TAGM 4046 assumes a total organic carbon (TOC) of 1%.

Surface Water

NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998). These standards and guidance provide values for various water classes. Since the majority of the surface water samples were collected from unnamed ditches and ponded water areas at the site, the surface water samples collected are assumed to be Class D waters. Class D waters are best used for fishing. However, due to natural conditions such as intermittent flow, water conditions may not be conducive to fish propagation.

Class C waters are considered conducive to fish propagation. Surface water standards and guidance values are calculated for some inorganics based on water hardness.

Sediment
NYSDEC, *Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments* (1999). This guidance requires organic contaminants in sediments to be calculated based on sample TOC. TOC data were collected and used to calculate these screening values. Various criteria for bioaccumulation and acute and chronic toxicity are presented in this document for protection of human health, benthic aquatic life, and wildlife. The benthic aquatic life chronic toxicity protection level for sediment was selected as the preliminary screening value for all collected sediment samples.

Groundwater
NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998) provides Class GA standards and guidance values. The *National Primary and Secondary Drinking Water Regulations, Current Drinking Water Standards* (2002) maximum contaminant levels (MCLs) were used for preliminary screening for groundwater samples collected from the temporary wells.

3.3.1 Surface Soil

Volatile Organic Compounds (VOCs)
No VOCs exceeding criteria were detected (see Table 3.3-1). Compounds without standards that were detected were cyclohexane, dichlorodifluoromethane, isopropylbenzene, methylcyclohexane, styrene, and trichlorofluoromethane in MM-SS08. Because of the low levels of VOCs detected (less than 6 µg/kg[J]), their presence is not of concern.

Semivolatile Organic Compounds (SVOCs)
Exceedances of SVOC standards occurred for 4-nitrophenol (440 µg/kg [J]) benzo(a)anthracene (260 µg/kg [J] to 1,800 µg/kg), benzo(a)pyrene (270 µg/kg [J] to 1,800 µg/kg), benzo(b)fluoranthene (2,300 µg/kg to 2,600 µg/kg), benzo(k)fluoranthene (1,500 µg/kg), chrysene (720 to 2,100 µg/kg), and dibenzo(a,h)anthracene (150 µg/kg [J] to 640 µg/kg) (see Table 3.3-1). Compounds without standards that were detected were acetophenone at MM-SS05 (1,000 µg/kg) and carbazole at MM-SS01 (160 µg/kg), MM-SS07 (140 µg/kg[J]), and MM-SS08 (150 µg/kg[J]).

Pesticides
No pesticides exceeding screening criteria were detected. Pesticides without screening criteria that were detected were endrin aldehyde and methoxychlor; however, these were detected at low estimated levels and so their presence is not of concern (see Table 3.3-1). The results for methoxychlor at MM-SS08 were rejected.

Herbicides
No herbicides were detected in the surface soil samples.

PCBs
No PCBs were detected in the surface soil samples.

Hexane Extractable Materials (Total Petroleum Hydrocarbons [TPH])
TPHs were not detected in the surface soil samples.

Inorganics
Arsenic, barium, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, mercury, nickel, selenium, and zinc were detected above their NYSDEC screening values (see Table 3.3-1). Metals are naturally occurring constituents of soils that often exceed criteria, and so these exceedances are not necessarily of concern. However, the following samples contained metals greater than three times the highest value in the eastern USA range: zinc in MM-SS01 (fill area); copper, mercury, and zinc in MM-SS02 (fill area); barium, cadmium, and zinc in MM-SS05 (surficial dumping area); zinc in MM-SS08 (composite adjacent to the railroad); and barium, cadmium, copper, and zinc MM-SS09 (drum area inside foundation).

Cyanide was detected at low levels (0.27 to 0.35 mg/kg) in three surface soil samples. No standard is available for cyanide; however, the presence of cyanide at such low levels is not a concern.

3.3.2 Subsurface Soil

VOCs
No VOCs exceeding screening criteria were detected (see Table 3.3-2). Low levels of compounds without screening criteria — cyclohexane (3 µg/kg [J]) and methylcyclohexane (3 µg/kg [J]) — were detected in MM-GP04-SB (8 to 10 feet bgs) (see Table 3.3-2).

SVOCs
Benzo(a)anthracene (300 [J] to 480 µg/kg), benzo(a)pyrene (280 [J] to 490 µg/kg), chrysene (480 µg/kg), and dibenzo(a,h)anthracene (88 to 120 µg/kg [J]) were detected above NYSDEC standards (see Table 3.3-2).

Pesticides
No pesticides that exceeded screening criteria were detected (see Table 3.3-2).

PCBs
No PCBs were detected in subsurface soil samples.

Inorganics
Arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, magnesium, mercury, nickel, and zinc were detected above their NYSDEC screening values (see

Table 3.3-2). Metals are naturally occurring constituents of soils that often exceed criteria; therefore, these exceedances are not necessarily of concern. However, the following samples contained metals greater than three times the highest value in the eastern USA range: cadmium, mercury, and zinc in MM-GP01-SB (8 to 12 feet bgs) (fill area); and zinc in MM-GP04-SB (8 to 10 feet bgs)(surficial dumping area).

Cyanide was detected at 1 mg/kg and 0.22 mg/kg in MM-GP01-SB (8 to 12 feet bgs) and MM-GP04-SB (8 to 10 feet bgs, respectively. There is no standard available for cyanide; however, these low concentrations are not of concern.

3.3.3 Surface Water

No surface water samples were collected at this site.

3.3.4 Sediment

No sediment samples were collected at this site.

3.3.5 Groundwater

VOCs
No VOCs that exceeded screening criteria were detected (see Table 3.3-3).

SVOCs
No SVOCs with criteria were detected (see Table 3.3-3). Caprolactam, a compound without a screening value, was detected in two wells: MM-GP01 (390 µg/L) and MM-GP04 (6 µg/L [J]) (see Table 3.3-3).

Pesticides
No pesticides were detected in the groundwater samples.

PCBs
No PCBs were detected in the groundwater samples.

Inorganics
Aluminum, iron, and manganese were each detected in at least one well above NYSDEC and/or EPA screening values (see Table 3.3-3). These metals are naturally occurring constituents of groundwater that often exceed criteria and therefore these exceedances are not of concern.

4. Geotechnical Assessment

A subsurface field investigation was conducted at the State of New York/First Rensselaer/Marine Management site to obtain geotechnical information. The primary purpose of collecting this data was to determine if there are geotechnical limitations associated with the use of the site for a sediment processing/transfer facility. Data collection included:

- Review of available subsurface information from previous studies;

- Soil borings installation (which included logging the subsurface geology and obtaining standard penetration test [SPT] data); and

- Submitting soil samples for geotechnical testing.

Presented below is a summary of the site geologic and geotechnical data collected.

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3-1 shows the locations of three geotechnical boreholes, MM-GT01 through MM-GT03, installed during this study. At each geotechnical boring location a continuous vertical soil profile was developed from the ground surface to a depth of approximately 26 feet below ground surface (bgs) in 2-foot increments. A 2-inch outer diameter (OD) by 24-inch long split spoon sampler was advanced through 4.25-inch inner diameter (ID) hollow stem augers to collect the samples. Standard penetration tests using a split spoon sampler were conducted per ASTM Method D1586-99. Blow count data was recorded on boring logs and is presented in Appendix B. Granular soil density and cohesive soil consistency were classified using SPT n-values, which are the sums of the blows recorded over the second and third 6-inch penetration intervals of the tests.

One soil sample from each geotechnical boring was collected and submitted for Atterberg limits, particle size, and moisture content analysis. The overall goal of sample collection from geotechnical borings was to collect at least one soil sample from each soil horizon encountered within the top 25 feet of overburden. At two boreholes, one soil sample from each depth interval also was collected and submitted for moisture content testing, creating a continuous moisture profile from the ground surface to the bottom of the borehole. Particle size gradation curves and their respective analytical summary sheets, which also list Atterberg limit data and moisture content data, are presented in Appendix B.

In addition to the geotechnical borings, subsurface geology was also recorded at three other locations, MM-GP01, MM-GP02, and MM-GP04, during subsurface investigation activities completed for environmental sampling. These soil investigation activities were conducted using direct-push technology (DPT); a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet bgs. DPT soil boring logs are also presented in Appendix B.

The subsurface data indicates that the northern end of the property contains fill consisting of silt, sand, metal, glass, brick, and cinders that extends to a depth of approximately 18.5 feet bgs. This fill is underlain by sand grading to a sand and silt mixture containing gravel to a depth of approximately 25 feet bgs. Farther inland, a thinner (approximately 2-foot thick) fill layer lies at the surface in the northeast part of the site, south of the

sewage treatment pump station. Very loose silty sands and sand layers, classified per SPT n-value records, often containing gravel, underlie the fill to a depth of approximately 17 feet bgs, where a thin peat layer (<0.5 feet thick) lies. Clay underlies the peat layer to a depth of at least 26 bgs. The consistency of this clay increases from very soft to medium, based on SPT n-values increasing from 1 to 6 with depth.

The central part of the site consists of an approximately 3.5 foot thick layer of sand containing brick fragments, which is underlain by sand containing gravel to a depth of 25 feet. Farther inland, the fill layer is absent. The density of soil in the central part of the site is generally loose, based on SPT n-values.

The southeastern corner of the site also contains fill ranging in thickness from approximately 2 to 6 feet. A sandy clay lens containing gravel and about a foot thick lies at a depth of approximately 6 feet bgs under the thicker fill zone; it is underlain by layers of gravelly sands, clay silts with sands, silts, and sands to a depth of 25 feet. The thinner fill zone further to the west is underlain by nearly 4.5 feet of clay silt, under which layers of gravelly sand, silty sand, and gravel/sand/silt mixtures extend to a depth of 17 feet bgs. SPT n-values indicate densities in these granular soils are generally loose to very loose. Clay underlies the southern end of the site, starting at a depth of approximately 17 feet bgs; its consistency is classified as medium to soft, based on SPT n-values.

5. Utility Assessment

5.1 Preliminary Assessment

A preliminary utility assessment was completed as part of the site-specific field investigation of the Final Candidate Sites. Major site utilities identified on-site are shown on Figure 2-1. The assessment included the following steps:

1) Observations of site surface utilities such as overhead power or telephone lines, electrical transformers, manholes, sewer outfalls, and water hydrants were made.

2) Dig Safely New York (Dig Safe) was contacted as part of the utility clearance process before subsurface/intrusive work activities, including direct communication with various utility operators, as needed. Operators of on-site utilities provided information.

3) Available site maps were reviewed. Maps were obtained from various sources, including property owners.

It is anticipated that further utility assessments will be completed at the Recommended Sites. Further assessment may include contacting local municipal offices for information, opening manholes to determine flow paths, and dye testing. Further assessment may be conducted as part of the design evaluation process or during other additional investigation of Recommended Sites.

5.2 Findings and Observations

Utilities identified at the State of New York/First Rensselaer/Marine Management site include the following:

- A sewer pipeline extends from the southern end of the site to the Rensselaer County sewage pump station (located in the northeastern part of the site). This sewer line then bends approximately 45 degrees and extends toward the pump station; a manhole is located at this bend. Approximately 50 feet south of the pump station, the line turns north and enters the facility.

- A 24-inch discharge pipeline extends from the pump station to the Hudson River where the outfall is located.

- An overhead electrical power line right-of-way is located in the central part of the site and runs north-south.

6. Survey of Terrestrial, Archaeological, and Architectural Resources (STAAR)

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect that facility siting may have on cultural resources that are listed or are eligible for listing on the National Register of Historic Places (NRHP). Phase IB field investigations continued the cultural resources studies and are specifically designed to determine the presence and extent of cultural resources within the State of New York / First Rensselaer /Marine Management site (see *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plan: Site-Specific Field Investigations of the Final Candidate Sites*). Field activities involved archaeological, geomorphological, and architectural investigations.

6.1 Archaeological Investigation

Initial field reconnaissance was conducted in July 2003 and Phase I field investigations on November 14, 2003. One modern foundation of poured concrete with sectioned rooms was found. It is surrounded by fill. Further investigation is not recommended due to disturbance and property history. Phase I field investigations are complete for this entire FCS. Pending complete analysis, no further investigations are recommended.

6.2 Geomorphological Investigation

Field investigations were conducted on October 25, 2003. Most of the site contains a modern landfill. One 10-meter long trench approximately 1.3 meters in depth and 10 meters in length was excavated (Figure 6-1). The trench was located on the northern half of the project area and revealed the presence of river cobbles. No particular features or artifacts were observed.

Much of the area is landfill. The geomorphologist, after conferring with the backhoe operator, determined that only one trench would be possible to excavate in order to avoid

contact with the landfill area. The rest of the site was extremely uneven and strewn with trash.

Prehistoric Site Sensitivity
This site has been severely disturbed. No evidence was found of the original shoreline indicated on historic maps, and no intact paleosols were found.

6.3 Architectural Assessment

Fieldwork was conducted in July 2003. No structures are currently located within this site other than the concrete ruins mentioned above. The NRHP-listed Casparus Pruyn house and office is located approximately 300 feet to the north. Numerous NRHP-listed structures are located across the river in downtown Albany but the site would most likely be shielded by elevated roadways and other structures. A potentially historic railroad bridge crosses the river immediately south of the area of potential effect (APE) and will require evaluation for potential NRHP-eligibility.

7. Wetland Assessment

7.1 Determination and Delineation Methods

Wetland determinations on the State of New York/ First Rensselaer/ Marine Management site on October 13, 2003 followed the routine approach noted in the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual*, as outlined in Section 3.6.2.2 of the *Hudson River PCBs Superfund Site Facility Siting Work Plans* (Master Work Plans) (Ecology and Environment, Inc. 2003). Applicable data (e.g., soil surveys, National Wetland Inventory [NWI] mapping, etc.) were reviewed beforehand to provide background information (see the Master Work Plan, Section 3.6.2.1). Determination activities were limited to those areas previously identified as potential wetlands through data review (i.e., NWI and NYSDEC mapping) and previous site reconnaissance efforts.

The State of New York/First Rensselaer/Marine Management site is approximately 16.6 acres and comprises 17 parcels. An 1876 map shows the site is within the river channel, indicating that it was likely created by the disposal of dredge spoils over time.

Currently the site is mostly wooded with a variable topography that is the result of the past filling and dumping activities. The southwestern part of the site exhibits a gentle grade to a sandy/gravelly beachfront along the Hudson River. A very steep incline of more than 25 vertical feet flanks the northwestern end of the site, which is owned by Marine Management. Mounding with municipal-type trash at the surface and in depressions was observed in the northern portion of the site. Several piles of surface debris consisting of glass, concrete blocks, roofing shingles, and tires were noted throughout the remainder of the site.

7.2 Review of Existing Information

Review of NWI and NYSDEC wetland mapping (Figure 7-1) indicated the presence of a NWI-identified riverine wetland complex along the shoreline of the site. No further wetlands were identified on any of the parcels. Although NWI wetland maps identify

entire river systems as riverine or lacustrine wetlands, sample plots and determinations along the shoreline were limited to areas that exhibited wetland characteristics and occurred above the ordinary high water mark.

The Rennselaer County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1988). The mapped soil type within this site is udorthents, deep and excessively drained soils formed in recent fill deposits occurring on till and flood plains. Soils observed on-site had a large sand content and may have been spoils piles from river dredging activities. Site soils have been disturbed due to the extensive filling and dumping of trash and building materials.

7.3 Results of the Wetland Assessment

Species identified on the site include Norway maple (*Acer platanoides*), silver maple (*Acer saccharinum*), poison ivy (*Toxicodendron radicans*), tree of heaven (*Ailanthus altissima*), American bitter-sweet (*Celastrus scandens*), glossy buckthorn (*Rhamnus frangula*), Carolina buckthorn (*Rhamnus caroliniana*), cottonwood (*Populus deltoides*), stinging nettle (*Urtica dioica*), red mulberry (*Morus rubra*), green ash (*Fraxinus pennsylvanica*), and spotted jewelweed (*Impatiens capensis*).

A more detailed description of the community types on this site can be found in Section 10.

Field observations of site vegetation, soils, and hydrologic characteristics indicated that there are no areas on this site that meet the three-parameter approach outlined in the USACE *Wetland Delineation Manual*. Therefore, no wetlands were identified as occurring on-site.

8. Floodplain Assessment

An initial floodplain assessment was conducted on the State of New York/First Rensselaer/Marine Management site in order to determine the presence, extent, and orientation of Federal Emergency Management Agency (FEMA)-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding. Appendix E provides the methodology and assumptions involved in this assessment.

8.1 Location and Orientation of the Floodplain

Figure 8-1 shows that portions of the site are located within the 100-year and 500-year floodplains. The floodplain areas were obtained from Flood Hazard Boundary Maps and the City of Rensselaer Flood Insurance Study (September 1979) from FEMA's Federal Insurance Administration.

The site is located on the east side of the Hudson River in the City of Rensselaer. The total area is approximately 16.6 acres (see Table 8-1). Approximately 89.8% (14.9 acres)

of the total area is within the base (100-year) floodplain. River frontage is approximately 1,400 feet in length.

The site is located almost entirely within the 100-year floodplain, with the exception of a narrow strip of land along the eastern boundary. This latter area is mapped as occurring within the 500-year floodplain. The entire width (~575 feet) of the northern portion of the site is within the 100-year floodplain.

Table 8-1 Summary of New York State/First Rensselaer/Marine Management Site and Floodplain Characteristics

Is a portion of the site in the base (100-year) floodplain?	Yes
Total area of the site	16.6 acres (725,242 ft^2)
Area of the site within the base (100-year) floodplain	14.9 acres (650,914 ft^2)
Percentage of the site within the base (100-year) floodplain	89.8%
Perimeter of the site (total length)	3,970 ft
Perimeter of the site bordering the Hudson River (river frontage)	~1,400 ft
Greatest width between the outer boundary of the base floodplain and the Hudson River boundary	~575 ft

8.2 100-year Flood

The FEMA maps show the 100-year flood elevation at the site to be 21 feet National Geodetic Vertical Datum (NGVD). A brief examination of site topography and the suggests FEMA mapping suggests that site elevation characteristics have not changed significantly since the FEMA floodplain modeling and mapping occurred.

The closest gauge station with historic flow data is the Troy gauge station (per the National Weather Service station TRYN6, which is also the same as the U.S. Geological Survey [USGS] station 01358000 on Green Island), approximately 7 miles upstream of the site location. The Troy/Green Island gauge station flood stage is 24 feet NGVD. At this elevation water reaches mobile homes along the riverfront in Lansingburgh. At 27 feet, numerous evacuations have occurred, with approximately 1,000 cellars and 300 homes affected. At 29 feet, there are disaster conditions, with several feet of water on riverside streets (National Weather Service Advanced Hydrologic Prediction Service, http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?aly&Hudson%20River).

Flood magnitudes were calculated from fifty-seven years of flow data at the Troy/Green Island gauge station. Based on this data, the 100-year flood stream flow for this station is 200,590 cubic feet per second (cfs). A flood of this magnitude has not occurred in the fifty-seven years of modern data. In that time, there have been five flow events greater than a 10-year flood, including three that were also greater than a 20-year flood (December 31, 1948; March 14, 1977; and January 20, 1996).

8.3 Local Flooding

Given that the site is located in the estuary portion of the Hudson River, no data are available from the NYSCC that are relevant for investigating flooding issues.

A spot elevation surveyed along the river edge of the boundary was 0.9 foot NGVD. The contour information (5-foot intervals) provided with 2002 aerial photography of the site shows a 5-foot contour line running along the land-river edge. Therefore, the 100-year flood would put the river frontage of the site under approximately 20 feet of water.

While the probability of a 20-foot inundation event (100-year flood) is remote, there is the possibility of flooding on a smaller scale. The Flood Insurance Study shows the 10-year flood profile in the vicinity of the site to be 15 feet NGVD. The study indicates that flooding may occur during any season. However, the majority of major floods have occurred during the months of February, March, April, and May. Through the time of the report (1979), the five worst floods on the Hudson River that caused damage in the City of Rensselaer were identified as February 1900 (80-year flood), March 1902 (50-year flood), March 1913 (120-year flood), March 1936 (33-year flood), and January 1949 (30-year flood).

9. Coastal Management Area Assessment

The State of New York/First Rensselaer/Marine Management site is located within the state-defined Hudson River Coastal Management Area. In addition, the City of Rensselaer has an approved Local Waterfront Revitalization Program (LWRP) (City of Rensselaer 1987). The state CMP provides for policies and procedures on development and other activities within the state-defined coastal zone. The Rensselaer LWRP provides additional purposes and objectives of the city's planned uses for the Rensselaer coastal zone.

If the State of New York/First Rensselaer/Marine Management site were selected as a site for the Phase 1 and Phase 2 dredging, the siting of a sediment processing/transfer facility at this location would be consistent with the state CMP development policies to revitalize underutilized waterfront areas for commercial and industrial uses (Policy 1) and to facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters (Policy 2). It is anticipated that the layout, construction, and operation of the facility at the site would not have an adverse effect on other relevant policies of the state CMP.

EPA will prepare an additional phase of its coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

However, locating the sediment processing/transfer facility at this site may not be consistent with the Rensselaer LWRP. The area encompassing the site is currently zoned as commercial/industrial, but the Rensselaer LWRP states that "residential and associated open space use here would be more consistent with the City's stated efforts to concentrate

commercial/industrial development to the west and south of the Conrail tracks, with residential neighborhood stabilization and revitalization encouraged elsewhere in the City." (City of Rensselaer 1987). Consequently, the use of this site for a sediment processing/transfer facility would likely not be consistent with the approved Rensselaer LWRP. Further analysis would have to be conducted to determine the consistency issue.

10. Baseline Habitat and Threatened and Endangered Species Assessment

10.1 Site Habitat Description

The State of New York/First Rensselaer/Marine Management site description information is presented in the *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plans: Site-Specific Field Investigations of the Final Candidate Sites* (Ecology and Environment, Inc. September 2003). In brief, historic and current land uses have influenced the availability, extent, and diversity of on-site habitats. The site is situated on the east side of the river within the Rensselaer City limits. It appears to have been used historically and is currently actively used for surficial dumping. In addition, the shoreline appears to be occasionally used for angling. There are no facilities on the site, except for a remnant concrete foundation adjacent to the railroad right-of-way. The majority of the habitats on-site are composed of early successional (less than 20 years) to mid-successional (20 to 60 years) vegetation communities. It was noted that a number of trees in the Appalachian oak hickory forest are late successional in age (> 60 years).

Figure 10-1 shows the habitat community types, as defined by Edinger et al. (2002) that are present on the site. Field investigations were conducted on October 13, 2003 to determine habitat availability within the site and to provide descriptions of existing habitat structure, diversity, and condition. Five community types are found on this 17-acre site; no significant or unique habitats are among them. The predominant communities (relative to total cover across the site) are briefly described below. A description of the different community types from Edinger et al. is presented in Appendix F.

Successional Northern Hardwood

The successional northern hardwood (SNH) community occurs across most of the site, accounting for approximately 84% of the total area. Predominant tree species include black locust and tree-of-heaven. Additional tree species include cottonwood, quaking aspen, box elder, basswood, slippery elm, and mulberry. The shrub layer was most commonly characterized by honeysuckle. There was relatively no herbaceous cover.

Appalachian Oak Hickory

The Appalachian oak hickory forest (AOF) comprises about 6% of the site. The predominant species are bitternut hickory and sugar maple. In addition, some of the species found in the SNH community occur in reduced numbers and densities in this community.

Other Communities
Mowed pathways and the successional old field community are a result of a partially maintained power line right-of-way. The majority of the area appears to be mowed once a year. Predominant plant species include sedges, goldenrods, and blackberries.

Common vegetation species and the community structure of the site has an influence on wildlife occurrence on-site. Given the small size of the site (16 acres) and the proximity of the site to urban development (i.e., the City of Rensselaer), the site's use by wildlife species is limited. Wildlife observed included gray squirrel, raccoon tracks, and common songbirds.

10.2 Endangered Species Act Issues

Shortnose sturgeon is identified as a federally and state-listed species that could potentially seasonally occur near the site. Shortnose sturgeon habitat extends from the mouth of the Hudson River in New York City to the Federal Dam at Troy (upstream from the site). Coordination and consultation with NYSDEC and the National Marine Fisheries Service (NMFS) as part of the facility siting process and for developing the details of a biological assessment document for the Hudson River PCBs Superfund Site project has taken place. This consultation revealed that the portion of the river in the vicinity of the site is a known spawning area for shortnose sturgeon.

The biological assessment will address any potential impacts to shortnose sturgeon as a result of the construction and operation of the a sediment processing/transfer facility at this site. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the shortnose sturgeon.

Table 3.1-1 Summary of Activities, Hudson River PCBs Superfund Site

		Energy Park/Longe/ NYS Canal Corporation Site	Old Moreau Dredge Spoils Area/NYS Canal Corporation Site	Georgia Pacific/ NYS Canal Corporation Site	NYS Canal Corporation/ Allco/Leyerle Site	Bruno/Brickyard Associates/ Alonzo Site	State of New York/First Rensselaer/ Marine Management Site	OG Real Estate Site
Environmental Investigation	Environmental Sampling	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
	Temporary Well Installation	09/29/03 - 10/01/03	10/02/03	10/08/03	10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	10/07/03
	Temporary Well Sampling	10/16/03	10/14/03 - 10/16/03	10/13/03 - 10/14/03	10/15/03	10/15/03 - 10/16/03	10/10/03 - 10/15/03	10/15/03
Surveying		10/01/03 - 11/11/03	10/08/03 - 11/11/03	10/09/03 - 10/29/03	10/21/03 - 10/31/03	10/15/03 - 10/29/03	10/21/03 - 11/10/03	11/11/03 - 11/13/03
Geotechnical Investigation		09/29/03 - 10/01/03	NA	10/08/03	10/07/03 - 10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	NA
Utilities Assessment		09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
STAAR		10/06/03 - 10/16/03	10/13/03 - 10/30/03	10/11/03 - 10/28/03	10/23/03 - 11/13/03	10/17/03 - 11/05/03	10/25/03 - 11/14/03	11/15/03
Wetland Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Floodplain Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Coastal Management Areas		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Baseline Habitat Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Threatened and Endangered Species Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
IDW Disposal		TBD	TBD	TBD	TBD	TBD	TBD	TBD

Key:

IDW = Investigation-derived waste.
NYS = New York State.
PCBs = Polychlorinated biphenyls.
STAAR = Survey of Terrestrial Archaeological and Architectural Resources
TBD = To be determined.

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/ Screen I.D. (inches)	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
EPL	EPL-GP01	9/29/03	9/29/03	N	10/16/03	25.4	135.11	1	27.4	137.2	15.4-25.4	5-25.4	2-5	2.0
	EPL-GP02	9/29/03	9/29/03	N	10/16/03	25	137.91	1	27.4	140.42	15-25	4-25	2-4	2.4
	EPL-GP03	9/29/03	9/29/03	N	10/16/03	25.1	135.52	1	27.51	137.99	15.1-25.1	4-25.1	0.6-4	2.41
	EPL-GP04	10/1/03	10/1/03	N	10/16/03	25	129.47	1	27.3	131.79	15-25	4-25	2-4	2.3
	EPL-GP05	10/1/03	10/1/03	N	10/16/03	25	132	1	27.5	134.53	15-25	4-25	2-4	2.5
OM	OM-GP01	10/2/03	10/2/03	N	10/16/03	25	157.67	1	27.4	160.19	15-25	4-25	2-4	2.4
	OM-GP02	10/2/03	10/2/03	N	10/16/03	25.4	141.79	1	27.62	144.2	15.3-25.3	4-25.3	2-4	2.32
	OM-GP03	10/2/03	10/2/03	N	10/15/03	25	155.84	1	27.3	158.37	10-25	4-25	2-4	2.3
	OM-GP04	10/2/03	10/2/03	N	10/15/03	25	143.5	1	22.5	146	10-20	4-25	0-4	2.5
	OM-GP05	10/2/03	10/2/03	N	10/14/03	25	133.43	1	27.5	135.93	15-25	4-25	0-4	2.5
GPS	GPS-GP01	10/9/03	10/9/03	N	10/13/03	25	108.4	1	28.15	111.60	15-25	4-25	2-4	3.15
	GPS-GP02	10/8/03	10/8/03	N	10/14/03	9.3	108.68	1	11.8	111.19	4.3-9.3	3-9.3	0.5-3	2.5
	GPS-GP03	10/8/03	10/8/03	N	10/14/03	25.5	102.76	1	27.55	104.76	15.5-25.5	4-25.5	2-4	2.05
	GPS-GP04	10/8/03	10/8/03	N	10/14/03	25.7	112.02	1	28.2	114.48	15.7-257	4-25.7	2-4	2.5
	GPS-GP05	10/8/03	10/8/03	N	10/13/03	25	100.71	1	27.45	103.31	14.85-24.85	4-25	2-4	2.6
	GPS-GP06	10/9/03	10/9/03	N	10/14/03	25	110.76	1	17.5	113.24	5-15	3-15 [A]	1-3	2.5
	GPS-GP07	10/9/03	10/9/03	N	10/14/03	25	112.98	1	22.4	115.38	10-20	3-20[B]	0.5-3	2.4
	GPS-GP08	10/8/03	10/8/03	N	10/13/03	18.5	113.36	1	19.7	114.74	8.5-18.5	3-18.5	1-3	1.2
NCC	NCC-GP01	10/9/03	10/9/03	N	10/15/03	25	48.53	1	25.5	51.02	13-23	4-23[C]	2-4	2.5
	NCC-GP02	10/7/03	10/7/03	N	-	6.9	52.5	Dry hole - no well constructed						
	NCC-GP03	10/9/03	10/9/03	N	10/15/03	22.9	43.56	1	23.65	46.2	11-21	4-22.9	2-4	2.65
	NCC-GP04	10/3/03	10/3/03	N	-	2	65.89	Not accessible by rig, boring was hand-augered						
	NCC-GP05	10/7/03	10/7/03	N	-	11	51.52	Dry hole - no well constructed (same as boring NCC-GT01)						
BBA	BBA-GP01	10/10/03	10/10/03	N	10/15/03	25	131.88	1	18.6	134.39	6-16	4-16 [D]	0.5-4	2.6
	BBA-GP02	10/10/03	10/10/03	N	10/16/03	25	144.41	1	18.55	146.87	6-16	4-18 [E]	0.5-4	2.55
	BBA-GP03	10/9/03	10/9/03	N	10/15/03	18.3	76.45	2	19.62	77.77	3.8-13.8	2.8-18.3	0-2.8	1.32
	BBA-GP04	10/10/03	10/10/03	N	10/15/03	14	77.57	1	16.8	80.38	3.5-13.5	2-14	0.5-2	2.8

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
MM	MM-GP01	10/6/03	10/6/03	N	10/10/03	25	18.73	1	27.4	20.52	15-25	4-25	2-4	2.4
	MM-GP02	10/3/03	10/3/03	N	10/10/03	25	5.87	1	27.6	7.75	15-25	4-25	2-4	2.6
	MM-GP04	10/6/03	10/6/03	N	10/15/03	25	15.50	1	27.4	17.22	14.5-24.5	4-24.5	2-4	2.9
OG	OG-GP01	10/7/03	10/7/03	N	10/15/03	25	10.28	1	17.70	12.94	5.35-15.35	3-16 [E]	1-3	2.35
	OG-GP02	10/7/03	10/7/03	N	10/15/03	25.1	14.26	1	27.35	16.46	15.1-25.1	4-25.1	2-4	2.25
	OG-GP03	10/7/03	10/7/03	N	10/15/03	25	17.95	1	27.45	20.4	15-25	4-25	2-4	2.45

[A] Hole was allowed to collapse to 10.15 feet BGS.
[B] Hole was allowed to collapse to 20 feet BGS.
[C] Hole was allowed to collapse to 23 feet BGS.
[D] Hole was allowed to collapse to 18 feet BGS.
[E] Hole was allowed to collapse to 16 feet BGS.

Key:

AGS = Above ground surface.
AMSL = Above mean sea level.
BBA = Bruno/Brickyard Associates/Alonzo Site.
BGS = Below ground surface.
EPL = Energy Park/Longe/NYS Canal Corporation Site.
GP = Geoprobe temporary well location.
GPS = Georgia Pacific/NYS Canal Corporation Site.
I.D. = Inner diameter.
MM = State of New York/First Rensselaer/Marine Management Site
N = Northstar Drilling.
NCC = NYS Canal Corporation/Allco/Leyerle Site.
NYS = New York State.
OG = OG Real Estate.
OM = Old Moreau Dredge Spoils Area / NYS Canal Corporation Site.
PVC = Polyvinyl chloride.
TOIC = Top of inner casing.

Table 3.2-2 Groundwater and Surface Water Field Measurements
State of NY/ First Rensselaer/Marine Management Site

Sample ID	Date	pH (s.u.)	Temerature (°C)	Conductivity (mS/cm)	Turbidity (NTU)
Groundwater					
MM-GP01-GW	10/10/03	6.43	15.4	458.2	>1,000
MM-GP02-GW	10/10/03	6.53	18.7	249.2	>1,000
MM-GP04-GW	10/15/03	7.03	11.7	1,063	290
Surface Water					
MM-SW01	Not Sampled				

Key:

°C = Degrees Celsius.
GP = Boring location.
GW = Groundwater sample.
ID = Identification.
MM = State of NY/ First Rensselaer/Marine Management Site.
mS/cm = MicroSiemens per centimeter.
NTU = Nephelometric turbidity units.
NYS = New York State.
s.u. = Standard units.
SW = Surface water sample.
> = Greater than.

Table 3.2-3 Summary of Water Level Elevations
State of NY/First Rensselaer/Marine Management Site

Well/ Stream Gauge ID	Ground Elevation (ft AMSL)	Reference Elevation (ft AMSL)a	10/10/03		10/22/03		11/6/03	
			Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)
MM-GP01	18.73	20.52	19.64	0.88	19.07	1.45	17.85	2.67
MM-GP02	5.87	7.75	7.91	-0.16	6.62	1.13	4.77	2.98
MM-GP04	15.50	17.22	15.82	1.40	15.72	1.50	14.52	2.7
MM-SG01	NA	5.16	NM	NM	Dry	Dry	1.73	4.23

[a] Reference elevation is TOIC for borings and 3-foot mark on gauge for stream gauges.

Key:

AMSL = Above mean sea level.
ft = Feet.
GP = Boring location.
MM = State of NY/First Rensselaer/Marine Management Site.
NA = Not applicable.
NM = Not measured.
SG = Stream gauge location.
TOIC = Top of inner casing.

Table 3.2-4 State of New York/First Rensselaer/Marine Management Site Sample Listing, Hudson River PCBs Superfund Facility Siting

							CLP						Non-CLP										Geotechnical Analyses			
							Organics			Inorganic																
Media	Date	Sample Location	CLP Number	Matrix Code	Depth [A]	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.02)	Hexane Extractable Material (9071B	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98	Area of Interest
Surface Soil	10/08/03	MM-SS01	B1579	SO	0-2 in	N		X	X	X	X	X												Mounding with municipal type trash
	10/08/03	MM-SS01/D	B1565	SO	0-2 in	FD		X	X	X	X	X												Mounding with municipal type trash
	10/08/03	MM-SS02	B1580	SO	0-2 in	N		X	X	X	X	X												Surficial dumping area
	-	MM-SS03	-	SO	-	N																		Drums
	-	MM-SS04	-	SO	-	N																		Surficial dumping / Low area
	10/08/03	MM-SS05	B1583	SO	0-2 in	N		X	X	X	X	X												Surficial dumping
	-	MM-SS06	-	SO	-	N																		Ash pile by railroad tracks
	10/08/03	MM-SS07	B1585	SO	0-2 in	N		X	X	X	X	X												Composite sample of 3 locations (A, B, C) adjacent to railroad tracks (VOA portion is a discrete sample collected from aliquot location C)
	10/08/03	MM-SS08	B1586	SO	0-2 in	N	X	X	X	X	X	X	X				X							Near drum in building foundation
	10/08/03	MM-SS09	B1587	SO	0-2 in	N		X	X	X	X	X												Waterfront / Outfall
Surface Water	-	MM-SW01	-	SW	-	N																		Waterfront / Outfall
Sediment	-	MM-SE01	-	SE	-	N																		Low area
	-	MM-SE02	-	SE	-	N																		Near mounding with municipal type trash
Geoprobe	10/06/03	MM-GP01-SE	B1548	SO	8-12	N	X	X	X	X	X	X												Downgradient
Borehole	10/03/03	MM-GP02-SE	B1549	SO	6-8	N	X	X	X	X	X	X												Downgradient
Subsurface Soil	-	MM-GP03-SE	-	SO	-	N	X	X	X	X	X	X												Upgradient
	10/06/03	MM-GP04-SE	B1551	SO	8-10	N	X	X	X	X	X	X												Near mounding with municipal type trash
Geoprobe	10/10/03	MM-GP01-GW	B1588	GW	15-25	N	X	X	X	X	X													Downgradient
Temporary Well	10/10/03	MM-GP02-GW	B1589	GW	15-25	N	X	X	X	X	X													Downgradient
Groundwater	-	MM-GP03-GW	-	GW	-	N																		Upgradient
	10/10/03	MM-GP04-GW	B1591	GW	14.5-24.5	N	X	X	X	X	X													

Key at the end of Table

Table 3.2-4 State of New York/First Rensselaer/Marine Management Site Sample Listing, Hudson River PCBs Superfund Facility Siting

							CLP										Non-CLP					Geotechnical Analyses			
							Organics				Inorganic														
Media	Date	Sample Location	CLP Number	Matrix Code	Depth [A]	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.02)	Hexane Extractable Material (9071B	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98	Area of Interest
Geotechnical Boring Subsurface Soil	10/06/03	MM-GT01-SI	-	SO	2-4	N															X	X	X	Rail yard
	10/03/03	MM-GT02-SI	-	SO	0-26 [B]	N															X	X	X	Facility
	10/06/03	MM-GT03-SI	-	SO	0-26 [B]	N															X	X	X	Rail yard
IDW	TBD	MM-WA01	-	WA	-	N												X	X	X				General
	TBD	MM-WW01	-	WW	-	N												X	X	X				General

[A] Depth in feet below ground surface unless otherwise specified.

[B] Continuous sampling for Moisture Content analysis. The 14-16 and 4-6 foot BGS depth intervals were used for the Particle Size and Atterberg Limits analyses for GPS-GT02 and GPS-GT03, respectively.

Key:

CLP = Contract Laboratory Protocol
/D = duplicate sample
FD = field duplicate (Type)
GP = Geoprobe boring location
GT = geotechnical boring location
GW = groundwater sample
IDW = investigation-derived waste
in = inch
M = matrix spike/matrix spike duplicate (Type)
MM = State of New York/First Rensselaer/Marine Management site
N = original sample
PCB = polychl polychlorinated biphenyl
QA = quality quality assurance
QC = quality quality control
SB = subsurface soil
SE = sediment sample
SO = soil sample
SS = surface soil
SVOCs = semivolatile organic compounds
SW = surface water
TBD = to be determined
TCL = target compound list
TCLP = toxicity characteristic leachate procedure
TOC = total organic carbon
VOCs = volatile organic compounds
WA = IDW solid waste
WW = IDW waste water

Key at the end of Table

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	MM-SS01 10/8/2003 0 - 2 in	MM-SS01/D 10/8/2003 0 - 2 in	MM-SS02 10/8/2003 0 - 2 in	MM-SS05 10/8/2003 0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)							
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		- -	- -	- -	- -
1,1-Dichloroethene	400	NA		- -	- -	- -	- -
1,2,4-Trichlorobenzene	3400	NA		- -	- -	- -	- -
Carbon Disulfide	2700	NA		- -	- -	- -	- -
Carbon Tetrachloride	600	NA		- -	- -	- -	- -
Cyclohexane	NA	NA		- -	- -	- -	- -
Dichlorodifluoromethane	NA	NA		- -	- -	- -	- -
Ethylbenzene	5500	NA		- -	- -	- -	- -
Isopropylbenzene	NA	NA		- -	- -	- -	- -
Methylcyclohexane	NA	NA		- -	- -	- -	- -
Styrene	NA	NA		- -	- -	- -	- -
Tetrachloroethene	1400	NA		- -	- -	- -	- -
Trans-1,2-Dichloroethene	300	NA		- -	- -	- -	- -
Trichloroethene	700	NA		- -	- -	- -	- -
Trichlorofluoromethane	NA	NA		- -	- -	- -	- -
Vinyl Chloride	200	NA		- -	- -	- -	- -
Xylenes (Total)	1200	NA		- -	- -	- -	- -
TCL Semivolatile Organic Compounds (µg/Kg)							
2-Methylnaphthalene	36400	NA		410 U	410 U	610 U	120 J
4-Chloro-3-methylphenol	240 or MDL	NA		410 U	120 J	610 U	450 U
4-Nitrophenol	100 or MDL	NA		1000 UJ	**440 J**	1500 UJ	1100 UJ
Acenaphthylene	41000	NA		85 J	130 J	610 U	450 U
Acetophenone	NA	NA		410 U	410 U	610 U	1000
Anthracene	50000	NA		210 J	310 J	610 U	150 J
Benzo(a)anthracene	224 or MDL	NA		**740**	**1100**	**260 J**	**510**
Benzo(a)pyrene	61 or MDL	NA		**840**	**1100**	**270 J**	**460**
Benzo(b)fluoranthene	1100	NA		910	**2300**	370 J	720
Benzo(g,h,i)perylene	50000	NA		420	700	200 J	210 J
Benzo(k)fluoranthene	1100	NA		890	410 U	280 J	470
Bis(2-ethylhexyl)phthalate	50000	NA		87 J	210 J	290 J	740
Carbazole	NA	NA		130 J	160 J	610 UJ	450 UJ
Chrysene	400	NA		**880**	**1300**	350 J	**720**
Dibenzo(a,h)anthracene	14 or MDL	NA		**300 J**	**480**	610 U	**150 J**
Dibenzofuran	6200	NA		410 U	410 U	610 U	450 U
Fluoranthene	50000	NA		1300	1900	560 J	1100
Fluorene	50000	NA		410 U	84 J	610 U	450 U
Indeno(1,2,3-cd)pyrene	3200	NA		700	1100	230 J	330 J
Naphthalene	13000	NA		410 U	410 U	610 U	95 J
Phenanthrene	50000	NA		830	1300	240 J	710
Pyrene	50000	NA		1300	2000	500 J	980

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	MM-SS01 10/8/2003 0 - 2 in	MM-SS01/D 10/8/2003 0 - 2 in	MM-SS02 10/8/2003 0 - 2 in	MM-SS05 10/8/2003 0 - 2 in
TCL Pesticide and PCBs (µg/Kg)							
4,4'-DDD	2900	NA		4.1 U	4.1 U	6.1 U	15 J
4,4'-DDE	2100	NA		5.5	7.4	12	28
4,4'-DDT	2100	NA		24	32	29	360
Dieldrin	44	NA		4.1 U	4.1 U	6.1 U	7.2
Endrin Aldehyde	NA	NA		3.9 J	4.5 JN	6.1 U	4.5 U
gamma-Chlordane	540	NA		2.1 U	2.1 U	3.1 U	1.2 J
Methoxychlor	NA	NA		21 U	21 U	31 U	44 J
TAL Metals and Mercury (mg/Kg)							
Aluminum	SB	NA		5960	6380	6530	6230
Antimony	SB	NA		2.1 B	4.4 B	4.2 B	3.4 B
Arsenic	7.5 or SB	3-12 (NYS BG)		6.3	9.4	15.2	12.1
Barium	300	15-600		231	269	886	7100
Beryllium	0.16 or SB	0-1.75		0.38 B	0.43 B	0.43 B	0.28 B
Cadmium	1 or SB	0.1-1		1.1 B	1.2 B	2.7	5.2
Calcium	SB	130-35000 (NYS BG)		12900	12400	20400	20700
Chromium	10 or SB	1.5-40 (NYS BG)		28	23.6	41.3	25
Cobalt	30 or SB	2.5-60 (NYS BG)		6.5 B	7.5 B	9.4 B	13.8 B
Copper	25 or SB	1-50		54.1	59.7	153	50.3
Iron	2000 or SB	2000-550000		17200	19100	33200	15200
Lead	SB or 200 - 500	200-500		499	773	1180	8610
Magnesium	SB	100-5000		4520	4590	4330	5160
Manganese	NA	50-5000		353	404	480	180
Nickel	13 or SB	0.5-25		40.3	45.1	31.4	27.8
Potassium	SB	8500-43000 (NYS BG)		954 B	1070 B	1100 B	751 B
Selenium	2 or SB	0.1-3.9		1.3	1.7	2.6	2.4
Silver	SB	NA		0.97 B	1.2 B	1 B	0.45 U
Sodium	SB	6000-8000		135 U	150 U	194 U	167 B
Vanadium	150 or SB	1-300		20.9	24.3	32.5	19.6
Zinc	20 or SB	9-50		481	531	1350	7700
Mercury	0.1	0.001-0.2		0.52	0.56	0.72	0.37
Total Cyanide (mg/Kg)							
Cyanide	NA	NA		0.35	0.2 U	0.21 U	0.18 U

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	MM-SS07 10/8/2003 0 - 2 in	MM-SS08 10/8/2003 0 - 2 in	MM-SS09 10/8/2003 0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		- -	6 J	- -
1,1-Dichloroethene	400	NA		- -	2 J	- -
1,2,4-Trichlorobenzene	3400	NA		- -	3 J	- -
Carbon Disulfide	2700	NA		- -	3 J	- -
Carbon Tetrachloride	600	NA		- -	1 J	- -
Cyclohexane	NA	NA		- -	2 J	- -
Dichlorodifluoromethane	NA	NA		- -	6 J	- -
Ethylbenzene	5500	NA		- -	2 J	- -
Isopropylbenzene	NA	NA		- -	1 J	- -
Methylcyclohexane	NA	NA		- -	3 J	- -
Styrene	NA	NA		- -	1 J	- -
Tetrachloroethene	1400	NA		- -	4 J	- -
Trans-1,2-Dichloroethene	300	NA		- -	1 J	- -
Trichloroethene	700	NA		- -	2 J	- -
Trichlorofluoromethane	NA	NA		- -	3 J	- -
Vinyl Chloride	200	NA		- -	1 J	- -
Xylenes (Total)	1200	NA		- -	5 J	- -
TCL Semivolatile Organic Compounds (µg/Kg)						
2-Methylnaphthalene	36400	NA		410 U	180 J	620 U
4-Chloro-3-methylphenol	240 or MDL	NA		410 U	470 U	620 U
4-Nitrophenol	100 or MDL	NA		1000 UJ	1200 UJ	1600 UJ
Acenaphthylene	41000	NA		410 U	740	620 U
Acetophenone	NA	NA		410 U	470 U	620 U
Anthracene	50000	NA		180 J	700	620 U
Benzo(a)anthracene	224 or MDL	NA		**570**	**1800**	620 U
Benzo(a)pyrene	61 or MDL	NA		**490**	**1800**	620 U
Benzo(b)fluoranthene	1100	NA		660	**2600**	620 U
Benzo(g,h,i)perylene	50000	NA		230 J	890	620 UJ
Benzo(k)fluoranthene	1100	NA		440	**1500**	620 U
Bis(2-ethylhexyl)phthalate	50000	NA		150 J	98 J	620 U
Carbazole	NA	NA		140 J	150 J	620 UJ
Chrysene	400	NA		**690**	**2100**	620 U
Dibenzo(a,h)anthracene	14 or MDL	NA		**150 J**	**640**	620 U
Dibenzofuran	6200	NA		410 U	100 J	620 U
Fluoranthene	50000	NA		1400	3500	620 U
Fluorene	50000	NA		410 U	100 J	620 U
Indeno(1,2,3-cd)pyrene	3200	NA		350 J	1600	620 U
Naphthalene	13000	NA		410 U	140 J	620 U
Phenanthrene	50000	NA		840	1500	620 U
Pyrene	50000	NA		1100	2800	620 U

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	MM-SS07 10/8/2003 0 - 2 in	MM-SS08 10/8/2003 0 - 2 in	MM-SS09 10/8/2003 0 - 2 in
TCL Pesticide and PCBs (µg/Kg)						
4,4'-DDD	2900	NA		4.1 U	4.7 U	6.2 U
4,4'-DDE	2100	NA		4.1 U	4.7 U	6.2 U
4,4'-DDT	2100	NA		4.1 U	4.7 U	6.2 U
Dieldrin	44	NA		4.1 U	4.7 U	6.2 U
Endrin Aldehyde	NA	NA		4.1 U	4.7 U	6.2 U
gamma-Chlordane	540	NA		2.1 U	2.4 U	3.2 U
Methoxychlor	NA	NA		21 U	44 R	32 U
TAL Metals and Mercury (mg/Kg)						
Aluminum	SB	NA		14800	5530	8500
Antimony	SB	NA		1.8 U	2.1 U	3.4 B
Arsenic	7.5 or SB	3-12 (NYS BG)		10.5	41.8	8.3
Barium	300	15-600		141	78.1	3520
Beryllium	0.16 or SB	0-1.75		0.83 B	0.4 B	0.34 B
Cadmium	1 or SB	0.1-1		0.13 U	0.15 U	25.7
Calcium	SB	130-35000 (NYS BG)		24800	17700	113000
Chromium	10 or SB	1.5-40 (NYS BG)		20	15.2	29.5
Cobalt	30 or SB	2.5-60 (NYS BG)		16.5	8.2 B	8.5 B
Copper	25 or SB	1-50		58	77.2	1120
Iron	2000 or SB	2000-550000		32900	20800	15000
Lead	SB or 200 - 500	200-500		48.9	185	940
Magnesium	SB	100-5000		9400	6040	11300
Manganese	NA	50-5000		702	396	469
Nickel	13 or SB	0.5-25		33.1	21	29.7
Potassium	SB	8500-43000 (NYS BG)		2770	949 B	1860
Selenium	2 or SB	0.1-3.9		0.71 B	1.4 B	0.68 U
Silver	SB	NA		0.38 U	0.44 U	0.53 U
Sodium	SB	6000-8000		137 U	161 U	346 B
Vanadium	150 or SB	1-300		31.4	20.5	107
Zinc	20 or SB	9-50		109	183	4020
Mercury	0.1	0.001-0.2		0.06 U	0.3	0.21 J
Total Cyanide (mg/Kg)						
Cyanide	NA	NA		0.15 U	0.27	0.35

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
BG = Background.
/D = Duplicate sample.
in = Inches.
J = The reported value is an estimated quantity.
JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
MDL = Method detection Limit
mg/Kg = Milligrams per kilogram.
MM = State of New York/First Rensselaer/Marine Management Site.
NA = Not applicable/available.
NYS = New York State.
NYSDEC = New York State Department of Environmental Conservation.
PCB = Polychlorinated biphenyl.
R = The data is unusable.
SB = Site background.
SS = Surface soil sample.
TAL = Target Analyte List.
TCL = Target Compound List.
U = The analyte was analyzed for but not detected at the value reported.
UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
µg/Kg = Micrograms per kilogram.
- = Sample was not analyzed for this parameter.

Table 3.3-2
Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: MM-GP01-SB Date: 10/6/2003 Depth: 8 - 12 ft	MM-GP02-SB 10/3/2003 6 - 8 ft	MM-GP04-SB 10/6/2003 8 - 10 ft
TCL Volatile Organic Compounds (µg/Kg)					
Carbon Disulfide	2700	NA	17 U	10 U	1 J
Cyclohexane	NA	NA	17 U	10 U	3 J
Ethylbenzene	5500	NA	17 U	10 U	14 R
Methylcyclohexane	NA	NA	17 U	10 U	3 J
Toluene	1500	NA	1 J	10 U	6 J
Xylenes (Total)	1200	NA	17 U	10 U	4 J
TCL Semivolatile Organic Compounds (µg/Kg)					
Anthracene	50000	NA	380 U	130 J	140 J
Benzo(a)anthracene	224 or MDL	NA	190 J	**300 J**	**480**
Benzo(a)pyrene	61 or MDL	NA	**280 J**	**350 J**	**490**
Benzo(b)fluoranthene	1100	NA	250 J	180 J	370 J
Benzo(g,h,i)perylene	50000	NA	93 J	110 J	160 J
Benzo(k)fluoranthene	1100	NA	300 J	310 J	490
Chrysene	400	NA	210 J	280 J	**480**
Dibenzo(a,h)anthracene	14 or MDL	NA	**88 J**	390 U	**120 J**
Fluoranthene	50000	NA	250 J	750	800
Indeno(1,2,3-cd)pyrene	3200	NA	230 J	210 J	330 J
Phenanthrene	50000	NA	380 U	620	360 J
Pyrene	50000	NA	250 J	900	790
TCL Pesticide and PCBs (µg/Kg)					
4,4'-DDE	2100	NA	4.6 J	3.9 U	4.2 U
4,4'-DDT	2100	NA	13 J	3.9 U	4.2 U
TAL Metals and Mercury (mg/Kg)					
Aluminum	SB	NA	6460	4170	5620
Antimony	SB	NA	4.8 B	1.7 U	1.7 U
Arsenic	7.5 or SB	3-12 (NYS BG)	18.1	1 U	4.3 J
Barium	300	15-600	978	21.2 B	37.9 B
Beryllium	0.16 or SB	0-1.75	0.5 B	0.21 B	0.31 B
Cadmium	1 or SB	0.1-1	3.8	0.12 U	0.11 U
Calcium	SB	130-35000 (NYS BG)	13600	1220	8330
Chromium	10 or SB	1.5-40 (NYS BG)	82.7	5.8	12
Cobalt	30 or SB	2.5-60 (NYS BG)	10.6 B	4.2 B	5.8 B
Copper	25 or SB	1-50	151	9.3 J	29.4
Iron	2000 or SB	2000-550000	44200	10900	22600
Lead	SB or 200 - 500	200-500	1380	11.5	39.5
Magnesium	SB	100-5000	3050	2240	6120
Manganese	NA	50-5000	758 J	150	189 J
Nickel	13 or SB	0.5-25	33.4	9.5	13.6
Potassium	SB	8500-43000 (NYS BG)	978 B	377 B	658 B
Silver	SB	NA	0.62 B	0.35 U	0.34 U
Sodium	SB	6000-8000	445 B	128 U	126 U
Vanadium	150 or SB	1-300	23.8	6.4 B	11 B
Zinc	20 or SB	9-50	1880	37.1	166
Mercury	0.1	0.001-0.2	0.79	0.06 U	0.06 BJ
Total Cyanide (mg/Kg)					
Cyanide	NA	NA	1	0.14 U	0.22

Table 3.3-2
Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the State of New York/First Rensselaer/Marine Management Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

B =	The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
BG =	Background.
/D =	Duplicate sample.
ft =	Feet.
J =	The reported value is an estimated quantity.
JN =	The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
MDL =	Method detection Limit
mg/Kg =	Milligrams per kilogram.
MM =	State of New York/First Rensselaer/Marine Management Site.
NA =	Not applicable/available.
NYS =	New York State.
NYSDEC =	New York State Department of Environmental Conservation.
PCB =	Polychlorinated biphenyl.
R =	The data is unusable.
SB =	Site background.
-SB =	Subsurface soil sample.
TAL =	Target Analyte List.
TCL =	Target Compound List.
U =	The analyte was analyzed for but not detected at the value reported.
UJ =	The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
µg/Kg =	Micrograms per kilogram.
300 J	Shaded cells with bold exceed the NYSDEC screening value.

Table 3.3-3
Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the State of New York/First Rensselaer/Marine Management Site

Analyte	NYSDEC CLASS GA (1)	Sample ID: / Date: EPA MCLs	MM-GP01-GW 10/10/2003	MM-GP02-GW 10/10/2003	MM-GP04-GW 10/15/2003
TCL Volatile Organic Compounds (µg/L)					
Tetrachloroethene	5	5	2 J	10 U	10 U
Trichloroethene	5	5	4 J	10 U	10 U
TCL Semivolatile Organic Compounds (µg/L)					
Caprolactam	NA	NA	390	10 U	6 J
TAL Metals and Mercury (µg/L)					
Aluminum	NA	50-200 (s)	56.8 B	762	54.7 B
Barium	1000	2000	28.7 B	64.4 B	72.9 B
Beryllium	3 (g)	4	0.1 U	0.23 B	0.1 U
Calcium	NA	NA	64400	29200	82600
Cobalt	NA	NA	4.7 B	6.5 B	4.9 B
Copper	200	1300 (a)	1 U	3.3 B	2 B
Iron	300 (3)	300 (s)	27.9 U	5710	431
Lead	25	15 (a)	2.2 U	7.5	2.2 U
Magnesium	35000 (g)	NA	11300	5290	24400
Manganese	300 (3)	50 (s)	66.4 J	316 J	4120 J
Potassium	NA	NA	3600 B	1090 B	1190 B
Sodium	20000	NA	14400	12400	5160
Vanadium	NA	NA	0.98 B	3.8 B	0.9 U
Zinc	2000 (g)	5000 (s)	28.4 J	41.2 J	30.2 J

Source: Ecology and Environment, Inc., 2004

Table 3.3-3
Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the State of New York/First Rensselaer/Marine Management Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

(2) EPA National Primary and Secondary Drinking Water Standards, 2002.

(3) Screening value is for sum of Iron and Manganese is 500 µg/L.

(a) Action level is used in lieu of MCL.

(g) Guidance value used.

(s) Secondary standard used.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

/D = Duplicate sample.

EPA = Environmental Protection Agency.

GP = Boring.

GW = Groundwater sample.

J = The reported value is an estimated quantity.

MCL = Maximum Contaminant Level.

mg/L = Milligrams per liter.

MM = State of New York/First Rensselaer/Marine Management Site.

NA = Not applicable/available.

NYSDEC = New York State Department of Environmental Conservation.

TAL = Target Analyte List.

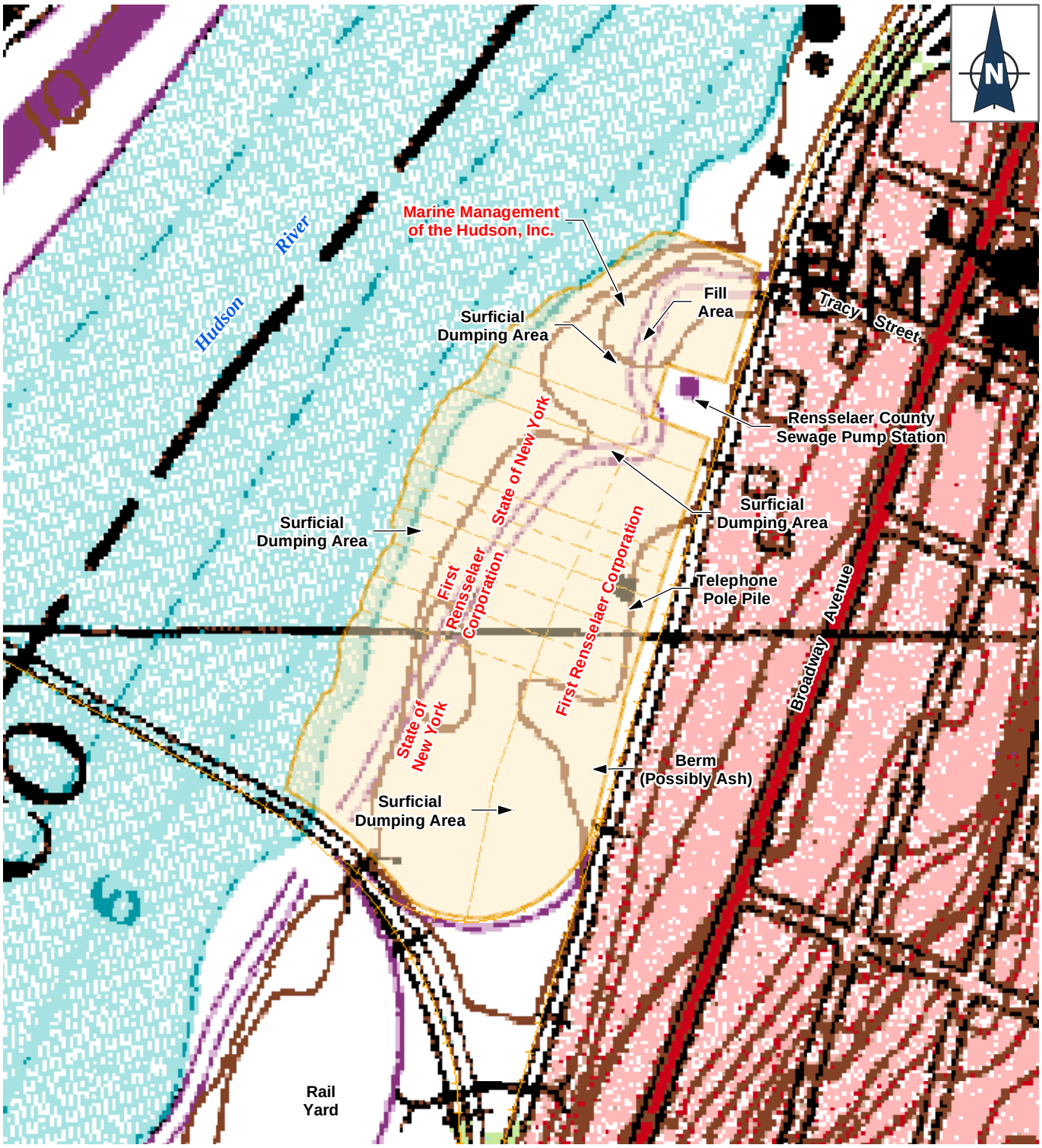
TCL = Target Compound List.

U = The analyte was analyzed for but not detected at the value reported.

µg/L = Micrograms per liter.

Source: Ecology and Environment, Inc., 2004

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

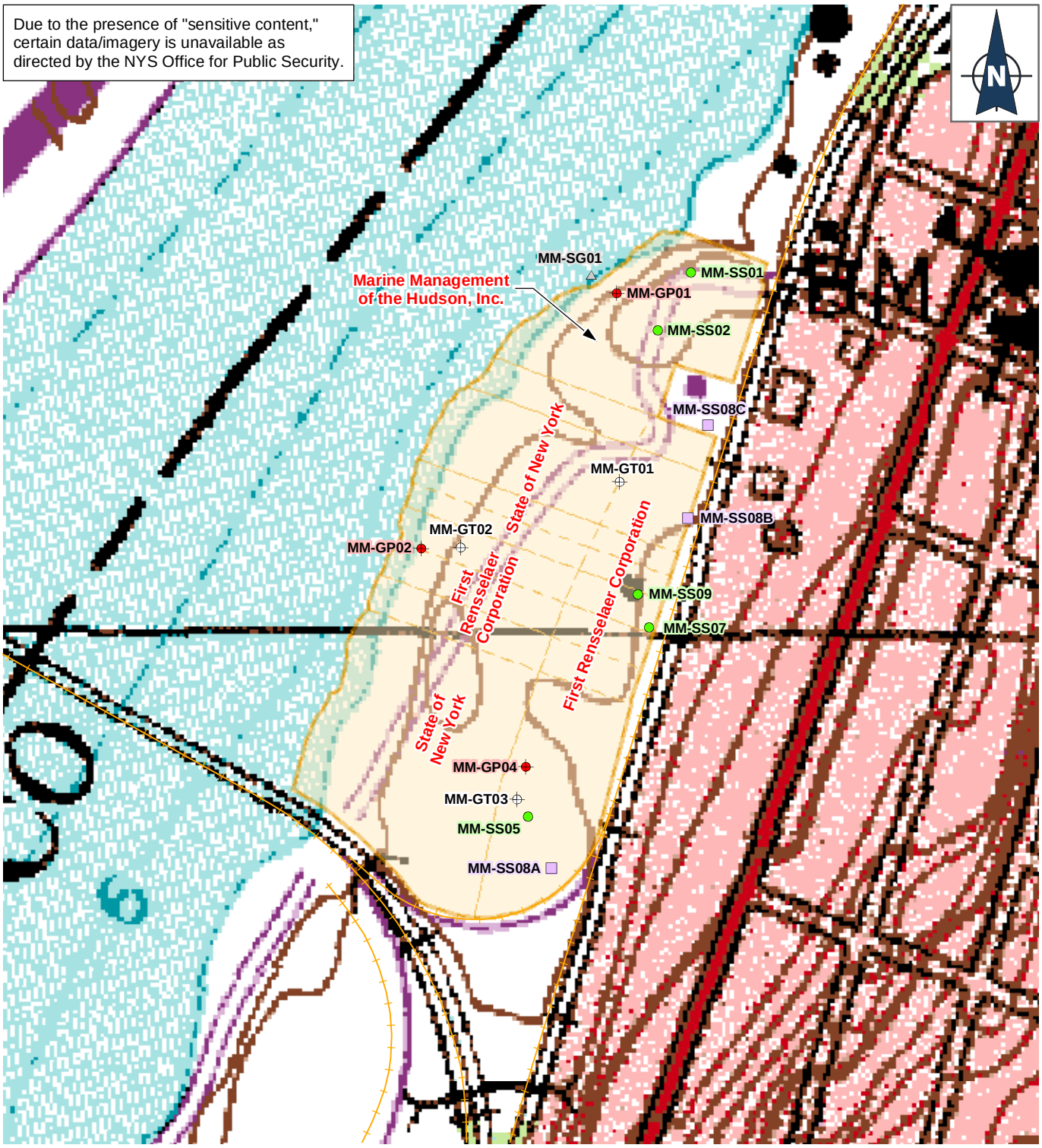
Hudson River PCBs SUPERFUND SITE

Figure 2-1
Key Site Features
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

02:001515.HR03.08:04 - 12/17/03
L:\Buffalo\Hudson_River\Maps\Mxd\FCS_Factsheets\Key_Site_Features\MM_Key_Features.mxd - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

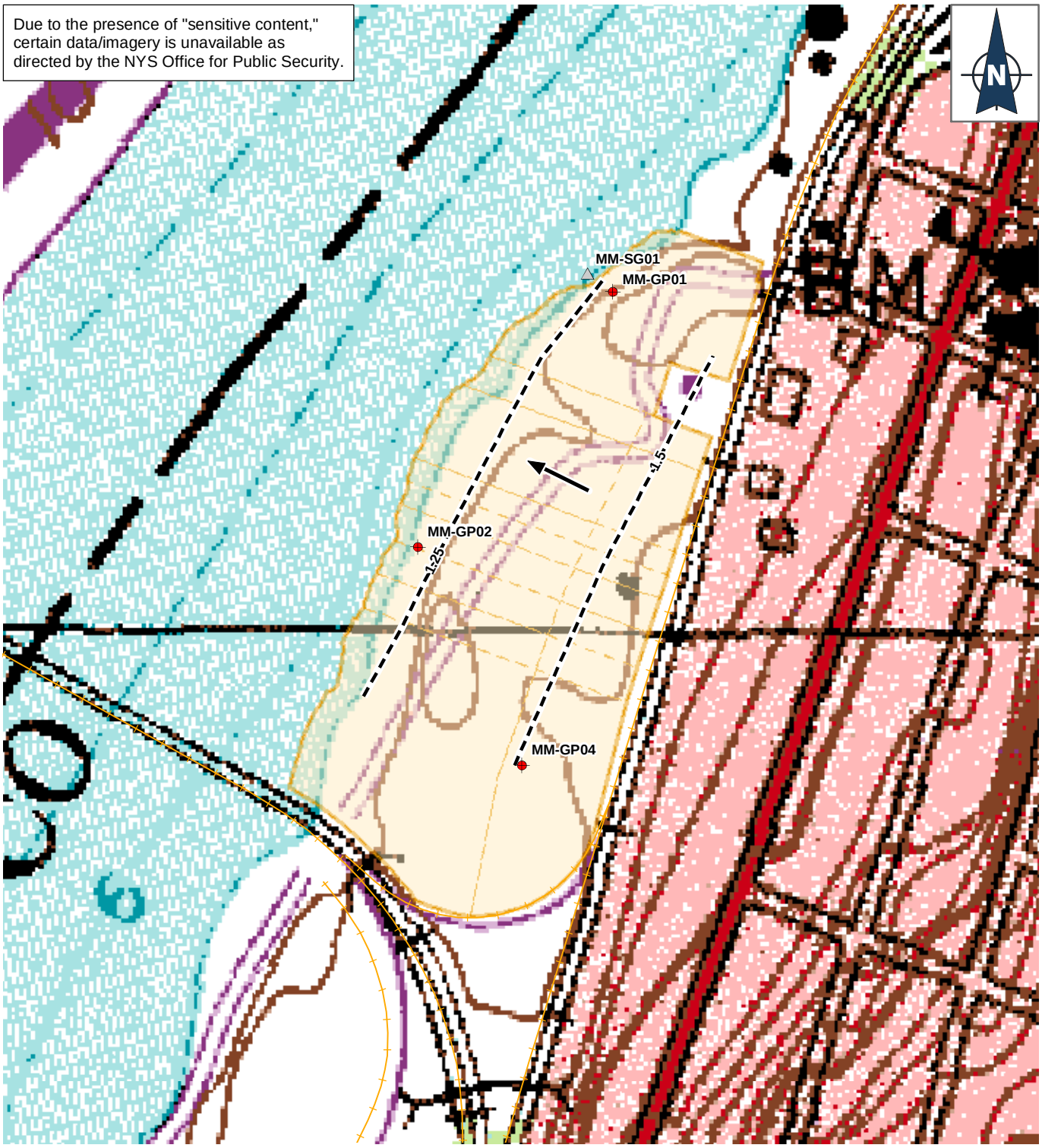
Hudson River PCBs SUPERFUND SITE

Figure 3-1
Sample Locations
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

02:001515.HR03.08.04 - 12/16/03
L:\Buffalo\Hudson_River\Maps\Mxd\FinalCandidateSites\Samples\First_Rens_Samples.MXD - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Groundwater Contour
- Temporary Well
- Stream Gauge
- Railroad
- Potential Site Boundary
- Direction of Groundwater Flow

(Note: The Hudson River is tidally influenced at this location, therefore groundwater flow direction may fluctuate near the shoreline.)

Water Level Elevations Measured on 10/22/2003
0.25 ft. Contour Interval

Hudson River
PCBs SUPERFUND SITE

Figure 3-2
Overburden Groundwater Contour Map
State of New York / First Rensselaer / Marine Management

500 250 0 500
Feet

02.001515.HR03.08.04 - 04/22/04
L:\Buffalo\Hudson_River\Maps\Mxd\FinalCandidateSites\Samples\First_Rens_Groundwater.MXD - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;

LEGEND

T Backhoe Trench Locations

Archaeological Testing Method

- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- Potential Site Boundary

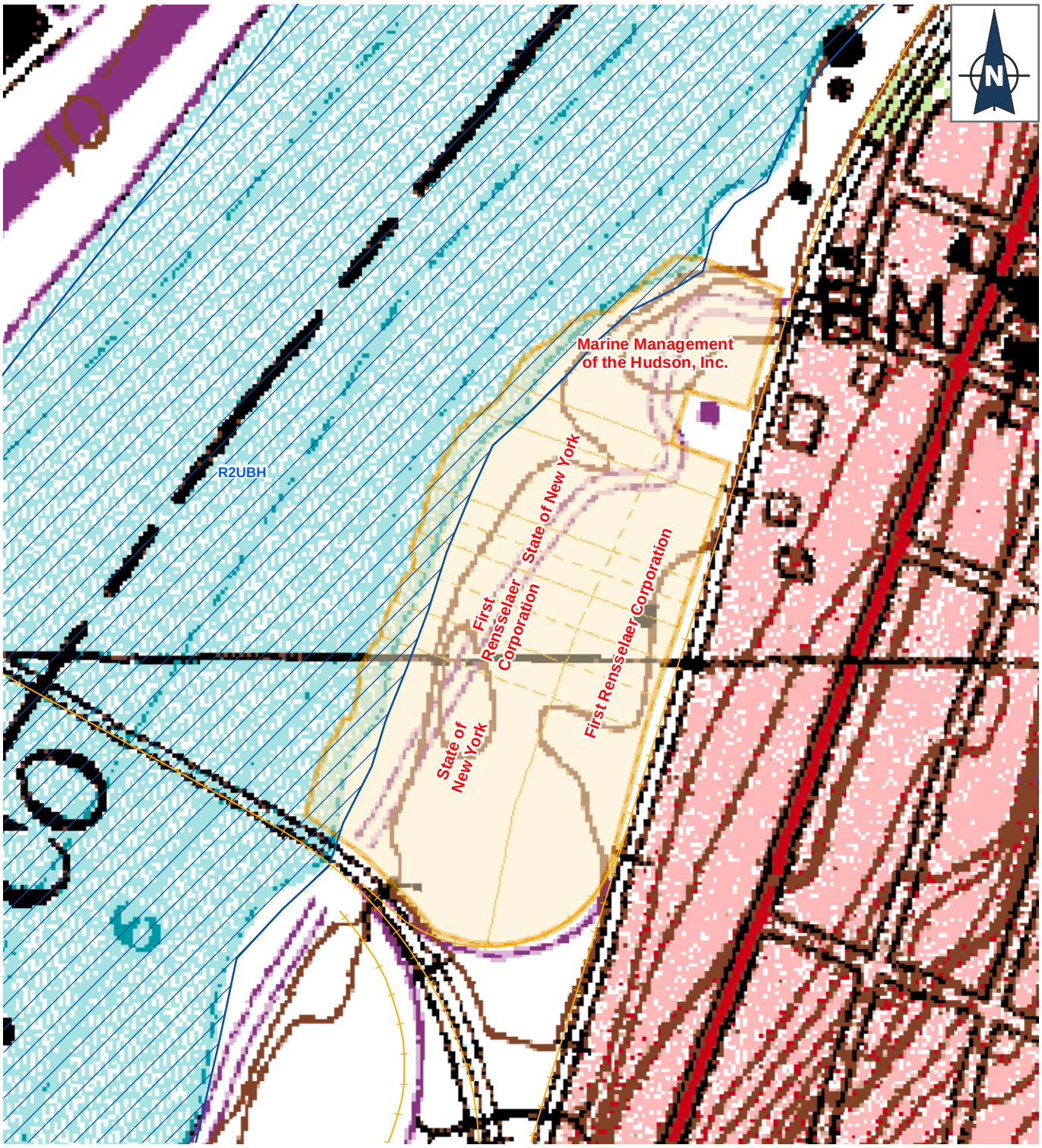
Hudson River PCBs SUPERFUND SITE

Figure 6-1
Field Sampling Areas
Phase I B Cultural Resources Investigation
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

02.001515.HR03.08.04 - 12/19/03
L:\Buffalo\Hudson_River\Maps\MxdFinalCandidateSites\Archaeology\First_Rens_Arch.MXD - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Wetlands
- US Fish and Wildlife Wetlands

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

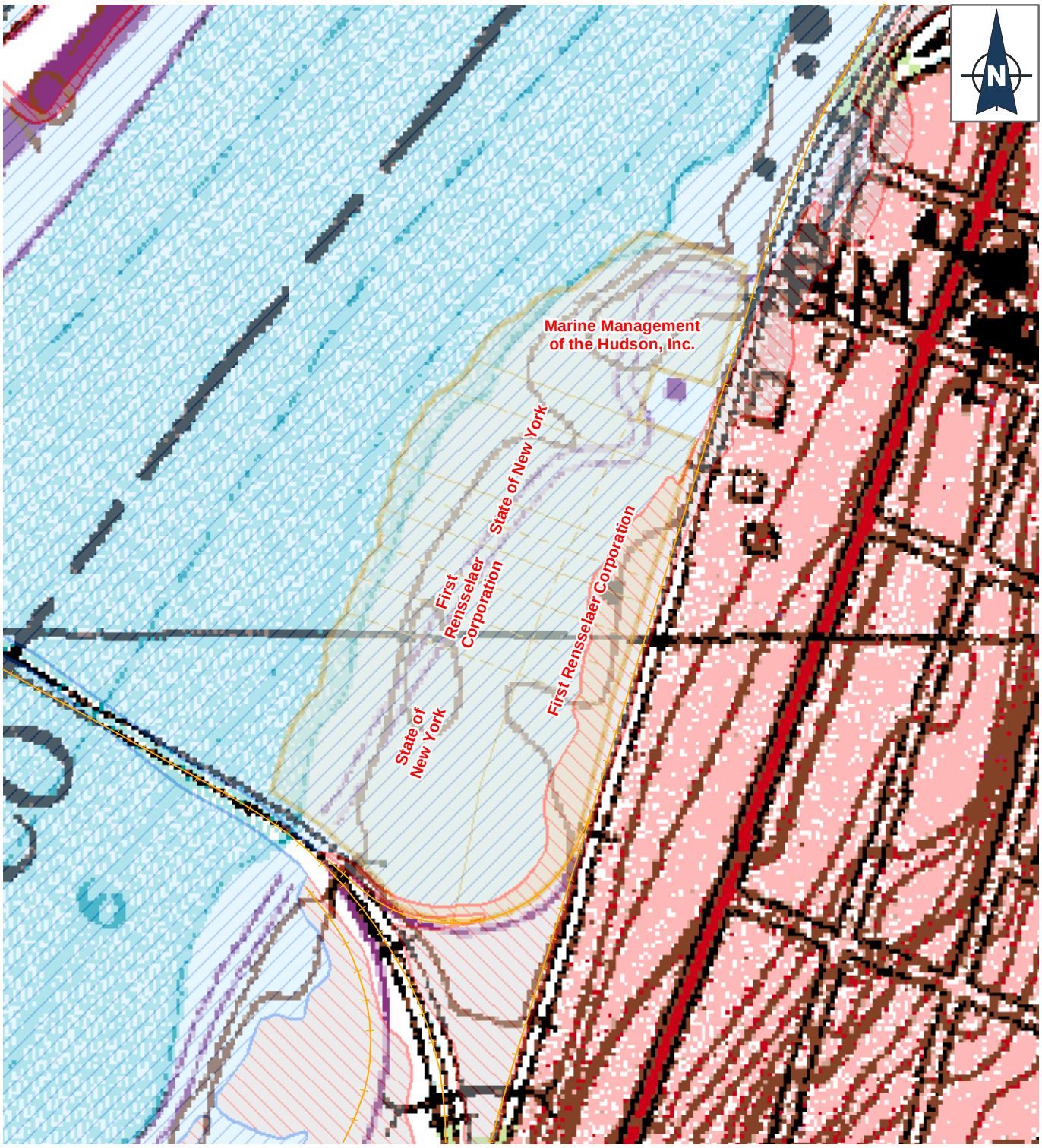
Hudson River PCBs SUPERFUND SITE

Figure 7-1
Wetland Locations
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

02:001515.HR03.08.04 - 12/11/03
L:\Buffalo\Hudson_River\Maps\Mxd\FinalCandidateSites\Wetlands\First_Rens_Wetlands.MXD - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

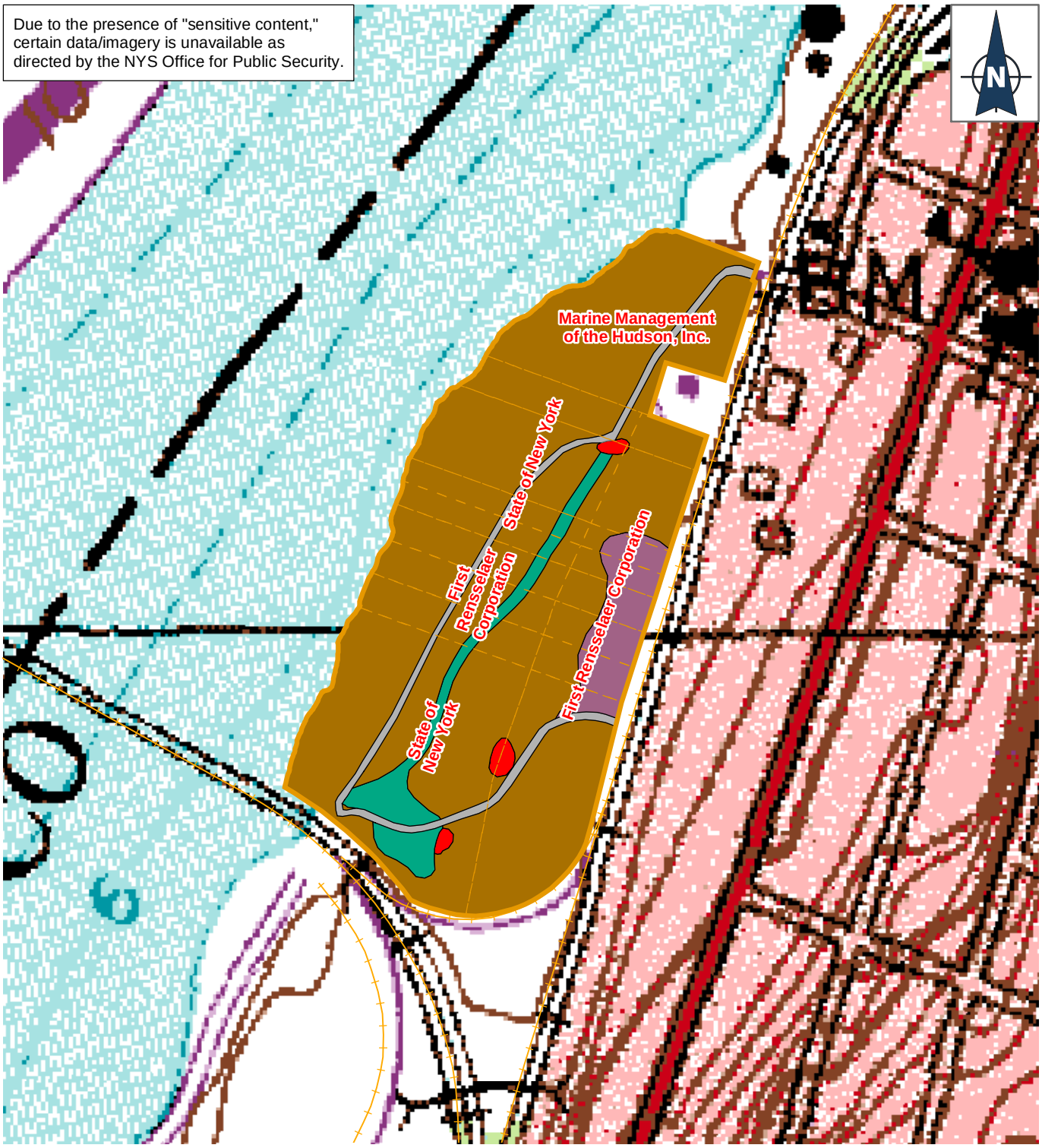
Hudson River PCBs SUPERFUND SITE

Figure 8-1
FEMA Floodplain Mapping
State of New York / First Rensselaer / Marine Management

500 250 0 500
Feet

02:001515.HR03.08.03 - 12/01/03
L:\Buffalo\Hudson_River\Maps\Mxd\FinalCandidateSites\Floodplain\First_Rens_Floodplain.MXD - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Successional Northern Hardwoods
- Appalachian Oak-Hickory Forest
- Mowed Pathway / Successional Old Field
- Landfill / Dump

Hudson River PCBs SUPERFUND SITE

Figure 10-1
Site Ecological Communities
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

02.001515.HR03.08.04 - 12/19/03
L:\Buffalo\Hudson_River\Maps\Mxd\FCS_Factsheets\Habitat\First_Rens_Habitat.MXD - GIS