

4.11 Hazardous Waste

4.11.1 Methodology

Geotechnical and environmental work tasks were conducted to prepare the Project hazardous waste analysis included in this section. The geotechnical work included on site engineering oversight during the installation of geotechnical soil borings. The environmental work included the tasks of environmental historic data review; and limited site investigation including soil, groundwater, sediment and surface water sampling to determine the presence/absence of contamination in these media. The geotechnical and environmental investigations were isolated to the railroad alignment and were directed by the NJSEA-identified soil boring locations. Sitewide investigation of Areas of Concern (AOC's) was not included in this investigation, nor was administrative applicability/status (e.g. ISRA), or the investigation of open/ongoing NJDEP identified active environmental cases.

The detailed geotechnical services included on site engineering oversight for the installation of soil geotechnical soil borings, field logistical management, and the generation of soil boring logs documenting the subsurface characteristics observed as part of the drilling operations.

The environmental operations completed for the project included two distinct tasks including an environmental historic data review and a limited site investigation. The historic data review was completed to aid in determining the environmental history and/or development of the region specifically as it applied to the specific proposed alignment of the proposed railroad, and to aid in the preparation of a site specific Health and Safety Plan (HASP) for the drilling/investigative operations. The limited site investigation for the environmental services was completed to provide a preliminary characterization of the existing soil, groundwater, sediment and surface water conditions, specifically as they apply to future construction operations.

The environmental historic data review identified the site to consist of three distinct areas: Area 1 - the former Universal Oil site (Honeywell), which is currently listed as a Superfund site with the United States Environmental Protection Agency (USEPA) and undergoing investigative and remedial activities under supervision by the USEPA and NJDEP; Area 2 - Berry's Creek, which is known to contain contaminants as a result of discharges from various locations in the watershed; and Area 3 - the NJSEA parcel, which is known to have been filled for development utilizing dredged sand material from Ambrose Channel off of New York Harbor.

Detailed background information regarding the hazardous waste analysis can be found in the *Site Investigation Report and Appendices for the Meadowlands Railroad and Railway Improvement Project (PMK Group, 2005)*.

4.11.2 Existing Conditions

The geotechnical investigations included utilizing mud rotary drilling methodologies, generally to the bedrock interface. The environmental Limited Site Investigation (LSI) was completed concurrently with the geotechnical soil boring installations, and utilized either direct push drilling methodologies (Geoprobe) at independent soil boring locations and/or partnered with the geotechnical investigation and utilized the same boring location but investigated (e.g. collected environmental samples) only in the interval from the ground surface to 10.0 foot below ground surface (bgs). Each of the soil borings, irrespective of drilling methodology, was grouted from the maximum depth to the ground surface utilizing NJDEP guidelines.

The 0.0 to 10.0 foot bgs interval was investigated because it represents the area that will realize the greatest amount of disruption during the construction process. By investigating this area, Health and Safety protocols may be established for the future construction operations; and soil and groundwater management options may be established prior to construction activities.

As part of the environmental LSI, one soil sample was collected approximately every 500 feet along the length of the proposed rail alignment. Each soil sample was collected from the 0.0 to 10.0-foot interval below ground surface. The recovered soil samples from this defined interval were screened using a calibrated photo ionization detector (PID) for the presence of elevated volatile organic compounds in accordance with the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 7:26E), and the NJDEP Field Analysis Manual (*NJDEP, June 1994*) to determine the potential presence of impacted materials. Soil samples were collected from those sample intervals reporting the highest PID reading.

Groundwater samples were also collected from selected soil boring locations along the length of the proposed rail alignment to identify the condition of the shallow aquifer. A total of 10 groundwater samples were collected, each sample collected in general accordance with the NJDEP Alternative Ground Water Sampling Techniques Guide, Section 4.0 (*AGWSTG, 1994*), for a passively placed narrow drive point.

Sediment samples were also collected from Berry's Creek and the lagoon located on the Universal Oil site (Honeywell). These samples were collected via a Petit Ponar Dredge sampler per the guidance provided in the NJDEP Field Sampling Procedures Manual (*NJDEP, May 1992*). The purpose of these sediment samples was expressly for the purpose of identifying the presence/absence of contaminants in the near surface dredge material, so as to aid in identifying the type of potential contaminants and how these said contaminates may effect the proposed construction activities.

Surface water samples were collected from Berry's Creek at areas proximal to the sediment samples. These samples were collected via a decontaminated sample bottle per the guidance provided in the NJDEP Field Sampling Procedures Manual (*NJDEP, May 1992*). The purpose of these surface water samples was expressly for the purpose of identifying the presence/absence of

contaminants in the surface water, so as to aid in identifying the type of potential contaminants and how these said contaminants may affect the proposed construction activities.

Soil and sediment samples collected were submitted for Target Compound List/Target Analyte List (TCL/TAL), and Total Petroleum Hydrocarbon (TPH) analysis. Surface water and groundwater samples were submitted for only TCL/TAL. A total of 27 soil samples were collected from various environmental and geotechnical borings along the corridor. A total of 11 groundwater samples were collected from selected borings. A total of two surface water samples were collected from Berry's Creek, and a total of three sediment samples were collected from Berry's Creek and the Lagoon located on the Universal Oil site (Honeywell).

The limited site investigation activities were conducted in accordance with the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 7:26E), and the NJDEP Field Sampling Procedures Manual (NJDEP, May 1992).

The soil sampling analytical results indicated concentrations of benzene above the most stringent NJDEP Soil Cleanup Criteria (SCC) in one sample that was collected on the northwestern portion of the Universal Oil site (Honeywell). A total of two soil samples indicated concentrations of semi-volatile organics above the most stringent SCC. A total of two soil samples indicated concentrations of PCBs above the most stringent SCC. A total of five soil samples indicated concentrations of metals above of the most stringent SCC.

The groundwater sampling analytical results indicated concentrations of volatile organics above the NJDEP Ground Water Quality Standard (GWQS) in two samples. A total of one sample indicated concentrations of semi-volatile organics above the NJDEP GWQS. A total of ten samples indicated concentrations of metals above the NJDEP GWQS. The metals concentration are believed to be an artifact of the groundwater sampling methodology (TGWSP), in which the high suspended solids content of the sample artificially elevates the metals concentrations. The NJDEP recognizes this phenomenon, and only permanent monitoring wells would be capable of providing non-turbid samples for assessment. It is believed that non-turbid samples would reduce and/or eliminate the elevated metals results in the groundwater, resulting in metals concentration near or below the GWQS.

The sediment sampling analytical results indicated concentrations of semi-volatile organics above the most stringent NJDEP SCC in four of the five samples collected. A total of four samples indicated concentrations of PCBs above the most stringent NJDEP SCC. A total of three samples indicated concentrations of metals above the most stringent NJDEP SCC.

The surface water sampling analytical results indicated concentrations of metals above the NJDEP Surface Water Quality Standards.

The detailed methodologies, results, and recommendations identified herein are contained in the *Site Investigation Report and Appendices for the Meadowlands Railroad and Railway Improvement Project (PMK Group, 2005)*.

4.11.3 No-Action Alternative

It is anticipated that hazardous waste conditions under the No-Action Alternative will be similar to existing conditions.

4.11.4 Preferred Alternative Impacts

The existing site character along the proposed rail alignment has been investigated by the referenced methods. As identified, the sampling and testing was completed to determine the presence/absence for potential contaminants along the specified rail alignment. In general, the environmental test results identify contamination that can safely and properly be managed during the development of each of the three identified areas of the site. The below referenced text relates only to the media samples collected for the environmental LSI within the proposed rail alignment. It should be noted that additional and/or different contaminants and Areas of Concern (AOC) may exist for each of the identified project sections outside of the defined railroad alignment, and were outside the scope of this investigation, and were not assessed. The following are the environmental LSI within the proposed rail alignment:

- **Area 1** - The former Universal Oil site (Honeywell) has contamination related to former operations, at levels above the NJDEP SCC. The contaminants identified include PCB's, Base Neutrals, Benzene and Lead. This site is undergoing remediation by Honeywell under USEPA and NJDEP oversight, although remediation in the area of the project has not yet been performed.
- **Area 2** - Berry's Creek has contamination in both the sediment and surface water that is generally identified to be a result of discharges from various locations within the watershed. Contaminants include Base Neutrals, Metals and PCB's at levels that exceed the NJDEP's SCC's and the NJDEP marine/estuarine sediment screening guidelines.
- **Area 3** - The NJSEA parcel contains contaminants that are generally consistent with the property development including filling activities for development utilizing dredged sand material from Ambrose Channel off of New York Harbor. Contaminants include Base Neutrals, Metals, PCB's and Volatile Organics, which exceed the NJDEP SCC.

Assessment of the historic site development history, the existing identified site conditions and the limited environmental sampling results have been considered in light of the proposed Project. Construction of the proposed Project includes the use of deep pile foundations to support the railroad structures, as well as limited surficial disturbance for construction of the rail bed and associated surficial structures (e.g. pile caps, rail bed, at grade crossings). In general it is anticipated that these improvements will encounter some of the identified contamination during the construction process, from any/all of the media encountered. By encountering the impacted media, worker and public safety must be recognized by the application of an appropriate HASP. Additionally, material/media management will be required to properly and appropriately manage the material for on site reuse and/or off site disposal. It is likely that the NJDEP will be engaged

to provide a level of administrative and technical oversight for the project related to the environmental conditions, particularly for the Honeywell property. The NJDEP oversight may include recommended remedial investigations and reporting to document the site conditions and perhaps also limited remediation to meet site-specific interim criteria.

Impacts to the environment resulting from the proposed construction are expected to be typical for a construction project of this type, size, and duration. It is anticipated that appropriate protections typical to construction projects will be instituted, including (examples): soil conservation permits (SCD); soil management plans; federal, state, and local permits and associated permit monitoring requirements. With the implementation of the “typical” protections offered by the required construction permits and associated permit oversight/monitoring, it is not anticipated that the construction will negatively effect the environment due to the contamination identified on site. The types and concentration of contaminants identified on site do not suggest that extraordinary management/control methods would be required, nor do they suggest that construction would negatively affect areas of the site/environmental that may potentially be unaffected at this time. Furthermore, the NJDEP is anticipated to provide environmental oversight, at a minimum, at the Honeywell property. The NJDEP oversight will offer additional support for protection of the environment and appropriate implementation of construction practices. Finally, amendments to the construction operations will be implemented to address the management of impacted material during the construction operations. These amendments may include impacted water management (e.g. treatment, containerization and off site disposal), soil management (e.g. reuse with NJDEP approval, engineering controls, managed stockpiling, off site disposal), sediment control (e.g. siltation/turbidity management).

In summary, an environmental site investigation for the proposed Project has been performed to review historic data review and to provide a limited site investigation including soil, groundwater and sediment and surface water sampling and testing to determine the presence/absence of contamination in these media. The results of the investigation have identified contaminants in the sampled media at levels above the most stringent NJDEP SCC and GWQS. The containments apparently resulted from former operations at the Honeywell property, migration to Berry’s Creek of discharges from various upstream locations and the use of dredged fill material on the NJSEA. The contaminants are at levels that can be managed in a manner that will allow the Project to be performed safely through implementation of appropriate health and safety and engineering and administrative controls. The contaminants are not anticipated to negatively effect the environment and/or migrate to presently unaffected areas as a result of the proposed construction. Appropriate permits would be obtained and the permit requirements implemented. Where applicable, amendments to the construction operations specific to the management of impacted media will be employed and the appropriate regulatory agencies will be actively involved in the construction operation oversight.

4.11.5 Mitigation

The existing responsible party (Honeywell) will retain environmental responsibility for the on site conditions at the Universal Oil site, including regulatory applicability and investigation/ delineation/

reporting requirements. However, the NJDEP may require the NSJEA to perform some interim investigation and remediation work to meet site specific interim criteria.

The work would result in the approval of a Remedial Action Workplan, Soil Reuse Plan and HASP that will provide direction and guidance on minimizing potential impacts to humans and the environment during construction of the Project at the Universal Oil site. A HASP will also be developed, approved and implemented for the work at the Berry's Creek and NJSEA sites.