State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
Mail Code 401-05F
P.O. Box 420
Trenton, New Jersey 08625-0420
Telephone: 609-633-1455

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

July 11, 2022

Attn: Ms. Rupika Ketu
United States Environmental Protection Agency
New Jersey Remediation Branch
290 Broadway, 19th Floor
New York, New York 100007-1866

Re: Rolling Knolls Landfill
35 Britten Road
Chatham Township, Morris County
PI #: G000004411
Activity Number: RPC080001
Document Reviewed: USFWS - *Data Gap Site Characterization Report* (Dated: *December 2021*)

Dear Ms. Ketu:

The New Jersey Department of Environmental Protection (Department) has completed its review of the above referenced Data Gaps Site Characterization (DGSC) Report. This document, a copy of which was provided to the Department by the United States Fish and Wildlife Service (USFWS) in January 2022, included the results of updated soil, sediment, surface water and pore water sampling data that were collected on those portions of the Rolling Knolls site that lie within the Great Swamp National Wildlife Refuge (GSNWR) in Chatham Township / Morris County.

The DGSC Report was prepared by Applied Intellect on behalf of the USFWS. The DGSC Report summarizes site characterization activities conducted on portions of the Rolling Knolls Landfill that lie within the GSNWR. This sampling and analysis effort was conducted at the request of the USFWS to further define the extent of contamination in soils, sediments, pore water, and surface water on the GSNWR portions of the property and to aid in the development of recommendations for a remedial strategy for the site. In this report the USFWS has also proposed that a Remedial Alternative 6 be added to the Feasibility Study (FS) Report that is being drafted by the Responsible Parties for the site. Remedial Action 6, as suggested, would involve the removal of waste and contaminated soils from the 35 acres of the site located within the GSNWR. Samples collected for the purposes of the DGSC Report were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, dioxins/furans, Per-and Polyfluoroalkyl substances (PFAS), metals, cyanide, and simultaneously extracted metals/acid-volatile sulfide (SEM/AVS).

This review was conducted in accordance with NJDEP regulations and guidance and assumes that all information presented in the report is complete and accurate. The following comments are offered for your consideration and inclusion into your evaluation of the USFW DGSC Report.

A. GENERAL COMMENT

The updated soil, sediment, surface water, and porewater samples discussed in this report were collected on portions of the property where, currently, no remedial actions would be required if the USEPA and Responsible Parties-preferred Remedial Alternatives 3 or 4 discussed in the Draft FS were selected. While some of the above-referenced sampling was not conducted in strict accordance with NJDEP regulations and guidance (i.e. specifically subsurface soils and sediments), the Department is of the opinion that the data do provide information on general contaminant concentrations at locations where no historic data exist and that these data should be considered when evaluating remedies as part of the FS process.

B. SPECIFIC COMMENTS

1. The DGSC Report recommended that the data collected as part of the DGSC work be incorporated into revised ecological and human health risk assessments for the site.

   - As the Department does not use baseline human health risk assessments to determine whether remedial actions are indicated at a site, it does not believe that a revised human health risk assessment is necessary. The Department determines the need for further action based on the Technical Requirements for Site Remediation (N.J.A.C. 7:26E) and compliance with the NJDEP's media specific remediation standards [e.g., Soil Remediation Standards, Surface Water Quality Standards, and Ground Water Quality Standards (GWQS)] as outlined in applicable regulations and guidance. Samples collected and analyzed in accordance with Departmental regulations and guidance should be used to supplement historical site data and inform remedial decisions for the site.

   - In regard to ecological risk issues, the Department has recently Issued an addendum to its comments on the March 2021 Revised Draft Feasibility Study Report (Draft FS). This addendum to the Department's Draft FS comments contained a request that Ecological Preliminary Remediation Goals (PRGs) be developed during the FS phase using the information included in the final BERA that was approved for the Rolling Knolls site. Therefore, no further comment is offered here in regard to any of the ecologic discussions presented in the USFW DGSC Report, pending the development of Ecological PRGs for the Rolling Knolls site. Additional information regarding the Department's reasoning for developing ecological PRGs is provided in its June 13, 2022 correspondence to EPA.

2. Surface soil samples (0-6 inches) for the DGSC were collected in accordance with Department regulations and guidance, and the results showed elevated concentrations for several contaminants, including arsenic (concentration range 3.2 mg/kg to 135 mg/kg), copper (concentration range 8.1 mg/kg to 12,400 mg.kg), lead (concentration range 20.6 to 6,000 mg/kg), mercury (concentration range 0.061 mg/kg to 1,770 mg/kg), PCB (concentration range 0.089 mg/kg to 27 mg/kg) and dioxins/furans (concentration range 203 pg/g to 1,739 pg/g). Many of the surface soil samples exceeded the human health-based ARS developed for the site for at least one contaminant (arsenic, lead, mercury, PCB) and most sample locations are predicted to exceed any future ecological risk-based remediation goals that would be developed for the site, especially for lead and PCB. It is important to note that none of these samples are

in locations where remedial actions (e.g., capping, excavation, etc.) are currently planned as part of USEPA's preferred Remedial Alternatives 3 and 4 of the most recent Draft FS.

3. The Department notes that subsurface soil samples for which data were presented in the DGSC Report, were not collected in accordance with Department regulations and guidance. Instead, as discussed in Section 5.4 of the DGSC Report, composite samples were collected from various depth intervals ranging from the surficial interval (0.5 feet) to 21 feet bgs (total depth of landfilled material). While this approach can be used to determine the extent of landfill material, it is not appropriate for delineating contaminant concentrations in soils. In accordance with N.J.A.C. 7:26E-3.4(a)2 and Sections 6.2.5.1 and 6.2.5.2 of the Department's Field Sampling Procedures Manual, composite sampling is not permitted for surface and subsurface soils.

    - Although the subsurface samples were not collected in accordance with Departmental regulations and guidance, the data generated from these samples are still recommended for use as a line of evidence to determine if additional remedial actions are necessary. For example, subsurface sample DP16, which is located on the southern GSNWR portion of the property, had a detected lead concentration of 27,900 mg/kg. This is the highest concentration of lead found in soils on the site (previously the highest detection on site was 16,500 mg/kg). Collocated surface soil concentrations, which <u>were</u> collected in accordance with Departmental regulations and guidance, were also very high at this location (SS16) with a detection of 3,600 mg.kg for lead. Both surface and subsurface samples are above the site-specific human health-based ARS for lead and are expected to be well above any ecological risk-based PRG for lead that is developed for the site.

4. As part of the DGSC effort, sediment samples were collected using a 20-inch-long sediment core device with contents of the core at each location placed in a bowl until an appropriate sample volume was obtained. No discrete sampling intervals were collected as required by Departmental regulations and guidance. Section 6.8.2.3.1.3 of the Department's Field Sampling Procedures Manual states "sediment samples must be collected from the 0-6 inch interval (biotic zone) of the water body bottom". The sampling methodology utilized makes it difficult to determine whether the sample is representative of the 0-6 inch biotic zone or a different depth interval. Therefore, the sediment samples can be used to identify whether waste is present but are not a reliable measurement for delineating contamination in sediments. With that said, contaminant concentrations and Simultaneously Extracted Metals/Acid-Volatile Sulfide (SEM-AVS) analysis results for sediment samples SD01, SD14, and SD03 do provide a line of evidence that this area of the GSNWR requires further investigation. This finding lines up with the conclusions of the 2016 BERA for sediment sample locations SED-06 and SED-07, and supports the recommendations of USEPA and NJDEP that this portion of the property is an area of particular concern that requires additional sampling and remedial actions to address exceedances.

5. Pore water samples were also collected as part of the DGSC effort. The results were below ecological screening criteria (ESC) and Surface Water Quality Standards (SWQS) for most contaminants, except for slight exceedances of select metals, PAHs, and cyanide. Of particular interest are the 7 pore water samples analyzed for PFAS. All 7 of these samples exceeded the NJ Ground Water Quality Standards (GWQS) for Perflourooctanoic acid (PFOA) and Perflourononanoic acid (PFOS), with a maximum detection of 1,130 ng/L for PFOS and 111 ng/L

for PFOA. All results were below the State of Michigan aquatic life final chronic values but warrant additional investigation based on the exceedances of the NJ GWQS.

C. GROUND WATER COMMENTS

As indicated in B.5, above, additional sampling was conducted across the portion of the Rolling Knolls Landfill site that lies within the boundaries of the GSNWR. The results that have a bearing on ground water issues at the Rolling Knolls site are discussed, below.

1. Pore water samples were collected at several locations across the GSNWR portion of the site and analyzed for Metals, VOCs, Semi-VOCs, and Pesticides. Seven of these porewater samples were also analyzed for PFAS. All seven of these samples detected PFOS and PFOA above their respective GWQS. As stated above, while pore water data collected from aquatic sediments are not generally compared to the NJ GWQS, these data verify the presence of PFAS at the site which requires additional evaluation.

    - The Department requests that in consideration of these findings, and as was previously relayed to EPA via email correspondence dated 5/24/21, ground water samples should be collected from all site-related monitoring wells with the samples analyzed for PFAS using the appropriate method(s). These updated data shall be incorporated into the Final Feasibility Study that is being drafted for the site.

2. Elevated concentrations of dioxins were identified in soil and sediment samples that were collected as part of the DGSC. As it is not clear whether site ground water was ever sampled for 2,3,7,8-Tetrachlorodibenzo-p-dioxin during previous ground water sampling events, ground water samples for this compound shall be collected in site monitoring wells for analysis using the appropriate methodology.

3. The DGSC report included discussion regarding the results of additional analyses of geochemical parameters which confirmed previously identified oxidation-reduction conditions beneath the landfill that likely affect the fate and transport of contaminant constituents present at the site. A recommendation was included in the DGSC report to conduct an expanded ground water assessment which would include additional evaluation of dissolved phase contaminant distribution, contaminant fate and transport studies, and the collection of additional geochemical data in order to refine the delineation of redox zones associated with the landfill.

    a. The Department is of the opinion that, with the exception of the additional ground water sampling discussed in C. 1 and 2, above, that there is sufficient understanding of the general ground water issues associated with the site to preclude the need to conduct an expanded ground water assessment as discussed in the DGSC report. This determination is based on the following rationale:

    - Upgradient, onsite, and downgradient ground water conditions have already been assessed in many locations.

    - The concentrations of metals in ground water are relatively low across the site.

- Additional assessment of geochemical parameters (which have already been associated with redox conditions that are known to exist beneath the waste filled areas) would be of little benefit since extensive pore water sampling, sediment sampling, and surface water sampling have already been conducted across the site.

- The need for any additional monitoring wells to further refine our understanding of the distribution of worst-case dissolved phase contaminants associated with the Rolling Knolls site will be addressed in the design phase.

Please incorporate the above comments into EPA's evaluation of the December 2021 USFW DGSC Report. If you should have any questions regarding this correspondence, please contact Jill McKenzie of the Bureau of Case Management at 609-292-1993 or, via email, at Jill.McKenzie@dep.nj.gov.

Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries or damages.

Sincerely,

Jill McKenzie
Bureau of Case Management

cc: Jill McKenzie, BCM
Erica Snyder, BEERA
Michael Russo, BGWPA