REGION 1
BOSTON, MA 02109

Via Electronic Mail

Dated as of the date signed below

Mr. Matthew Calacone
Global Operations, Environment, Health & Safety
General Electric Company
1 Plastics Avenue
Pittsfield, MA 01201

Re: Conditional Approval of General Electric's February 28, 2024 submittal titled *Upland Disposal Facility Final Design Plan,* GE- Pittsfield/Housatonic River Site

Dear Mr. Calacone:

This letter contains the Environmental Protection Agency's (EPA) conditional approval of GE's *Upland Disposal Facility Final Design Plan* (the "Final Design Plan"). This Final Design Plan is subject to the terms and conditions specified in the Consent Decree (CD) that was entered in U.S. District Court on October 27, 2000.

Pursuant to Section XV of the CD, EPA, after reasonable opportunity for review and comment by the Commonwealth of Massachusetts and the State of Connecticut, approves the Final Design Plan subject to the following conditions. GE shall submit for EPA approval a Revised Final Design Plan, including a revised set of specifications and design drawings and a new addendum (as required by Condition #122 of this letter), by December 20, 2024.

1. Section 2.6.2: EPA notes that the Final Cover/Closure Plan may be required sooner than specified because GE plans to employ a partial sequential capping strategy as discussed in Section 4.2. The Final Cover/Closure Plan shall be submitted for EPA review and approval a minimum of six months prior to any planned capping activities.

2. Section 2.6.3: GE describes the use of a future on-site UDF water treatment facility. GE shall provide a figure showing the potential locations of the treatment facility, discharge route(s), and outfall(s).

3. Section 2.7: Because hydraulic pumping to the UDF is feasible and will significantly reduce truck traffic on local roads, GE shall provide a figure showing potential locations of the dewatering area(s) that will be necessary to manage hydraulically pumped sediment.

4. Sections 3.2 and 3.4: GE states that on-site excavated soils will be used in areas needing fill to create the perimeter berm; however, GE does not discuss the geotechnical soil properties required of such materials to deem them suitable for such use. Specification 31 05 13 (Soils for Earthwork) only discusses the requirements for "imported general fill" from off-site sources. GE shall demonstrate by existing in-situ geotechnical testing, or subsequent ex-situ testing during excavation, that on-site soils meet the relevant specification and are suitable for this use or any other proposed use at the UDF. GE shall provide a revised Specification 31 05 13 that includes criteria for re-use of on-site soils as general fill and a more detailed discussion as to how on-site soils (with differing degrees of silt, sand, and gravel as shown in Figures 4 and 5) will be handled or processed (if needed) for re-use.

5. Section 3.3.1: The Final Design Plan does not include specific information supporting the Revised Final Permit requirement and GE's conclusion that the HDPE liner is chemically compatible with PCBs. GE shall revise this Section to include such information. GE shall also require that documentation of or supporting information for the chemical compatibility of the HDPE liner with PCBs, along with the manufacturer and liner material identification, be provided in the SIP.

6. Section 3.3.1, The revised Work Plan/specifications shall describe the general means and methods for installing the gravel drainage layer materials (baseliner) and operations layer materials (baseliner and side slopes) in order to avoid damage to the underlying geosynthetics and/or require the contractor to specify how the design thicknesses of materials overlying the HDPE liners and the planned construction equipment for initial placement of the operations layer and consolidation materials immediately above the operations layer will comply with the allowable ground pressure limits in Appendix C, Specification 31 05 19.16, Sections 3.04(C) and 3.04(D).

7. Section 3.3.6: GE shall provide a narrative discussion and add equipment specifications to Appendix C regarding the automated monitoring and communication systems that will be associated with the leachate collection and storage systems (as depicted in Attachment A drawings 40 through 43) such as high level, pressure, leak detection, or pump failure alarms and communication protocols. GE shall employ similar fail-safes as those employed at the On-Plant Consolidation Areas (OPCAs) leachate collection system. Because these systems rely on electric pumps to extract leachate from the collection sumps and move it uphill to the leachate storage tanks, as discussed in Section 8.1 and Table 4, they shall be constructed with electrical connections for back-up power sources so that leachate can be periodically removed from the consolidation cells and storage tanks in the event of an extended local power outage.

8. Section 3.4: The Revised Work Plan shall include a discussion of potential options for the management, storage, and/or disposition for the approximately 285,000 cubic yards of surplus existing site soils to be generated during UDF construction.

9. Section 4.5.3: Gas venting features are depicted on Drawing 38, not on Drawing 8 as stated in the text. GE shall revise accordingly.

10. Section 4.6.2, SMA-4 and SMA-5: GE shall incorporate additional check dams at the inlet to the outlet stormwater culvert pipes as an additional measure for sediment control and show such features on the appropriate figures.

11. Section 5.2 and Appendix A, Drawing 4B: GE shall include a second access road to the UDF property from the lower (most westerly) part of Willow Hill Road that will result in the least distance travelled up Willow Hill Road from Mill Street and avoid passing any residential properties or going past the entrance to the October Mountain campground entrance.

12. Sections 6.1 and 7.2: For restoration of some of the disturbed forested habitat on-site as part of UDF closure, portions of the Operations Area to the south of the consolidation area appear suitable for reforestation, and the Town of Lee has requested planting taller trees, where possible, including along Woodland Road, to limit UDF visibility. The Revised Final Design Plan shall identify when and where tree lined buffers can be planted.

13. Section 6.2.3 and Appendix H: GE shall revise these sections to require enhancement of the mitigation measures by implementing the following to the extent practicable and consistent with the objective of enhancing the hydrology of the vernal pool: expanding the proposed new bordering vegetated wetlands and buffer area into the low-lying area to the north of the new proposed vernal pool area such that the additional wetland area is contiguous with the bordering vegetated wetlands currently proposed. Under such an approach. the extent of the new wetland area shall be maximized by revising existing grades using wetlands design principles to achieve the best integration of the area with the currently proposed mitigation. GE shall also incorporate design elements that would enable the hydrology to be managed based on post-construction inspections, such as using low-permeability substrate material and/or potential outlets to manage the hydrology as appropriate for both the enhanced vernal pool and the expanded wetland.

14. Section 5.2 and Appendix H: The Final Design lacks soil specifications for the 3-inch compacted silty base layer and the 9 inches of topsoil. The vernal pool topsoil specification shall include requirements for soil texture, structure, organic matter content, bulk density, fertility, and pH that are representative of values measured in the existing vernal pool soils.

15. Section 5.2 and Appendix H: The technical specifications in Appendix C shall include a specification for the installation of wetland soils that addresses placement methods and measures to avoid compaction of existing and newly placed soils, and specifications for seed mix

and plants used for wetlands restoration, consistent with the requirements specified in Appendix H.

16. Section 8.1.1 and Tables 3 and 4: In the Revised Final Design Plan, components of the Final Design subject to the exposure assessment shall include a similar evaluation to UDF Closure (Section 7) as most of the bulleted potential hazards listed also apply to the UDF post-closure.

17. Section 8.2: GE did not provide documentation or information in Appendix I as to how greenhouse gas (GHG) emissions associated with construction and operation of the UDF were calculated. The Spreadsheets for Environmental Footprint Analysis (SEFA) tool uses a number of input spreadsheets. GE shall include documentation of the input sheets used and any updates to the calculation factors in Appendix I. The list of minimization measures provided in Section 8.2 and explained in Table 5 did not include some measures discussed in GE's Sustainability and Climate Adaptation Plan. These include solar power to serve on-site trailers and leachate pumps, use of biodiesel, and use of local suppliers. The Revised Final Design Plan shall include a revised GHG evaluation that provides additional supporting documentation and evaluates all measures discussed in GE's Sustainability and Climate Adaptation Plan that are applicable at this phase, along with other emissions reductions methods, where possible, in the plans and specifications.

18. Table 1 (ARARs):
    a) Table 1, Federal ARARs, Clean Water Act: The following sections of Action(s) to be Taken to Achieve ARARs shall be modified as follows:
        1. "…, and/or the vernal pool at the northern end of the wetland, that activity will be conducted in accordance with ***the substantive provisions of*** these standards."
        2. "…, including performance of appropriate and practicable steps to minimize potential adverse impacts of the discharge on the wetland ***and*** stream***. Except for habitat enhancement activities, there will be no discharge of material into the vernal pool*** ~~and/or pool~~."
        3. "***See Endangered Species Act ARAR for Threatened and Endangered Species***." Shall be added to the end of the narrative.
    b) Table 1, Federal ARARs, Protection of Wetlands: The text "to implement the Executive Order" shall be deleted from the Action(s) to be Taken to Achieve ARARs section.
    c) Table 1, Federal ARARs, National Historic Preservation Act and Regulations: In the Actions to be Taken to Achieve ARARs section, GE shall add a reference to the sections of the Final Design Plan (Section 2.3.8) and the UDF Revised Final Pre-Design Investigation (PDI) Summary Report (Sections 2.2.7 and 3.10) where the specified conclusion was presented.
    d) Table 1, Federal ARARs, Archaeological and Historic Preservation Act: In the Actions to be Taken to Achieve ARARs section, GE shall add a reference to the sections of the Final Design Plan (Section 2.3.8) and the UDF Revised Final PDI Summary Report (Sections 2.2.7 and 3.10) where the specified conclusion was presented.
    e) Table 1, Federal ARARs: The entry for Executive Order 11990 (Protection of Wetlands) shall be deleted.

f) Table 1, State ARARs, Clean Water Act: The text "***Except for habitat enhancement activities, there will be no discharge of material into the vernal pool.***" shall be added to the end of the first paragraph in the Action(s) to be Taken to Achieve ARARs section.

g) Table 1, State ARARs, Massachusetts Wetlands Protection Act and Regulations: The Status section shall be revised to solely state "Applicable".

h) Table 1, State ARARs, Massachusetts Wetlands Protection Act and Regulations: The Action(s) to be Taken to Achieve ARARs section shall be revised as follows:

   1. "…, including the southeastern-most gravel-pit ponded area***, the vernal pool at the northern end of the wetlands,*** and the intermittent stream and bordering vegetated wetland in the east-central portion of the GE parcel, those activities will be conducted in accordance with the ***substantive*** requirements …".
   2. The text "***Except for habitat enhancement activities, there will be no discharge of material into the vernal pool.***" shall be added to the end of the paragraph.

i) Table 1, State ARARs, Massachusetts Historical Commission Act and Regulations: In the Actions to be Taken to Achieve ARARs section, GE shall add a reference to the sections of the Final Design Plan (Section 2.3.8) and the UDF Revised Final PDI Summary Report (Sections 2.2.7 and 3.10) where the specified conclusion was presented.

j) Table 1, State ARARs, Massachusetts Endangered Species Act (MESA) and Regulations: In the Actions to be Taken to Achieve ARARs section, GE shall add a reference to the section of the UDF Revised Final PDI Summary Report where the specified conclusion was presented (Section 2.2.1). *[**Note to EPA**: This is not in the Final Design Report.]*.

k) Table 1, State ARARs, Massachusetts Air Pollution Control Regulations: The text in the Action(s) to be Taken to Achieve ARARs section shall be revised to say "the ***substantive*** requirements of these regulatory provisions".

l) Table 1, State ARARs, Massachusetts Clean Water Act and Wetlands Protection Act – Stormwater Management Standards: The first sentence in the Action(s) to be Taken to Achieve ARARs section shall be revised to say "the ***substantive*** requirements of these regulations."

19. Appendix A, Design Drawings: GE shall provide a set of revised design drawings in accordance with the following conditions and including any additional required revisions or corrections GE identifies during the revision process. EPA notes that there may be inconsistencies with call-out details that are not all captured in the comments below.

20. Appendix A, Drawings 3A and 3B: GE shall include a note referencing the standard specifications for abandonment of piezometer/monitoring wells in GE's FSP/QAPP.

21. Appendix A, Drawing 3B: GE shall revise to include erosion controls around the southern operations area depicted on Drawing 4B.

22. Appendix A, Drawings 3A and 3B: GE shall revise the subgrade contours to depict a trench to accommodate installation of the secondary leachate collection pipe cleanout extensions up the eastern slope of the consolidation area.

23. Appendix A, Drawing 4B: GE shall revise the detail call-out for Cell 2 Sump to be 4/16 to be consistent with Drawing 16.

24. Appendix A, Drawing 4B: GE shall include the call-out for the Side Riser Trench Sections 1/17 on this sheet.

25. Appendix A, Drawing 4B and Section 2.5: If feasible, based on proposed further characterization, GE shall further reduce the need for unnecessarily importing material through the beneficial reuse of the stockpiled concrete (for example, crushed for aggregate) located in the concrete debris pile between MW-2022-5 and MW-2022-6.

26. Appendix A, Drawing 4B: At the stabilized construction entrance at the main entrance, in lieu of just a stone surface, GE shall consider installing manufactured track out control mats that can be periodically cleaned of accumulated soils. These mats could be paired with a passive water wash (seasonal weather permitting) by constructing a lined and bermed area to effectively remove soil from truck tires exiting the site to control nuisance dust along Woodland Road, which will be strictly controlled.

27. Appendix A, Drawing 4C: GE shall show that the water supply line into the site will be metered with GE purchasing water from the Town of Lee municipal water supply system.

28. Appendix A, Drawing 4C: Note 2 refers to subgrade elevations, but the grades do not show leachate sumps or trenches. GE shall revise Note 2 or revise the drawing to depict Cell 1 and 2 sumps and side riser trenches.

29. Appendix A, Drawing 5: The design grades and Note 2 do not appear to reflect the top of baseliner elevations intended for Drawing 5 as they are identical to the subgrade elevations depicted on Drawings 4A and 4B. GE shall revise the design grading and Note 2 to represent the top of the Baseliner System.

30. Appendix A, Drawing 5: GE shall prepare a detail that depicts a typical perimeter drainage ditch and anchor trench crossing location for consolidation fill access into Cells 1 and 2.

31. Appendix A, Drawing 6: Many of the detail references on this drawing are incorrect and either reference the wrong details or details that do not exist. Additionally, GE shall review all drawings for correct detail call-outs and revise the drawings accordingly.

32. Appendix A, Drawing 6: The depicted top of baseliner grades (per Note 2) do not appear different than the subgrade elevations shown on the initial grading plans shown on Drawings 4A and 4B. The baseliner grades for Drawing 6 shall include appropriate offset thicknesses from the design subgrade elevations based on the baseliner floor and sideslope detail configurations shown on Drawing 14. GE shall revise the design elevations to show the top of baseliner grade contours in accordance with Note 2.

33. Appendix A, Drawing 6: GE shall correct the call-outs for the Side Riser Trench Sections and Riser Pipes to be 1/17 on this sheet.

34. Appendix A, Drawing 6: GE shall add the call-outs for the Primary and Secondary Leachate Collection Pipes Section 4/14 to this sheet.

35. Appendix A, Drawing 6: GE shall add the call-out for the Riser Pipe Baseliner Penetration 3/17 at the eastern limits of cleanouts on this sheet.

36. Appendix A, Drawing 6: Detail 4/21 as referenced multiple times on the drawing could not be located in the drawing set. GE shall correct the call-out and the detail reference.

37. Appendix A, Drawing 6: Pending GE's response to a comment regarding Appendix E-1 below, GE shall consider including primary and secondary leachate collection pipes at the toe of the northern, western, and southern slopes. The proposed flow length to the single leachate collection pipe is very long, and the required geocomposite transmissivity referenced in Appendix E is higher than EPA has observed on similar baseliner applications. (EPA notes that GE states in Appendix E that gravel drainage layer transmissivity was not included in their calculations; however, this topic still merits consideration).

38. Appendix A, Drawing 8: GE shall depict the Station Numbers for each of the Cross Sections A through E for ease of reference and provide a detail for the finished surface of the plateau access road.

39. Appendix A, Drawings 8 and 9: The detail referenced for the Asphalt Site Driveway should be 2/35, not 1/35. GE shall revise accordingly.

40. Appendix A, Drawing 9: GE shall add a detail to specify how the nearly 2:1 back slope of the Plateau Access Road is to be stabilized.

41. Appendix A, Drawing 11: GE shall depict the Drainpipe Trenches on the Site Cross Section A. Also, the Plateau Access Road shall be called out on Section A between Station 15+00 and 16+00.

42. Appendix A, Drawing 11: GE shall revise the top of consolidation materials and proposed final cover surfaces at Station 8+35 in the Final Cover Plateau Ditch as the Top of Consolidation Material cannot be above Final Grade of the cap.

43. Appendix A, Drawing 12: GE shall call out the leachate side riser trench 1/17 for the left-hand side of Sections D and E, as the section is cut through this trench and the liner system is thicker to accommodate piping. The side slope baseliner system call-out 2/14 can be moved to right-hand side slope to accommodate this change.

44. Appendix A, Drawing 13: GE shall revise the three details to utilize consistent line types for liner component materials as depicted on Drawing 14.

45. Appendix A, Drawing 13, Detail 1: The detail indicates that locations for final cover collection outlet pipes and associated riprap protection in the perimeter ditch are shown on Drawing 8. No such features are shown on Drawing 8. GE shall revise Drawing 8 accordingly to show the locations of these features (note that Appendix F-3 recommends 600-ft spacing).

46. Appendix A, Drawing 14: GE shall consider modifying Detail 4 to have the stone trench in direct contact with the drainage geocomposite geonet materials. Wrapping the drainage stone completely with non-woven geotextile atop the non-woven geotextile that is a component of the drainage geocomposite will require that all the leachate collected upstream that is able to enter the geonet system will have to transmit through two layers of non-woven geotextile (one as part of the geocomposite, and the other specified here) in a two-foot-wide area to enter the leachate pipe and stone surround. The transmission of leachate through this geotextile is not accounted for in GE's transmissivity calculations. Based on GE's design, leachate will infiltrate through up to 375 linear feet of geotextile in the flow path and exit through two lineal feet to connect with the pipe. This could result in clogging of the narrow width of geotextile beneath the pipe and an ineffective transmission of leachate to the sump.

47. Appendix A, Drawing 14: GE shall add an inset to depict the relationship of the primary and secondary geosynthetics on the Cell Divide Berm Detail 3. The thick line type masks the different layers, and the top of the general soil fill limit shall be modified so that it does not correlate with geosynthetic materials that are shown above with similar line type.

48. Appendix A, Drawing 14: It is not clear whether GE has addressed CAL conditions #28 and #29 from the conceptual design regarding the 310 CMR 19.110(4)(a) requirement for the baseliner system to extend the first five feet vertically on perimeter berms or side slopes. EPA has not found an explicit response to these conditions in the Final Design. GE shall explain whether and how it has addressed this regulatory requirement.

49. Appendix A, Drawing 16, Details 2, 3, 5, and 6: Detail call outs shall be reviewed and revised where necessary to reference the correct corresponding detail.

50. Appendix A, Drawing 17, Detail 1: GE shall adjust the line types in the two inset details to be consistent with other details throughout the drawings.

51. Appendix A, Drawing 17, Detail 2: GE shall include insets to depict the geosynthetic materials similar to Detail 1.

52. Appendix A, Drawing 17, Detail 2: GE shall consider whether the non-woven geotextile shown separating the granular material in the primary and secondary drainage layers and their corresponding sumps is necessary or could be omitted.

53. Appendix A, Drawing 17, Detail 2: GE shall consider modifying Detail 2 to have the sump backfill in direct contract with the drainage geocomposite geonet materials. Wrapping the sump stone completely with non-woven geotextile atop the non-woven geotextile that is a component of the drainage geocomposite will require that all the leachate collected upstream that is able to enter the geonet system will have to transmit through two layers of non-woven geotextile (one as part of the geocomposite, and the other specified here) in the sump to be removed by pumping, which is not accounted for in GE's transmissivity calculations.

54. Appendix A, Drawing 17, Details 4 and 5: GE shall adjust the hatch scale and pattern for the graded aggregate and sump stone to be consistent with other details and drawings.

55. Appendix A, Drawing 17, Detail 6: GE shall revise text labels in this detail to remove the terminology "sideslope riser." Horizontal portions of sump piping, which require the depicted perforation for collection of leachate, are referred to across other drawing details as "sump collection pipes." Sideslope riser pipes need not be perforated.

56. Appendix A, Drawing 18: GE shall remove the depicted stormwater management pipes at the northern slope of the UDF since they are not associated with leachate conveyance.

57. Appendix A, Drawing 19: Call-out detail for the load out pipe should be 2/22, not 2/21. The call-out detail for conveyance manhole #3 should be 1/22, not 1/21. GE shall revise the drawing accordingly.

58. Appendix A, Drawing 19: GE shall include a flow totalizer and pump control panel at the leachate loadout station pipe connection point for operator interface and emergency stop.

59. Appendix A, Drawings 20 through 22: GE shall revise the drawings to show pipe connection seals to the various manhole and vault structures. GE shall consider revisions to also include pump shut down triggers in the various manholes and vault structures with leak detectors.

60. Appendix A, Drawing 20, Detail 1: SDR 21 conveyance pipe does not agree with Specification 33 05 33, which calls for SDR 26 pipe. GE shall revise the drawing or specification as appropriate.

61. Appendix A, Drawing 21, Detail 1: GE shall revise the detail to include the descriptor "leak detectors" as EPA assumes the high-level switch indicated on Drawing 42 serves this purpose.

62. Appendix A, Drawing 21, Detail 2: GE shall revise the detail to include a heat source within the valve house for pipe freeze protection.

63. Appendix A, Drawing 21 Detail 2: GE shall consider use of an automated gate valve on the 4-inch discharge pipe that would close when the leachate loadout pump is not in operation to prevent spills.

64. Appendix A, Drawing 23, Details 1 and 2: GE shall confirm the shut-off valve types shown for the equalization pipes and revise the details as necessary.

65. Appendix A, Drawing 25, Detail 2: GE shall identify where final cover collection outlets pipes will be located at the south side of the riser vaults. These outlet pipes are necessary since the final cover anchor trench and related collection pipe will be truncated by the riser vault structures.

66. Appendix A, Drawing 26, Drain line DP-3: GE shall assess whether an alternate pipe configuration could be used that might accommodate the use of manholes or whether concrete thrust blocks might be warranted at the elbow location.

67. Appendix A, Drawing 26: GE shall include a cross-sectional detail of the basin overflow spillway with geocell to reference the slopes, depth, and length of the spillway to accommodate maintenance vehicles.

68. Appendix A, Drawing 27: GE shall revise the drawing to show the inlet type for drainpipe DP-10.

69. Appendix A, Drawing 28: GE shall add a detail reference and table for the spillway dimensions for SMA-1, 4 and 5.

70. Appendix A, Drawing 28: GE shall review the proposed spot elevation for the bottom of forebay for the north pond sediment forebay, as it appears to be incorrectly labeled as 1101.1, and revise accordingly.

71. Appendix A, Drawing 28: GE shall review the proposed invert elevations for DP-8, 11 and 12 as they appear to be incorrect, and shall revise accordingly.

72. Appendix A, Drawing 29, Profiles F and G: GE shall revise the depiction of the corrugated HDPE pipe at the Final Cover Plateau Ditch to show how it connects to the Final Cover Collection Pipe depicted in Detail 3/31 and consistent with the Consolidation Grading Plan on Drawing 7.

73. Appendix A, Drawing 30: GE shall provide some dimensions on Details J and K for width, side slopes, and depths for pipe trenches.

74. Appendix A, Drawing 31, Details 2 and 3: GE shall consider modifying the section to have the perforated pipe stone surround in direct contract with the drainage geocomposite geonet materials. Wrapping the stone completely with non-woven geotextile atop the non-woven geotextile of the drainage geocomposite will require that all the water collected upstream that is able to enter the geonet system will have to transmit through two layers of non-woven geotextile, which is not accounted for in GE's transmissivity calculations, to enter the pipe and stone surround.

75. Appendix A, Drawing 31, Details 6 and 10: GE shall modify the section to include a depth for the proposed ditch.

76. Appendix A, Drawing 35, Detail 2: The depicted thicknesses of top and binder courses do not agree with Specification 32 12 00 Section 2. GE shall revise the drawing or specification as appropriate.

77. Appendix A, Drawing 35, Detail 5: GE shall revise the detail call-out for the staked panel edge as it is 3/35.

78. Appendix A, Drawing 38, Detail 1: GE shall consider changing the vent pipe material to schedule 80 PVC for enhanced durability due to the prolonged UV exposure over time and potential maintenance activities.

79. Appendix A, Drawing 38, Detail 1: GE shall revise the leader text "excavated material" to correspond to a presumed aggregate material presented in the technical specifications so that the proposed material's physical properties are understood.

80. Appendix A, Drawings 40 and 43: GE shall revise the P&ID drawings to include automatic shutdown of the cell sump pumps and leachate storage tank transfer pumps following a high-level alarm at the valve house.

81. Appendix A, Various drawings: GE shall revise details for all leachate management structures to show required electrical and control system conduits entering and exiting the structures.

82. Appendix B, Section 2.2, 1st paragraph: EPA questions GE's use of the phrase "the higher moisture content resident in the drainage materials at the time of placement." The drainage materials to be utilized in the secondary leachate collection system consist of granular drainage stone. This material by its nature will have minimal liquid content at the time of placement. A more likely source of liquid in the secondary leachate containment system would be rainwater infiltration during construction prior to placement of the primary liner system above. GE shall clarify whether this stone material is likely to be a significant contributor to water input to the leachate collection system.

83. Appendix B, Section 4: GE shall design a monitoring plan to be implemented immediately following completion of each cell's primary liner system but prior to placement of consolidation material to demonstrate the integrity of the primary liner system and its ability to prevent water intrusion into the secondary leachate collection system. Once completed, the primary liner system should be capable of essentially eliminating infiltration into the secondary system and secondary leachate collection system daily water removal volumes should drop sharply within a short period of time. Daily liquid removal volumes from the primary and secondary system prior to consolidation and daily precipitation amounts shall be tracked and graphed through several weather events to demonstrate that the primary liner system is competent and ready to receive consolidation materials. This plan shall be briefly described here and in a specification as a quality control measure during construction.

84. Appendix C, General comment: There are several places throughout the Report text and technical drawings where a soil or aggregate material is described with terminology that does not correspond to descriptive terminology of a material in the technical specifications. Examples include “granular drainage layer,” “graded aggregate,” “sump backfill,” “filter stone,” and “final cover subbase.” GE shall revise the technical drawings and/or specifications such that soil and aggregate descriptors are consistent and/or the specifications include a description of all the proposed uses for a given material.

85. Appendix C, General comment: The calculation in Appendix D.4 states “Acceptability of the proposed cover system materials will be determined by laboratory testing of each soil-to-geosynthetic and geosynthetic-to-geosynthetic interface (ASTM D5321 or ASTM D6243, as appropriate for interface) and by direct shear testing (internal friction angle) of fill materials (ASTM D3080).” However, this testing is not required in the specifications included in Appendix C. GE shall revise the appropriate specification in Appendix C to include this testing.

86. Appendix C: GE shall insert a new specification that characterizes the allowable properties of the consolidation materials (such as target moisture content for various modes of transportation), allowable and prohibited non-soil debris for consolidation at the UDF, and sizing requirements for anticipated UDF and off-site non-soil debris disposal.

87. Appendix C, Section 01 57 00, Part 3 - Execution: Section numbers 3.01 and 3.02 are each used twice for different sections and shall be revised as appropriate.

88. Appendix C, Section 01 57 00, Odor Control 3.02(C): Odor standards are discussed in Section 4.5 of the QOL Plan, not Section 4.4. GE shall revise accordingly.

89. Appendix C, Section 01 73 30, 3.07: GE shall revise this Specification to allow disposal of material (for example, used haul road material) in compliance with Permit Condition II.B.5 and Attachment E to the Final Revised Permit.

90. Appendix C, Section 02 21 00: GE shall add to Part 1.03.C, As-Built Drawings, the requirement to include installed force mains, electric lines, anchor trenches, subgrade and top of protective cover surfaces, and anchor trench.

91. Appendix C, Section 02 51 00 Decontamination: Since there are no requirements for means, methods, products, or required contractor submittals included in this specification, GE shall include a decontamination plan in the SIP that outlines all measures to prevent spread of contamination outside the consolidation limits and includes at a minimum: methods for equipment and personnel decontamination (bulk material removal, high pressure water sprays, manual brushing, boot washes, etc.); any products to be used (biodegradable soap); planned locations of decontamination activities (within the consolidation limits and/or outside the consolidation limits with containment); and methods to reduce contact with impacted materials

(egress routes for personnel, clean routes or access roads for trucks to dumping locations, long reach excavators, crane mats or equipment pads).

92. Appendix C, Section 31 05 13 Soils for Earthwork: Potential revisions to GE's POP Attachment B – Soil Cover/Backfill Characterization Plan may impact this Final Design Specification. GE shall revise this specification to be consistent with conditions outlined in the CAL for the POP Attachment B.

93. Appendix C, Section 31 05 13, paragraph 2.01.A: Three inch minus general fill has the potential to damage the final cover geocomposite and geomembrane. GE shall revise to require a maximum one-inch particle size for the first lift of imported general fill placed against geosynthetics.

94. Appendix C, Section 31 05 13.10 Low Permeability Soil Liner: GE does not propose any chemical testing of the clay soil liner materials imported to the site, unlike all other imported materials. GE shall ensure that a chemical testing protocol is implemented for the clay soil liner materials consistent with those in POP Attachment B Section 2.2, as amended by EPA's July 22, 2024 conditional approval letter for the POP.

95. Appendix C, Section 31 05 13.10: Part 3.01(C) states that the first and second lift of the Test Fill shall be an average compacted thickness of 9 inches, whereas 3.01(E)(2)(a)(i) and 3.01(E)(3)(a)(i) state the first two lifts shall result in a compacted lift thickness of 6 inches. GE shall clarify the required lift thicknesses for the Test Fill.

96. Appendix C, Section 31 05 13.10: Part 3.03(D) discusses a "non-liner geotextile separator." GE shall clarify that requirement and/or revise as necessary.

97. Appendix C, Section 31 05 13.10: Parts 3.03(E) and (F) discuss requirements for temporary covering and subsequent preparation of completed soil liner prior to placement of the baseliner geomembrane. GE shall revise these Parts to provide further clarification of these requirements and conditions.

98. Appendix C, Section 31 05 13.10, Part 3.04(A)(2): "Table 02222-2" is not a nomenclature used in this specification and instead shall be identified as "Table 2," located in this section.

99. Appendix C, Section 31 05 13.10, Tables 1 and 2: Both tables say "See Section 01000-1.05" for Test Method Minimum in the first column heading, which does not exist in this specification, and the column headings don't accurately reflect the contents of each column. The revised specification shall reference the appropriate section, and the headings shall be revised to correctly identify column contents.

100. Appendix C, Section 31 05 16 – Aggregates for Earthwork: GE shall provide or clarify a specification for the granular drainage layer material.

101. Appendix C, Specification 31 05 16: GE shall include the requirement that aggregate materials to be used for the Operations Layer and Primary/Secondary Leachate Collection Systems have a hydraulic conductivity equal or greater than 1x10-2 cm/sec to match the HELP model analysis and include testing requirements to verify the materials conductivity.

102. Appendix C, Section 31 05 18.16: GE shall modify the subject specification to require interface shear strength testing for all interfaces the GCL will be in contact with within the primary and secondary liner systems.

103. Appendix C, Section 31 22 00: In the design GE describes the consolidation material as primarily granular material, which may indicate that the specified unconfined testing (ASTM D1633) may be inappropriate as the material would be insufficiently cohesive. GE shall revise to propose an alternative means of testing the strength of the in-place consolidation materials to confirm that they meet the strength assumptions listed in Appendix D-1 – Global Stability Analysis (internal friction angel = 30 deg, cohesion = 25 psf).

104. Appendix C, Section 31 22 00 – Grading, Part 3.02(J) and (K): Ground pressure limits cited in 31 05 19.16, Sections 3.04(C) and 3.04(D) shall be cited here to ensure selection of properly sized equipment.

105. Appendix C, Section 31 22 00 – Grading, Part 3.03: If GE plans to submit a future proposal to use non-traditional grading and compaction methods for placing consolidation materials (for example, hydraulic pumping to in-place sediment geotubes), GE shall either revise this specification to include means and methods now or submit a revised specification in the future.

106. Appendix C, Section 31 25 00 - Erosion and Sediment Controls, Part 1.03: GE shall include requirements that the project stormwater pollution prevention plan (SWPPP) shall conform to the requirements of the NPDES Construction General Permit (CGP) and the Multi-Sector General Permit (MSGP) Sector L.

107. Appendix C, Section 35 20 23 – Vegetation Removal and Subaqueous Backfill, Part 3.01 Vegetation Removal: GE shall modify the specification to add the requirement that the SIP shall provide a detailed Phragmites removal plan that minimizes the potential for spreading viable seed, stolon, or rhizome material of the invasive species to the adjoining pond, other portions of the site, or off-site. GE shall evaluate the use of EPA-approved herbicides to kill the plants prior to physical removal and shall specifically discuss if the plants will simply be cut at ground surface or if the sub-surface root and rhizome structures will be excavated.

108. Appendix C, Section 35 20 23 – Vegetation Removal and Subaqueous Backfill, Part 3.02 Backfilling: GE shall revise to specify that during backfilling, standard siltation controls shall be utilized as BMPs to minimize silt migration to the adjoining pond and re-suspension of the adjoining pond's sediment as water is re-located either by pumping or overland flow.

109. Appendix D, Brief D-1: Static and pseudo-static (seismic) stability were evaluated to analyze deep circular failures and sliding block failures. The baseliner was assumed to have the lowest strength within the global stability analysis and was also assumed to have a shear strength of 24.0° and a cohesion of zero. The system was found to meet adequate factors of safety (FS) with these assumptions. However, the geosynthetic clay liner (GCL) minimum internal shear strength is specified as only 17° with a minimum cohesion of 200 psf. GE shall demonstrate that adequate slope stability is achieved based on the specified GCL internal shear strength, or the specified GCL internal shear strength should be adjusted accordingly.

110. Appendix D, Brief D-1: The brief states that the "[d]etailed output from the stability analyses, including figures showing the critical failure surface, are provided in Attachment C." The stability analysis output was not provided as well as the other attachments noted on the cover page of the calculation (that is, UDF Test Boring and Cross-Section Locations, Soil Analysis). GE shall include a complete Brief D-1 with the required revised drawings and specifications.

111. Appendix D, Brief D-2: GE shall include a revised Brief D-2 with the required revised drawings and specifications that includes the calculations demonstrating that anticipated subgrade settlement will not adversely affect piping connections, HDPE membrane and seams, and pipe slopes.

112. Appendix D, Brief D-2, Attachment C: Subgrade settlement figures in Attachment C assume uniform settlement that is not consistent with the Settle3 output. GE shall revise Attachment C to demonstrate the variation of settlement along the section by including additional insets as well as additional cross-sections. These additional visual presentations shall include the maximum settlement locations.

113. Appendix D, Brief D-4 and associated Specifications: GE shall revise accordingly to demonstrate that there are currently readily available geosynthetic materials that can meet the minimum required interface/internal friction (peak and residual) requirements as stated in the Veneer Stability Analysis.

114. Appendix E-1, Calculation Sheet: The identified required transmissivity of the geocomposite of 36.2 cm^2/sec appears to be high based upon EPA's understanding of industry availability. GE shall assess and document whether the transmissivity value of 36.2 cm^2/sec for the baseliner geocomposite is reasonable for the expected application(s) and whether further design measures could be incorporated to enhance functionality of the baseliner geocomposite.

115. Appendix F-2, Calculation Sheet: The calculated required permeability of the geocomposite of 38.7 cm^2/sec appears to exceed what EPA has observed in manufacturer's literature and conformance testing for the top plateau final cover. GE shall assess and document whether the transmissivity value of 38.7 cm^2/sec for the final cover geocomposite is reasonable for the expected application and whether further design measures could be incorporated to enhance functionality of the final cover geocomposite.

116. Appendix G-6, Calculation Sheet: EPA notes that the values in Table 2 for the pipe slopes for Culverts 3 and 4 are actually 20% slope, not the 2% shown in the table. However, the correct value is used in the calculations, which use a modeling average of 20% slope over the length of the drain line. GE shall revise accordingly.

117. Appendix H, Section 3.4, 1st sentence: In the SIP, GE shall provide the date and source(s) of the "current regulatory criteria" for the federal regulations.

118. Appendix H, Section 5.2: A potential concern of the proposed vernal pool modification would be the introduction of too much water to the vernal pool throughout the year, making it a permanently flooded wetland, or too little, thus inhibiting vernal pool function. In the Revised Final Design Plan, GE shall develop and present a hydrologic analysis (including field observations and/or assessment of surface flow and water table conditions) to make a provisional estimate of the anticipated hydrology of the vernal pool from the proposed 36-acre increase in the watershed (as well as other changes as described in the plan, such as substrate changes to reduce infiltration rates) to ensure it meets the objective of simply extending the spring hydroperiod; and GE shall revise the mitigation design, if necessary, based on that hydrologic analysis.

119. Appendix H, Section 5.2: During construction, to the extent required by the hydrologic analysis on which the design is based, GE shall make an effort to integrate the new compacted silt layer with the existing lower-permeability soil layer beneath the existing vernal pool at or near to the connection point to the existing vernal pool. The intent of this effort is to avoid creating a preferential pathway of higher conductivity soils that could drain vernal pool water.

120. Appendix H, Section 5.2: As part of the forthcoming vernal pool monitoring plan, GE shall track monthly precipitation via the on-site meteorological monitoring station versus vernal pool water levels and note any observations of deer herbivory or other wildlife damage to the plantings that will be assessed during each monitoring effort.

121. Appendix H, Section 6.1: GE shall make best efforts in its construction scheduling so that removal of trees greater than 3 inches DBH take place within the USFWS window (1 November to 31 March of the calendar year), unless a tree survey has been conducted to verify that the trees proposed for removal do not contain any potential bat roosting habitat.

122. New Addendum: GE shall prepare a new addendum to the Revised Final Design Plan that provides details regarding (a) the conceptual design and location of the on-site UDF leachate treatment system and (b) the conceptual design and location of the on-site dewatering facility at the UDF. Subsequent refinements to the design of these facilities shall be included in subsequent versions of that addendum. Note that implementation schedules and operation, monitoring, and maintenance activities for these facilities shall be included in the Revised OMM Plan for the UDF in accordance with a separate conditional approval letter from EPA.

EPA reserves all of its rights under the Decree, including but not limited to, the right to perform and/or require additional sampling, or response actions, if necessary, to meet the requirements of the Consent Decree. If there is any conflict between the Performance Standards as stated in the submittal and the Performance Standards as stated in the Consent Decree or the Revised Final Permit, the Consent Decree and/or the Revised Final Permit shall control.

Sincerely,

RICHARD FISHER Digitally signed by RICHARD FISHER
Date: 2024.09.12 11:42:51 -04'00'

Richard Fisher
GE Facility Project Manager

cc:

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