STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Land Protection – Remediation Branch
Oak Ridge Office
761 Emory Valley Road, Oak Ridge, Tennessee 37830

June 11, 2026

Mr. Roger Petrie
Federal Facility Agreement Manager
U.S. Department of Energy
Oak Ridge Office of Environmental Management
Post Office Box 4067
Oak Ridge, TN 37831

Dear Mr. Petrie

RE: Comments on the Fiscal Year 2026 Phased Construction Completion Report for the Oak Ridge Reservation Environmental Management Waste Management Facility (DOE/OR/01-3028&D1)

The Tennessee Department of Environment and Conservation (TDEC) Division of Land Protection – Remediation Branch, Oak Ridge Office received the subject document on March 26, 2026. TDEC appreciates the meetings held on November 19, 2025; December 10, 2025; and February 11, 2026, during which the Federal Facility Agreement (FFA) parties collaboratively evaluated groundwater conditions in the southeast area of the Environmental Management Waste Management Facility (EMWMF). TDEC looks forward to continued tri-party evaluation of this area, including revised potentiometric surface discussion and figures in the second draft (D2) of this document, to improve future reporting and minimize the need for additional regulatory comment resolution.

Questions or comments concerning the contents of this letter should be directed to Brad Stephenson at brad.stephenson@tn.gov or by phone at (865) 352-1235.

Sincerely

Eileen Marcillo
Digitally signed by Eileen Marcillo
Date: 2026.06.10 07:10:13 -04'00'

Eileen Marcillo
FFA Project Manager
Division of Land Protection – Remediation Branch
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ENCLOSURE

General Comments:

1. Revise Sections 3.7.1.1, 5.3.6, 5.3.7, and 5.5 to summarize waste acceptance criteria (WAC) compliance for waste in addition to wastewater. Include a discussion of analytic WAC compliance, including the sum of fractions and the inventory of total uranium as of the end of Fiscal Year 2025 (FY25).
2. Insert the text "*40 CFR*" as appropriate in citations of applicable or relevant and appropriate requirements (ARARs), including but not limited to *264.98(e)* on Page 65, 1st paragraph, and *264.97(g)* on Page 40, 1st paragraph.

3. Revise the discussion, figures, and supporting interpretation associated with the potentiometric surface mapping approach in Figures 20, 21, and 24 and Section 5.3.2.1 to clearly describe the methods the U.S. Department of Energy (DOE) used to evaluate groundwater flow conditions in the southeast area of EMWMF. TDEC appreciates the collaborative discussions held on November 19, 2025; December 10, 2025; and February 11, 2026, and requests that DOE incorporate these changes into the next revision of the Phased Construction Completion Report (PCCR).

    a. Revise the potentiometric surface maps to present surfaces generated directly from the corresponding monitoring data without using control points in the southeast portion of the landfill area. Limit interpretation to demonstrated site features, such as the underdrain, and provide supporting justification for additional interpretation.

    b. When implemented for other areas (e.g., along streams), describe the use of control points in the development of the potentiometric surface maps and explain how control point(s) influenced the interpretation of groundwater flow.

    c. Explain what is meant by "groundwater source" and include information supporting the interpretation that a "groundwater source" exists south or east of the disposal cells, including additional examples and supporting data comparing hydraulic responses in wells GW-952 and GW-917/GW-927.

    d. Revise the discussion of storm-response behavior for wells GW-952, GW-927, and GW-917 to provide additional data and analysis supporting the conclusion that a "groundwater source" exists south or east of the disposal cells. Figure 24 shows that GW-927 briefly exhibits a higher hydraulic head than GW-952 during the December/January timeframe; however, groundwater elevations generally decrease downgradient for the remainder of the year. In East Tennessee, seasonal groundwater elevation increases during winter months commonly occur in response to reduced evapotranspiration. The temporary head increase observed at GW-927 may therefore reflect seasonal recharge and groundwater re-equilibration rather than an additional "groundwater source". Revise the discussion to explain why DOE interprets this behavior as evidence of an additional "groundwater source" instead of a seasonal hydrologic response.

    e. Revise Section 5.3.2.1 to include data, observations, or analyses used to support the interpretation that surface water features interact with groundwater in areas along the

boundary of the EMWMF site and how DOE demonstrated interaction between surface water features and groundwater.

f. Combine related discussions, where appropriate, to provide a single, technically consistent explanation of the potentiometric interpretation methodology.

4. Include text in Table D.3, Table 21, and associated sections to clarify that the threshold values (TVs) used in the report do not reflect the most current approved TVs identified in DOE/OR/01-2021&D5 and DOE/OR/01-2734&D1/R2 (UCOR-4156/R5). Clearly state when DOE plans to incorporate the updated TVs into future reports.

ENCLOSURE

Specific Comments:

1. Page 10, Section 3.3, First Paragraph:
    a. Add the FY25 PCCR waste generation forecast value of 3.6 million yd^3.
    b. Revise "about 5 percent" to "about 6 percent."
    c. Add a sentence explaining the reduction in estimated as-disposed waste volume.
2. Pages 12–13, Figures 5 and 6:
    a. Revise the document to explain why the FY26 PCCR uses a WACFACS run date of July 15, 2025, rather than a Q4 run date comparable to prior PCCRs or revise the figures to incorporate all available Q4 data.
    b. Revise the chart titles to reflect that the figures include data beyond Q1 FY2024.
3. Page 18, Section 3.7.1.2, First Sentence: Because this is the first mention of release criteria in the document, revise "release criteria" to "release criteria approved for interim use."
4. Page 25, Section 3.7.2, Table 12: Revise the text and/or Table 12 to consistently report the number of power outages caused by lightning.
5. Page 27, Section 3.7.3, Figure 10: Present all leak detection values associated with Figure 10, either directly on the graph or in an accompanying data table, rather than only presenting values that exceed the notification leakage rate.
6. Page 35, Section 3.14, Second Bullet, and Page 83, Section 6, Second Bullet: Revise "3.6 million yd^3" to "3.4 million yd^3" for consistency with Section 3.3.
7. Page 37, Section 4, Fourth Paragraph: Revise all three instances of "will" to "was to" for clarity and consistency.
8. Page 40, Section 5.2.1; Page 54, Section 5.2.5; Page 55, Section 5.2.6; Page 61, Last Sentence; and Page 80, Section 5.4: Revise the text to consistently specify that DOE will report FY26 monitoring results from recently installed bedrock wells and monitoring locations, including EMWNT-03B, in the FY27 PCCR.
9. Page 40: Revise the discussion of elevated baseline iodine-129 concentrations to include supporting data demonstrating comparable iodine-129 concentrations in groundwater samples collected elsewhere on the reservation and offsite.
10. Pages 44–45, Section 5.2.2, and Table 21: Revise the discussion of tritium results for GW-927 to include the duplicate sample result, associated uncertainty values, and minimum detectable concentration. Explain how the duplicate result supports the interpretation that static electricity in the liquid scintillation counter influenced the analytical result.
11. Pages 47–53, Section 5.3.2: Revise Section 5.2.3 and Figures 13–17 to discuss the increasing concentrations of calcium, magnesium, manganese, and strontium in downgradient groundwater. Although these analytes are not identified as "indicator parameters" in the baseline

report, apparent increasing trends are present at the underdrain and wells GW-920, GW-921, and GW-916. Explain whether DOE has identified the cause of these trends and include any additional information that supports or refutes the interpretation that surface water runoff influences the results. Also discuss whether similar trends occur in wells completed in comparable geologic units elsewhere on the reservation and whether the trends appear to be naturally occurring or associated with landfill operations.

12. Pages 49–53, Groundwater Plots: Revise the x-axes on the groundwater plots to display years rather than the "Oct-YY" format so the figures more clearly present long-term trends.

13. Page 54, Section 5.2.4, Fifth Sentence: Review and revise all references to EMWNT-03A for consistency regarding replacement timing under the revised Sampling and Analysis Plan/Quality Assurance Program Plan.

14. Page 55, Section 5.2.6, Third Bullet: Revise the sentence to read: "…barium in a duplicate sample at GW-922."

15. Page 59, Figure 18, General Note 2: Revise the note to cite Figure 20.

16. Page 65, Section 5.3.2.1, First Paragraph: Clearly identify the criteria used to select the wells and piezometers used to evaluate groundwater flow direction and flow rate. As written, it is unclear why these well pairs were selected and why other shallow monitoring locations were excluded from the evaluation.

17. Page 65, Section 5.3.2.1, Second Paragraph: Explain how DOE evaluated temporal variability and synchronized water-level measurements when preparing potentiometric maps. Alternatively, revise the potentiometric surface maps to reflect contemporaneous or synoptic measurements rather than "long-term monitoring trend data, hydrograph analysis in relation to precipitation events, and cell construction in relation to existing topography (cut-fill relationship)." Standard practice is to base potentiometric surface maps on groundwater levels measured at approximately the same time. "Groundwater elevations…must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction" (*40 CFR §257.93*).

18. Page 78, Section 5.3.7, Third Sentence: Revise the sentence to specify that DOE collects leachate samples from the location identified as EMW-LTINLET in Figure 25.

19. Page 81, Fifth Bullet: Revise the discussion to include clarification like the last bullet in Section 5.3.3, which explains that pH values decrease where wastewater discharged from EMW-VWEIR converges with NT-5.