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

May 17, 2024

Mr. Roger Petrie
Federal Facility Agreement Manager
Oak Ridge Office of Environmental Management
U.S. Department of Energy
Post Office Box 2001
Oak Ridge, Tennessee 37831

TDEC Comments: Explanation of Significant Differences for the Record of Decision for the Disposal of Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Waste, Oak Ridge, Tennessee: Clean Water Act (DOE/OR/01-2972&D1)

Dear Mr. Petrie

The Tennessee Department of Environment and Conservation (TDEC), Division of Remediation - Oak Ridge Office, received the draft (D1) of the subject document on March 26, 2024. TDEC reviewed the document in accordance with the *Federal Facility Agreement (FFA) for the Oak Ridge Reservation (ORR)*. TDEC offers the enclosed comments for resolution in the D2 revision.

Questions or concerns regarding this letter may be directed to Brad Stephenson at the above address, by phone at 865-352-1235, or by e-mail at brad.stephenson@tn.gov.

Sincerely

Randy Young Digitally signed by Randy Young
Date: 2024.05.15 16:24:53 -04'00'

Randy C. Young
FFA Project Manager
Division of Remediation – Oak Ridge Office

Enclosure

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Enclosure – Comments

General Comments

1. Revise the document to provide a roadmap of future documents needed to establish Environmental Management Waste Management Facility (EMWMF) wastewater discharge limits for chemicals and radionuclides.

2. Revise the document to clarify the schedule for applying wastewater discharge limits to EMWMF operations.

3. For clarity, consistency with the EPA Administrator's Dispute Resolution Decision (DRD),[1] and consistency within the document, change *water management* to *wastewater management* where appropriate.

Specific Comments

1. **Page 1, 2nd paragraph, last sentence**
   The ESD should use the exact language from the DRD.[1] Delete language after "this applies solely to" and replace it with "the discharge of effluent that includes radionuclides from landfills constructed as CERCLA response actions at ORR."

2. **Page 1, 3rd & 4th paragraphs**
   The third paragraph discusses *requirements* for managing the discharge of chemicals. The fourth paragraph addresses *development* of discharge limits for radionuclides, stating they will be developed in a follow-on primary document.

   a. For the benefit of the general public, consider clarifying radionuclide discharge limits will be developed in a primary document *as defined in the Federal Facility Agreement for the Oak Ridge Reservation*.[2]

   b. Clarify what that primary document follows. Is it a follow-on document to a report that develops discharge limits for chemicals? If so, specify that document in the third paragraph. This comment also applies to Page 5, Discharge Limits, second paragraph.

3. **Page 1, 6th paragraph & Page 6, 1st full paragraph**
   Revise the link or add an additional link so the public can access the fact sheet directly.

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[1] EPA Administrator's Dispute Resolution Decision: Wheeler, A.R., December 31, 2020, U.S. Environmental Protection Agency, Washington, D.C., letter (and January 19, 2021 follow-up letter) to John A. Mullis II, Oak Ridge Office of Environmental Management, Oak Ridge Reservation, U.S. Department of Energy, Oak Ridge, TN and David W. Salyers, Commissioner, Tennessee Department of Environment and Conservation, Nashville, TN.
[2] DOE, 1992, *Federal Facility Agreement for the Oak Ridge Reservation*, U.S. Environmental Protection Agency, Tennessee Department of Environment and Conservation, and U.S. Department of Energy, Oak Ridge, TN.

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4. **Page 3, 3rd paragraph, 1st sentence**
   For clarity, change "the ROD was signed" to "the EMWMF ROD was signed." After making this change, consider removing "EMWMF" from the following sentence and changing the second use of "ROD" to "CERCLA remedy".

5. **Page 4, Basis for the Document, 1st sentence**
   For clarity, change "to add the CWA as an ARAR" to "to add the CWA and associated regulations as ARARs."

6. **Page 4, Description of Significant Differences**
   a. Delete the first sentence, as it does not describe significant differences from the remedy selected in the EMWMF Record of Decision (ROD).[3]

   b. Clarify how the fourth sentence is consistent with the DRD.

   c. Clarify how wastewater management will continue as described in a primary FFA document that has not been approved by EPA or TDEC and awaits dispute resolution in accordance with the FFA.[4]

7. **Page 5, Discharge Limits, 3rd paragraph**
   a. Delete this paragraph or at least the first sentence. The purpose of this ESD is to add ARARs that authorize landfill wastewater discharges from EMWMF. Discussions about compliance with TDEC 1200-2-11-.16(2) should be deferred to a future document.

   b. If portions of the paragraph are retained, combine with the previous paragraph to clarify the paragraph applies to radionuclides only and replace references to DOE Orders with references to TDEC 1200-2-11-.16(2).

   c. If portions of the paragraph are retained, cite Section K.1.4.1 of the FFS to support selection of BCK 4.5 as the point of exposure.[5]

8. **Page 5, Discharge Limits, last paragraph**
   Explain why a compliance period is necessary and when the follow-on document will be developed. In addition, explain how a compliance period aligns with the statement in the following section that the "ESD will be implemented upon approval of both the ESD and the [SAP/QAPP]...."

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[3] DOE, 1999, *Record of Decision for the Disposal of Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Waste*, U.S. Department of Energy, Office of Environmental Management, Oak Ridge, TN, DOE/OR/01-1791&D3.

[4] DOE, 2014, *Remedial Action Work Plan for the Disposal of Oak Ridge Reservation Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Waste, Oak Ridge, Tennessee*, U.S. Department of Energy, Office of Environmental Management, Oak Ridge, TN, (DOE/OR/01-1874&D4).

[5] DOE, 2022, *Focused Feasibility Study for Water Management for the Disposal of CERCLA Waste on the Oak Ridge Reservation, Oak Ridge, Tennessee*, U.S. Department of Energy, Office of Environmental Management, Oak Ridge, TN, (DOE/OR/01-2664&D4/R1).

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9. **Page 5, Secondary Waste from Landfill Wastewater Management**
   Specify what secondary waste will be generated and/or provide examples to clarify this does not include liquid waste.

10. **Page 5, EPA and TDEC Comments, last sentence**
    Should this sentence refer to the forthcoming D5 SAP/QAPP instead of the 2734&D1/R1 (UCOR-4156/R4) version, which DOE issued in 2017, or is this citation intended to refer to a subsequent future SAP/QAPP that establishes discharge limits? Where does the RAWP revision fit in?

    TDEC approved the 2016 DOE/OR/01-2734&D1 (UCOR-4156/R3) version of the SAP/QAPP for *interim* use. As stated in DOE's March 29, 2018, letter, "In the interim, the existing D1 version (UCOR- 4156/R3)...has been approved by all parties and is being followed." Therefore, it appears the D1 ESD incorrectly cites the DOE/OR/01-2734&D1/R1 (UCOR-4156/R4) version, which differs in content and lacks approval by TDEC or the U.S. Environmental Protection Agency (EPA). TDEC requests that the U.S. Department of Energy (DOE) amend the ESD to cite the correct reference.

    The roadmap requested in General Comment 1 may help clarify some of these questions. The April 2023 project team meeting minutes state the plan for the forthcoming SAP/QAPP revision "is to address resolved issues (not discharge limits); once discharge limits are finalized, SAP/QAPP will be revised again. (Note that EMDF ROD will have an ESD to incorporate the discharge limits.)"

11. **Page 6, Public Participation Compliance**
    The second bullet is unclear. Revise it to be a complete sentence.

12. **Page A-3, Footnote 3**
    a. This footnote appears to limit compliance to *instream water quality criteria*. Rephrase to *...compliance with applicable standards for relevant parameter for release....*

    b. Consider separating the footnote text into more than one sentence for clarity.

13. **Page A-4, Section A.2, 2nd paragraph**
    Delete *–criteria that are applied and enforced as final limits for these COCs–* from the penultimate sentence. As noted in the third paragraph on Page 1 and the last paragraph in Section A.4, discharge requirements and effluent limits consider other factors in addition to the AWQC.

14. **Page A-4, Section A.2, last paragraph**
    List the parameters covered by TDEC 0400-40-03-.06 for this discharge.

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15. **Pages A-7 through A-19, Table A.1**
Revise the table to include the ARARs and footnotes listed in the attachment.

16. **Page A-8, Table A.1, Requirements, 2nd paragraph**
    a. As a precursor to the following comment, add ROD Table 2.9 as Table A.3, just as the ESD includes ROD Table 2.8 as Table A.2. The missing table provides instream concentrations for water and fish tissue based on $1x10^{-5}$ Excess Lifetime Cancer Risk (ELCR).

    b. Revise the entry under *Requirements* as indicated in red below to recognize the narrative criterion for toxicity in TDEC 0400-40-03-.03(4)(j) is "applicable" for conventional CWA pollutants and "relevant and appropriate" for radionuclides in accordance with the DRD, which directs the establishment of discharge limits for radionuclides in the same manner as other carcinogens.

> Water shall not contain toxic substances that will render the water unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. See Tables A.2 and A.3 for lists of criteria for key contaminants of concern, including radionuclides, in landfill wastewater, leachate, and contaminated stormwater.*
>
> *In accordance with the EPA Administrator's Dispute Resolution Decision, this rule is a "relevant and appropriate" requirement for radionuclides under the AEA categories excluded from the CWA definition of pollutant at 40 CFR 122.2 as carcinogens not otherwise provided with numeric standards in the water quality standards rule table for a steam designated for recreational use.

The paragraph revised above is a narrative ambient water quality standard (AWQS), but a narrative standard needs to be translated into numeric limits (water-quality based effluent limits, or WQBELs). The generic carcinogenic discharge level at $1x10^{-5}$ ELCR relates back to this narrative standard for toxicity. Therefore, it applies to radionuclides as it would any chemical that would have adverse effects related to fish consumption.

17. **Page A-12, Table A.1**
Revise the entry under *Prerequisite* as indicated below to show 40 CFR 122.44(d)(1)(vi)(A) as "applicable" for conventional CWA pollutants and "relevant and appropriate" for radionuclides to translate narrative criteria into numeric limits.

> Determination of effluent limits to translate from narrative criteria where a State has not established a water quality criterion for a specific pollutant*—applicable
>
> For radionuclides regulated as source, byproduct and special nuclear material and excluded from the regulatory definition of pollutant under the CWA regulations, in

accordance with the EPA Administrator's Dispute Resolution Decision dated December 31, 2020 – **relevant and appropriate**

*While the definition of pollutant under 40 CFR 122.2 excludes radionuclides subject to Atomic Energy Act (AEA) regulations, the discharge criteria are "relevant and appropriate" in accordance with the EPA Administrator's Dispute Resolution Decision.

Attachment

Action	Requirements	Prerequisite	Citation
Inclusion of schedule for compliance[1] to meet AWQS			40 CFR 122.47 TDEC 0400-40-05-.08(h)
Discharges subject to water quality based effluent limits for protection of receiving stream[2]	(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. (i) Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an	Discharge to stream classified for designated uses - **applicable** for pollutants as defined by 40 CFR 122.2 **relevant and appropriate** for source, byproduct and special nuclear material regulated under the Atomic Energy Act (AEA) excluded from definition of pollutant at 40 CFR 122.2	40 CFR 122.44(d)(1)(i)

[1] 0400-40-(77) "Schedule of compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, condition of a permit, other limitation, prohibition, standard, or regulation. This term includes, but is not limited to, schedules authorized by national effluent limitations guidelines or by Tennessee's water quality standards.

[2] Additional surface water and/or fish tissue monitoring will likely be necessary to enable calculation of discharge limits to ensure compliance with this ARAR and the EPA Administrator's Dispute Resolution Decision.

	excursion above any State water quality standard, including State narrative criteria for water quality.		
Use of internal monitoring point	(q) When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams. In those instances, the monitoring required shall also be applied to the internal waste streams. Limits on internal waste streams will be imposed only when the rationale sets forth the exceptional circumstances which make such limitations necessary, such as when the final discharge point is	Compliance with technology-based standard applied to effluent prior to mixing - applicable	TDEC 0400-40-05-08(1)(q) 40 CFR 122.45(h)(1)-(2)

	inaccessible (for example, under water), the wastes at the point of discharge are so diluted as to make monitoring impracticable, or the interferences among pollutants at the point of discharge would make detection or analysis impracticable.		
Monitoring for radionuclides to ensure discharge limits are met	To assure compliance with permit limitations, requirements to monitor: (i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit; (ii) The volume of effluent discharged from each outfall; (iii) Other measurements as appropriate including pollutants in internal waste streams under §122.45(i); pollutants in intake water for net limitations under §122.45(f); frequency, rate of discharge, etc., for non-continuous discharges under §122.45(e);	**relevant and appropriate** for source, byproduct and special nuclear material regulated under the Atomic Energy Act (AEA) excluded from definition of pollutant at 40 CFR 122.2	40 CFR 122.44(i)(1)

	pollutants subject to notification requirements under§ 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR 503; or as determined to be necessary on a case-by-case basis pursuant to Sect. 405(d)(4) of the CWA.		
Addressing toxicity of uranium	When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity. The waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the waters unsafe	**relevant and appropriate** for source, byproduct and special nuclear material regulated under the Atomic Energy Act (AEA) excluded from definition of pollutant at 40 CFR 122.2	40 CFR 122.44(d)(1)(iv) TDEC 0400-40-03-.03 TDEC 0400-40-05-.08(1)(d)

	or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or may result in toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. Toxic effluent limitations shall be based on consideration of the toxicity of the pollutant, its persistence, its degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affective organisms, and the nature and extent of the effect of the toxic pollutant on such organisms.		