



ENVIRONMENTAL COMPLIANCE &amp;

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November 18, 2022

AREA COMPLETION PROJECTS

Mr. Brian T. Hennessey, SRS Remedial Project Manager  
Infrastructure and Area Completion Division  
U. S. Department of Energy  
Savannah River Operations Office  
Post Office Box A  
Aiken, South Carolina 29802

Re: 488-4D Ash Landfill Annual Groundwater Monitoring Report – 2021 Data, SEMS Number: 63  
(SRNS-RP-2022-00559, Revision 0, July 2022) received July 29, 2022.

Dear Mr. Hennessey:

The Department has completed its review of the above referenced document pursuant to the Savannah River Site Federal Facility Agreement. The attached comments were generated as a result of this review. These comments must be addressed prior to final approval of the above referenced document. As specified in Section XXII, Review/Comment on Documents, the appropriate technical staff will be available to participate in a joint DOE/EPA/DHEC comment resolution meeting to discuss these comments, if necessary.

To schedule a meeting to resolve the attached comments or to obtain further information, please contact me at (803) 898-4331.

Sincerely,

**Susan B. Fulmer** Digitally signed by Susan B. Fulmer  
Date: 2022.11.18 08:03:06 -05'00'

Susan B. Fulmer, P.G., Manager  
Federal Remediation Section  
Division of Site Assessment, Remediation, Revitalization  
Bureau of Land and Waste Management

cc: C. L. Bergren, SRNS-ACP (Signed Original)  
Travis Fuss, Aiken Environmental Affairs Office (via email)  
Jon Richards, EPA Region IV  
Heather Cathcart, BLWM

**South Carolina Department of Health and Environmental Control Comments on:**  
488-4D Ash Landfill Annual Groundwater Monitoring Report – 2021 Data, SEMS Number: 63  
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Specific Comments

1. Table of Contents, List of Figures, page iii. Please add a figure showing where the unit is located at SRS.
2. Section 1.0, Site Description and Background, page 1. The document provides little background on the geology/hydrology at the unit, aside from discussions of groundwater elevations, analytical results, and contaminant plumes. Please add a new section to the document that briefly describes observed hydrology at the unit, including but not limited to the aquifer of concern at the unit (e.g., the Upper Three Runs Aquifer [UTRA]), relevant aquifer zones at the unit (e.g., the upper aquifer zone [UAZ] of the UTRA), the types of soils and materials found in the aquifer (e.g., sands, silts, clay layers), and any confining units present.
3. Section 2.0, Groundwater Monitoring, page 1. The document states that monitoring wells DCB078, DCB079, and DCB080 are located downgradient of the landfill. Based on the well locations presented in Figure 1, this statement is partially incorrect. If the entire area outlined in red on Figure 1 is the 488-4D landfill, DCB078 and DCB079 are located on the southeastern edge of the landfill, while observed groundwater flow is towards the southwest. These two wells are cross-gradient from the landfill. Please correct this statement.
4. Section 2.1, Groundwater Flow, page 2. The term "water table" refers to the top of the saturated zone (i.e., the boundary that defines the bottom of the unsaturated zone and the top of the saturated zone). The statement in the document that "The water table...flows toward the southwest" does not make sense. Please correct this statement to state that groundwater flows toward the southwest.
5. Section 2.1, Groundwater Flow, page 2. It is unclear what is meant by the description of groundwater elevations over the last four years as "fairly stable," as there were significant seasonal fluctuations between May 2021 and November/December 2021 according to Table 3. For example, depth to groundwater in DCB 8 increased from 11.7 feet in May 2021 to 14.44 feet in December 2021, a difference of nearly three feet. While these seasonal fluctuations are not uncommon in South Carolina, the description of groundwater levels as fairly stable is somewhat misleading. Please address this.
6. Section 2.1, Groundwater Flow, page 2. Please add hydrographs for the five 488-4D wells so that long-term changes in groundwater elevations can be evaluated.
7. Section 2.2, Groundwater Constituents and Parameters, page 2. Please change the wording of the first sentence from, "The five (5) wells are monitored..." to, "The five (5) 488-4D Ash Landfill wells are monitored..."

**South Carolina Department of Health and Environmental Control Comments on:**  
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8. Section 3.0, Results, page 2. Section 3.0 indicates that groundwater analytical samples were collected in May 2021, and groundwater elevation measurements were collected in November/December 2021. Please edit the section to indicate that groundwater elevation measurements were also collected in May 2021, as indicated in Section 2.1 and Table 3.
9. Section 3.1, Results Above Regulatory Threshold Limits, page 3. Tritium is listed as a constituent with estimated concentrations of 63.2, 31.2 and 33 pCi/mL (all above MCL of 20 pCi/mL) presented in Table 3. Using this same logic, lead should also be included in this section as Table 3 shows an estimated concentration of 29.6 µg/L (above MCL of 15 µg/L).
10. Figure 2, Beryllium Concentrations at the 488-4D Ash Landfill, Second Quarter 2021, page 7. The beryllium plume > 4 µg/L is drawn on the figure to include surface water station DSWM-4A, but the figure indicates DSWM-4A was designated non decision data with an estimated value of 2.01 µg/L during the most recent sampling event. Please address whether this interpretation of the current extent of the plume is correct and update the figure if appropriate.
11. Table 3, 488-4D Ash Landfill Groundwater Monitoring Data, unnumbered page. The data for DCB078 indicate that 24 gallons of groundwater were purged from the well prior to sampling in May 2021, while only 2 gallons were purged in November 2021. Please clarify why the volume purged was drastically different between the two sampling events when depth to groundwater in the well was relatively similar.
12. Table 3, 488-4D Ash Landfill Groundwater Monitoring Data, unnumbered page. The depth to water column is missing values in several cells, while the associated groundwater elevation cells have values. Please add the missing depth to water values for these cells since depth to water measurements are typically used to calculate groundwater elevations.
13. Table 3, 488-4D Ash Landfill Groundwater Monitoring Data, unnumbered page. Table 3 indicates that a “lab duplicate” sample was analyzed from DCB080. Appendix B of the 2020 GWMR for D-Area was reviewed but additional information on duplicate sampling procedures was not available. Please address the following questions regarding the lab duplicate.
  - a. Was the duplicate sample for DCB080 collected on the same date as the other sample (i.e., 5/12/21)? If so, please add this date to Table 3.
  - b. Why was the duplicate sample only analyzed for sulfate and tritium and not the metals analyzed for in the other wells?