



REGION 4

ATLANTA, GA 30303

October 23, 2025

ENVIRONMENTAL COMPLIANCE &

OCT 23 2025

SRNS-OS-2025-00324

AREA COMPLETION PROJECTS

Mr. Matthew Baker
Acting FFA Remedial Project Manager
Remediation, Deactivation, and Decommissioning Division
U.S. Department of Energy
Savannah River Operations Office
P.O. Box A
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EPA Comments: Treatability Study Data Report for Groundwater Injection and Discharge Canal Neutralization at the D-Area Groundwater Operable Unit (OU) (U) 2024 Data and Information SEMS Number: 63 SRNS-TR-2025-00218 Revision 0, May 2025

Dear Mr. Baker:

The U.S. Environmental Protection Agency, Region 4 (EPA) has reviewed the Treatability Study Data Report for Groundwater Injection and Discharge Canal Neutralization at the D-Area Groundwater Operable Unit (OU) (U) 2024 Data and Information SEMS Number: 63 SRNS-TR-2025-00218 Revision 0, May 2025. EPA's comments are attached.

If you have any questions or require additional information, please contact Brianne Martin at (678) 906-8075.

Sincerely,

BRIANNE MARTIN

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MARTIN
Date: 2025.10.23 10:28:33 -04'00'

Brianne Martin, RPM
Federal Facilities Branch
Superfund and Emergency Management Division

cc: C.L. Bergren, SRNS-ACP
Susan Fulmer, SCDES

GENERAL COMMENTS

1. It is unclear whether operation of the treatability study is impacting and facilitating expansion and migration of contaminated groundwater at the D-Area Groundwater OU (DAG OU). A review of the plume maps prepared for beryllium and pH (acidity) between second quarter of 2020 (2Q20) and second quarter 2024 (2Q24) (see Figure 2, D-Area Groundwater 2Q24 pH and Beryllium Plume and Figure 3, D-Area Groundwater 2Q20 pH and Beryllium Plume) show that the plumes have expanded and migrated since 2Q20. It is noted that a remedial facility investigation/remedial investigation (RFI/RI) is currently underway at the DAG OU to determine the nature and extent of groundwater contamination that includes tritium, volatile organic compounds (VOCs) (primarily trichloroethylene [TCE]), metals, and per- and polyfluoroalkyl substances (PFAS). According to the Report it's likely to take at least 10 to 110 years of injection to substantially change the aquifer conditions over the originally estimated three years of groundwater injection based on the further reevaluation of the hydrological properties and data collected to date. As such, the Report recommends that the Savannah River Site (SRS) will continue to operate the DAG OU Treatability Study for at least another year; however, it appears that the operation of the treatability study should be placed on hold until the RFI/RI has been completed and the groundwater contamination has been sufficiently delineated laterally and vertically. Also, reevaluation for further operation of the treatability study at the DAG OU should be performed as it is unclear whether it may interfere with future remedial actions planned for groundwater. Please revise the Report to include a discussion on the potential expansion and migration of contaminated groundwater at the DAG OU and recommend the operation of the treatability study be placed on hold until the RFI/RI has been completed.
2. The text states, in Section 2.0 (Project Description), that the refined estimate of approximately 154.2 million gallons needed to raise the water elevation by 5 feet subsequently raised the number of pore volumes needed for the study; however Section 5.1.1 (Groundwater Injection Observations) states that, "It can be observed that 80% of the early 2024 refined estimate of one pore volume (approximately 154.2 million gallons) of water, has been injected into the 10 injection wells in about 1,000 days." This contradicts the previous statement that indicates an increase in the number of pore volumes needed (e.g., ten pore volumes). Please clarify the number of pore volumes that were injected into injection wells.
3. There are inconsistencies with the information presented in Table 1 (D-Area Treatability Study 2024 Monitoring Network and Sampling Schedule). Various samples (e.g., DCB 3A) which were only scheduled for water elevation measurements, have analytical results as shown in Table A-1 (D-Area Groundwater Treatability Study Data Table (2024)) and associated time-series plots. Further, there are monitoring stations (e.g., DSWM-8) with analytical data and time-series plots that are missing from Table 1. Please revise the text including tables, figures, and/or appendices to include accurate monitoring locations and indicate which measurements were conducted.
4. Several of the figures do not have north arrows. North arrows are missing from Figures 6 (D-Area Treatability Study Injection Wells, Reactive Structures, and Projected Water Table Elevation), 7 (D-Area Injection Wells Installed and Production Well Piping), 10 (D-Area Treatability Study Monitoring Locations), and 11 (D-Area Groundwater OU UTRA Potentiometric Surface (2Q2024)). Please revise these figures to include a north arrow.

SPECIFIC COMMENTS

1. **Section 4.0 Sampling and Analysis, Page 6 of 76:** The second paragraph of the text does not account for all the monitoring stations. The text states, "Seventeen (17) wells are only visited for water elevations, including 4 that were added to water elevation monitoring starting in first quarter (1Q)2024 (DCB 51D) or second quarter (2Q)2024 (DCB 54, DCB079, and DCB080)." However, according to Figure 10 (D-Area Treatability Study Monitoring Locations) eighteen (18) wells are used for water elevation monitoring (including DCB 45C). In addition, it is unclear which wells were added to water level elevation monitoring starting in the first or second quarter of 2024. Contrary to the text, Table 1 (D-Area Treatability Study 2024 Monitoring Network and Sampling Schedule) only shows three stations which were added to water elevation monitoring (i.e., DCB 51D, DCB 54, and DCB079) instead of four. Further, the section does not discuss monitoring station DCB078

which was added to water elevation monitoring and sampling in the second quarter of 2024. Please revise the text to account for all of the 41 monitoring locations and reconcile the discrepancies.

2. **Section 4.0 Sampling and Analysis, Page 7 of 76:** The fourth paragraph of the text is missing a discussion of stream flow measurements at monitoring station DSWM-10 which includes monitoring and sampling (see Table 1, D-Area Treatability Study 2024 Monitoring Network and Sampling Schedule). Please revise the text to include monitoring station DSWM-10 in the discussion.
3. **Section 5.1.1, Groundwater Injection Observations, Page 9 of 76:** It is unclear how the target injection flow rate was calculated ranging from 5 gallons per minute (gpm) to 18 gpm. The text should provide a rationale for arriving at the target injection flow rate and include calculations associated with the flow rates. Please revise the text to include calculations for the target injection flow rate
4. **Section 5.2, CaCO₃ Reactive Structures, Page 14 of 76:** It is unclear if the proposed semi-annual maintenance activities to remove and reduce debris (e.g., sediment buildup and leaf drop litter) will be sufficient. The text does not mention whether supplemental maintenance activities will be coordinated with the occurrence of major weather events (e.g., heavy or prolonged rain events) as seen in the past when Hurricane Helene made landfall. The text should consider supplemental maintenance activities aside from the semi-annual activities during major weather events to ensure upkeep of the two reactive structures. Please revise Section 5.2 to include supplemental maintenance activities if weather events warrant the need.
5. **Table 1, D-Area Treatability Study 2024 Monitoring Network and Sampling Schedule, Page 22 of 76:** The table is missing the monitoring station DCB 45C (monitoring well). Based on the text, DCB 45C was monitored monthly for water levels and is depicted on Figures 10 through 12. Please revise the table to include DCB 45C.
6. **Appendix B, Water Level Hydrographs, Pages B-1 through B-32:** It is unclear why several monitoring stations are included in the hydrographs that were not part of the 2024 schedule, as outlined in Table 1. For example, on Page B-8, the hydrograph shows water levels for stations DCB 8 and DCB 8C, however DCB 8C was not included in the monitoring network schedule. The text and/or appendix should include a rationale for monitoring station selection as it differs from the proposed schedule. In addition, there is no hydrograph for station DCB 54 to illustrate the change in water levels over time. Further, the hydrograph on Page B-28 includes monitoring stations DCB 078 and DCB 47C; however, DCB 47C is not depicted in the text, figures, or tables. Please revise the Report to include a rationale for the selection of water level monitoring stations and reconcile the discrepancies.
7. **Appendix C, Times-Series Plots of pH, Aluminum, Beryllium, Cobalt, Iron, Nickel, and Sulfate, Page C-3:** It is unclear why monitoring station DCB 3A, which was only visited for water elevation measurements, is included in Appendix C (Times-Series Plots of pH, Aluminum, Beryllium, Cobalt, Iron, Nickel, and Sulfate). In addition, Appendix C includes a times series plot for pH for monitoring station DSWM 8; however, this monitoring station is not included in the sampling schedule. The text should clarify which monitoring locations identified in Table 1 required field measurements and update the table if necessary. Please revise the text to clarify which locations required field measurements.

MINOR COMMENTS

1. **Section 5.1.3, Groundwater pH and Analytical Observations, Page 12 of 76:** The last sentence does not define the term GA, as stated “Results from new well DCB087C do show higher pH levels and lower metal concentrations than other lower UTRA well clusters and results are more similar to the GA well (DCB087D) results.” Please define the term GA in the section and/or acronyms list.

2. **Appendix A, D-Area Groundwater Treatability Study Data Tables:** Appendix A is missing page numbers for Pages A-3 through A-5. Also, the appendix incorrectly lists a total of two pages (A-1 through A-2). Please revise the text to include page numbers for all pages of the appendix.