



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 4
 ATLANTA FEDERAL CENTER
 61 FORSYTH STREET
 ATLANTA, GEORGIA 30303-8960

August 07, 2023

ENVIRONMENTAL COMPLIANCE &

Mr. Brian Hennessey, 730-B
 SRS Remedial Project Manager
 Savannah River Operations Office
 Area Completion Projects
 Post Office Box A
 Aiken, South Carolina 29802

AUG - 7 2023

AREA COMPLETION PROJECTS

Dear Mr. Hennessey:

The U.S. Environmental Protection Agency (EPA) has reviewed the 2023 Groundwater Monitoring Report for the D Area Groundwater Operable Unit, 2021-2022 Data, SEMS #63, Revision 0, March 2023.

EPA cannot approve the above mentioned report until the comments below have been addressed. As always, should you have any questions or concerns, please feel free to call me at on my cell number 404-229-9500.

Sincerely,
**DIEDRE
 LLOYD**

Digitally signed by
 DIEDRE LLOYD
 Date: 2023.08.07
 15:57:20 -04'00'

Diedre Lloyd
 Senior Remedial Project Manager
 DOD Section
 Restoration & Sustainability Branch
 Superfund Emergency & Management Division

cc: Angelia Holmes, DOE-SRS, Brian Hennessey, DOE-SRS, Phil Prater, DOE-SRS, Karen Adams, DOE-SRS, Chris Bergren, SRNS-ACP (Signed Original), Susan Fulmer, SCDHEC;

**EPA COMMENTS ON THE
2023 GROUNDWATER MONITORING REPORT
FOR THE D-AREA GROUNDWATER OPERABLE UNIT
SEMS #63, REVISION 0, DATED MARCH 2023
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

EPA GENERAL COMMENTS:

1. It is unclear if the two groundwater sampling events planned to occur prior to a RCRA Facility Investigation/Remedial Investigation (RFI/RI) scoping meeting will include the groundwater and surface water monitoring network consistent with the D-Area Groundwater Operable Unit (DAG OU) annual monitoring requirements. The 2023 Groundwater Monitoring Report for the D-Area Groundwater Operable Unit (U), 2021 – 2022 Data, SEMS Number: 63, SRNS-RP 2023-00261, Revision 0, March 2023 (the 2023 GMR) does not discuss which wells will be sampled and what the analysis will include for the sampling events conducted prior to the RFI/RI scoping meeting. Please revise the 2023 GMR to discuss if the sampling events conducted prior to the scoping meeting will be performed consistent with DAG OU annual monitoring requirements. If not, provide a list of wells for the two sampling events, including the proposed analysis for each well.

SPECIFIC COMMENTS

1. **Section 3.0, Monitoring Results, Page 9:** Monitoring well DAP 9 could not be sampled during the second quarter 2022 (2Q2022) sampling event due to excess sediment in the screen zones; however, it appears DAP 9 was sampled during the fourth quarter 2022 (4Q2022) sampling event and it is unclear if DAP 9 was redeveloped to remove the sediment from the screened zones. Please revise the text to describe if DAP 9 was redeveloped between the 2Q2022 and 4Q2022 sampling events. If no redevelopment was undertaken, please clarify what conditions were different between the 2Q2022 and 4Q2022 sampling events.
2. **Section 3.0, Monitoring Results, Pages 9 and 10:** The text states groundwater results were compared to United States Environmental Protection Agency (USEPA) Maximum Contaminant Levels (MCLs), National Secondary Drinking Water Standards (NSDWS) or Regional Screening Levels (RSLs) if available; however, there is no discussion of what regulatory screening criteria were used for surface water samples. Please describe what screening levels were used for surface water results.
3. **Section 3.0, Monitoring Results, Page 10:** Additional analytical samples were collected to support a “pre-work plan” characterization effort; however, the text does not describe if the work plan reference is to the upcoming RFI/RI. Please revise the text to provide a better description of the work plan.

4. **Section 3.1, (Low pH Coal Leachate) Plume, Pages 10 and 11 and Section 5.1.1 Metals (Low pH Coal Leachate) Plume, Page 22:** Based on groundwater results from 2021 and 2022 the low pH plume contains a number of metals including ferrous iron; however, there are no ferrous iron results presented in the 2023 GMR. Please include a discussion of ferrous iron results in groundwater.
5. **Section 3.1, Metals (Low pH Coal Leachate) Plume, Page 12:** Total chromium was detected above 100 micrograms per liter ($\mu\text{g/L}$) in monitoring well DCB 21B during 4Q2020 (142 micrograms per liter [$\mu\text{g/L}$]) and 2Q2021 (133 $\mu\text{g/L}$) and in monitoring well DCB 22A during 4Q2020 (168 $\mu\text{g/L}$), therefore, hexavalent chromium analysis was conducted on these samples; however, hexavalent chromium was only detected in DCB 21B at a concentration of 28 $\mu\text{g/L}$ during 4Q2021. Please discuss why hexavalent chromium results do not correlate with total chromium results.
6. **Section 3.1, Metals (Low pH Coal Leachate) Plume, Page 13:** Beryllium, cobalt, aluminum, manganese, iron and sulfide were detected in surface water in one or more samples above applicable regulatory criterion and the text states, “*Since groundwater discharges to surface water or surface water sampling features intersect groundwater, surface water contaminant concentrations are similar to groundwater conditions.*”, which is supported by the discussion of beryllium, aluminum and sulfate groundwater results; however, results for cobalt, manganese and iron in groundwater are not discussed in the text. Please include a discussion of groundwater results for cobalt, manganese and iron to support the statement that surface water concentrations are similar to groundwater conditions.
7. **Section 3.2, Volatile Organic Compound Plume, Page 14:** The text states trichloroethene (TCE) concentrations in monitoring wells have decreased with the exception of monitoring well DCB 26AR, but the increases in concentrations over the last three years have stabilized recently; however, according to Appendix E (Time Series Plots, Page E-403 of E-470), TCE concentrations in DCB-54 have increased from less than the MCL in 2011 to approximately 20 $\mu\text{g/L}$ in 2022. Please include a discussion for this apparent increasing TCE trend in monitoring well DCB-54.
8. **Section 3.3, Tritium Plume, Page 15:** The text states tritium contaminant trends suggest the plume source is depleted and attenuating; however, according to Appendix E (Time Series Plots, Page E-448 of E-470), tritium concentrations in DCB-54, which is located less than 500 feet away from the D-Area Ash Basin Wetlands, have increased from less than 1 picocuries per milliliter (pCi/mL) in 2018 to approximately 8 pCi/mL in 2022. Although it is acknowledged that the regulatory standard for tritium in 20 pCi/mL, please include a discussion for this apparent increasing tritium trend in monitoring well DCB-54.
9. **Section 3.4, PFAS Plume, Page 17:** Low concentrations of per- and polyfluoroalkyl substances (PFAS) were detected in field blanks and rinsate blanks; however, the text does not describe if these PFAS detections in the quality control samples impacted data usability. Please revise the text to discuss if data quality and usability were impacted due to the detection of PFAS in quality control samples and include a discussion that explains the presence of PFAS.
10. **Section 4.2, Contaminant Migration, Page 20:** The text states the low pH plume contains mobile (aluminum, beryllium, cobalt, iron and manganese) and immobile metals (cadmium, chromium, lead, nickel and uranium); however, Section 3.1 [Metals (Low pH Coal Leachate) Plume] also states

mercury, antimony, arsenic, copper, nickel, selenium, and thallium are present in the acidic plume at concentrations exceeding applicable screening criteria. Please revise the text to describe if these metals are considered mobile or immobile.

- 11. Appendix C, DAG OU Data Tables, Table C-7 4Q2022 D-Area PFAS Sampling Summary Table, pdf Page 179 to 182:** The format for the last three pages of the table appears to be incorrect as no sample identification numbers are presented. Please revise the table to include sample identification numbers and correct the format so it is usable.
- 12. Appendix D, DAG Figures, Figure D-8, Potentiometric Surface of the Upper Three Runs Aquifer, 2Q2022, Page D-19 of D-88, PDF Page 219:** According to the figure, groundwater flow in the Upper Three Runs Aquifer is to the south-southwest towards the ash wetlands; however, according to the map, groundwater also flows in the west-southwesterly direction, towards the Savannah River. Please add flow path arrows showing groundwater also flows to the west-southwest towards the Savannah River.
- 13. Appendix D, DAG Figures, Figure D-23, Trichloroethylene (TCE) Concentrations in the Upper Three Runs Aquifer, 2Q2022, Page D-49 of D-88, PDF Page 249:** TCE was detected above the MCL in monitoring wells DUT001, DCB 56, DCB 60, DRW 1, DCB 33C and DCB 8C; however, there are no monitoring wells located to the northwest of DUT001, north of DCB 56, east/southeast of DCB 60 and DRW 1 and east of DCB 33C and DCB 8C to bound the extent of the TCE plume. Please revise the figure to dash the 5 µg/L isoconcentration contour line near these wells to indicate the lateral extent of TCE contamination is inferred. Additionally, please revise the 2023 GMR to discuss whether the noted data gaps will be addressed at part of the RFI/RI by installing monitoring wells northwest of DUT001, north of DCB 45, east/southeast of DCB 60 and DRW 1, and east of DCB 33C and DCB 8C to bound the lateral extent of the TCE plume.