Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

JUL 16 2024

Ms. Susan B. Fulmer, P. G., Manager
Federal Remediation Section
Division of Site Assessment, Remediation and Revitalization
Bureau of Land and Waste Management
South Carolina Department of Environmental Services
2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Savannah River Site Remedial Project Manager
Superfund Division
U. S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Savannah River Site's Responses to the Regulatory Comments on the P-Area Groundwater (PAGW) Operable Unit Data Summary Tables for April 2022 through March 2023, SEMS Number: 81

The U.S. Department of Energy (DOE) is submitting the subject comment responses for your review. The South Carolina Department of Environmental Services' (SCDES) and U.S. Environmental Protection Agency's (EPA) comments were received on April 10, 2024, and April 17, 2024, respectively. This report will not be revised; however, all comment responses will be included in the next report, as applicable. Please review the enclosures and provide your approval within thirty (30) days from receipt. The effort and time that the EPA and the SCDES have provided on this operable unit are greatly appreciated.

Questions from you or your staff may be directed to me at (803) 952-7805, or the DOE Operable Unit Manager, Mr. Philip Prater, at (803) 952-9333.

Sincerely,

AVERY HAMMETT

Digitally signed by AVERY HAMMETT
Date: 2024.07.16 10:03:27 -04'00'

Avery G. Hammett
FFA Project Manager, DOE-Savannah River
Remediation and Deactivation & Decommissioning Division

RDDD-24-149

Enclosures:
1. SRS Response to the South Carolina Department of Environmental Services' Comment on the P-Area Groundwater (PAGW) Operable Unit Data Summary Tables for April 2022 through March 2023, SEMS Number: 81
2. SRS Responses to the U.S. Environmental Protection Agency's Comments on the P-Area Groundwater (PAGW) Operable Unit Data Summary Tables for April 2022 through March 2023, SEMS Number: 81

cc w/o encl:
J. Blalock, SCDES-Columbia
S. French, SCDES-Columbia
M. Reece, SCDES-Columbia
G. K. Taylor, SCDES-Columbia
G. R. Stewart, SCDES-Columbia
T. R. Fuss, SCDES-Aiken Environmental Affairs Office
G. O'Quinn, SCDES-Aiken Environmental Affairs Office
H. L. Herlong, SCDES-Aiken Environmental Affairs Office

cc w/encl:
M. McRae, TechLaw, Inc.

Comments Received April 10, 2024

SPECIFIC COMMENT

1. Monitoring Results, page 2. The first paragraph of this section states that samples were collected and analyzed for select constituents from 96 groundwater locations, and synchronous water level measurements were taken from 219 locations. Table 1 lists 97 and 220 locations, respectively. It appears that the addition of monitoring well PDB 4 to the sampling network was not accounted for in this statement. Please correct.

   Response: Agree

   The text in the Monitoring Results section did not account for the addition of monitoring well PDB 4 to the sampling network. The text, figures, and tables in future P-Area Groundwater (PAGW) Operable Unit (OU) reports will ensure changes to the monitoring network are reflected and are consistent.

   No change to the 2023 PAGW OU letter report is proposed.

   Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

SPECIFIC COMMENTS

1. **Tritium Results, Page 3:** The text in the last paragraph states "Downgradient of the PRSBs [P-Area Seepage Basins], a significant decrease in tritium concentration was observed at monitoring well PSB011DL in 1Q23. The tritium result decreased between 1Q21 (3,060 pCi/mL), 1Q22 (2,900 pCi/mL), and 1Q23 (1.01 pCi/mL). PSB011DL monitors downgradient of the PRSBs. A similar decrease was observed in PSB011B, which monitors the LAZ [lower aquifer zone]." *Please revise the text to provide the specific sample results for PSB011B from 1Q21, 1Q22, and 1Q23 to validate the similar decrease in concentrations to PSB011DL.*

   Response: Agree with Clarification

   At monitoring well PSB011B, the tritium result was 637 pCi/mL in 1Q21, 826 pCi/mL in 1Q22, and below detection (practical quantitation limit of 1.0 pCi/mL) in 1Q23. The significant decrease in the 1Q23 tritium result at PSB011B is similar to what was observed at PSB011DL in 1Q23. As stated in the 2023 PAGW OU letter report, continued monitoring of these wells will be required before any conclusions can be made on the cause of the decrease in tritium levels for 1Q23. Further discussion will be provided in the 2024 PAGW OU Effectiveness Monitoring Report (EMR) with the inclusion of the next year of data at the PSB011 monitoring well cluster.

   No change to the 2023 PAGW OU letter report is proposed.

   Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

2. **Tritium Results, Page 4:** The text in the first paragraph states "The 1Q23 tritium result decreased to below the minimum detection limit (MDL) (0.634 pCi/mL)"; however, the text should clarify that the first quarter 2023 (1Q23) tritium results in LAZ well PSB011B decreased to 0.55 picocurie per milliliter (pCi/mL) and below the MDL of 0.634 pCi/mL. *Please revise the text to include this information.*

   Response: Agree

   The statement that "The 1Q23 tritium result decreased to below the minimum detection limit (MDL) (0.634 pCi/mL)" was in reference to the 1Q23 tritium result at LAZ well PSB011B. Future PAGW OU reports will ensure the text is clear as to which monitoring well data is being discussed.

   No change to the 2023 PAGW OU letter report is proposed.

   Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

3. **Tritium Results, Page 4:** The text in the second paragraph states "Separate from the main two tritium plumes in the PAGW OU, there is an independent location at monitoring well PGW026C that has detectable tritium concentrations above the MCL of 20 pCi/mL. In 1Q23,

the tritium result at this well remains elevated at 45.0 pCi/mL." Please revise the text to include previous tritium sampling results for monitoring well PGW026C from 1Q20, 1Q21 and 1Q22 (similar to other wells in this report) for reference to allow for additional text that discusses upward, downward or stable trends for well PGW026C. In addition, there seems to be a potential data gap in the lateral extent of the LAZ Tritium Plume associated with monitoring well PGW026C in relation to the two main plumes as shown in Figure 23 of the 2022 Groundwater Report for the PAGW OU. *Please ensure that the upcoming biennial report discuss the potential data gap in the lateral extent of tritium contamination at LAZ well PGW026C.*

Response: Agree with Clarification

Tritium results at monitoring well PGW026C were 35.9 pCi/mL in 1Q20, 53.7 pCi/mL in 1Q21, and 53.5 pCi/mL in 1Q22. The 1Q23 result (45.0 pCi/mL) is consistent with previous sampling results. The location of the PGW026 monitoring well cluster was determined as an outcome of a groundwater investigation completed in 2010 and presented to the Core Team in support of the Sampling and Analysis Plan that was submitted in 2013 (SRNS 2011). The 2010 investigation involved the collection of depth-discrete groundwater samples at numerous locations using cone penetrometer technology (CPT). Low concentrations (e.g., below MCL) of tritium were observed at the CPT location nearest the current location of the PGW026 monitoring well cluster. Based on the data in 2010 and subsequent data collected at this well cluster, SRS believes the source of the tritium originates from the P-Area Reactor Seepage Basins (PRSBs). The location of the LAZ monitoring wells, PGW026C and PGW026B, are located on the fringe of the tritium plume. Since cessation of P-Reactor operations in 1988 and subsequent closure of the PRSBs in the late 1990s, the source of tritium has been removed and attenuation of the tritium plume has been observed due to its short half-life (12.3 years). SRS believes there are adequate lateral monitoring of this isolated tritium contamination, demonstrated by no detections of tritium at monitoring wells PGW014C and PGW014B, which are located downgradient of the PGW026 monitoring well cluster. SRS does not believe there is a data gap that exists at the PGW026 monitoring well cluster and adequacy of the monitoring network with respect to the groundwater tritium plumes will be discussed in future biennial PAGW OU EMRs.

Source: SRNS, 2011. *Sampling and Analysis Plan for the P-Area Groundwater Operable Unit,* Revision 1, September 2013, SRNS-RP-2011-01284, Savannah River Site, Savannah River Nuclear Solutions, Aiken, SC.

No change to the 2023 PAGW OU letter report is proposed.

Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

4. **Tritium Results, Page 5:** The text in the first paragraph states "Results for two of the well pairs downstream of SC-03 (PSC005 and PSC006) remained around the MDL in the 1Q23 sampling"; however the text should provide the tritium results and corresponding MDLs for

the two well pairs to support the assertion the results remained around the MDL. *Please revise text to include specific sample results for PSC005D1, PSC005D2, PSC006D1, and PSC006D2.*

Response: Agree with Clarification

Tritium results for the two well pairs downstream of SC-03 were 0.65 pCi/mL at PSC005D1, 0.15 pCi/mL at PSC005D2, 0.82 pCi/mL at PSC006D1, and 1.23 pCi/mL at PSC006D2 for 1Q23. The minimum detection limit (MDL) was 0.6 pCi/mL for the PSC005 and PSC006 well pairs in 1Q23. Therefore, results remained around the MDL in 1Q23, with no results exceeding the practical quantitation limit of ~1.3 pCi/mL. Future reports will provide similar statements for clarification.

No change to the 2023 PAGW OU letter report is proposed.

Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

5. **Summary Section, Page 6:** The text in the third paragraph states "In the UAZ [upper aquifer zone], TCE [trichloroethene] concentrations are consistent with previous reporting while concentrations in the LAZ are increasing slightly." However, Table 3, TCE Data Comparison Between 1Q22 and 1Q23, shows increasing concentrations of TCE at 11 out of the 23 locations that had detections in the UAZ. *Please provide text verifying whether TCE concentrations are increasing, decreasing or stable in the UAZ.*

Response: Agree

As discussed in the TCE Results section, TCE concentrations in the UAZ may be increasing or decreasing depending on the sampling location and nature and extent of the TCE plume. The statement provided in the Summary Section is too general to adequately describe TCE concentrations in the UAZ as a whole given the extent of the plume and number of monitoring wells. Future biennial PAGW OU EMRs will provide additional detail to clarify where TCE concentrations in the groundwater plumes are increasing, decreasing, or remain stable.

No change to the 2023 PAGW OU letter report is proposed.

Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

6. **Table 2, Tritium Data Comparison Between 1Q22 and 1Q23:** *Please revise the legend of Table 2 to include text that defines "pCi/mL", "U" qualifier and "J" qualifier.*

Response: Agree

The table legend will be expanded in future PAGW OU reports to define "picocuries per milliliter (*pCi/mL)*", "non-detected result (U qualifier)", and "estimated result (J qualifier)".

No change to the 2023 PAGW OU letter report is proposed.

Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov

Comments Received April 17, 2024

7. **Table 3, TCE Data Comparison Between 1Q22 and 1Q23:** *Please revise the legend of Table 3 to include text that defines "ug/L", "U" qualifier and "J" qualifier.*

   Response: Agree

   The legend will be expanded in future PAGW OU reports to define "micrograms per liter *(ug/L)*", "non-detected result (U qualifier)", and "estimated result (J qualifier)".

   No change to the 2023 PAGW OU letter report is proposed.

   Responsible Party: Adam Willey, (803) 646-4944, adam.willey@srs.gov