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

January 05, 2022

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

Dear Mr. Hennessey:

The U.S. Environmental Protection Agency (EPA) has reviewed the Department of Energy, Savannah River Site (DOE-SRS) Calendar Year 2020 Groundwater Mixing Zone Letter Report for the D-Area Oil Seepage Basin (631-G), SEMS Number 27, dated July 19, 2021.

EPA cannot provide approval for this report until the below comments are addressed. If you have any concerns or questions, please contact me at (404) 229 -9500.

Sincerely,

Diedre Lloyd

Diedre Lloyd
Remedial Project Manager
Restoration and Sustainability Branch
Superfund & Emergency Management Division
61 Forsyth Street, Region 4
Atlanta, GA 30303

cc: Angelia Holmes, DOE-SRS; Phil Prater, DOE-SRS; Karen Adams, DOE-SRS; C. L. Bergren, SRNS-ACP (Signed Original); Susan Fulmer, SCDHEC

EPA COMMENTS ON THE
CALENDAR YEAR 2020 GROUNDWATER MIXING ZONE LETTER REPORT
FOR THE D-AREA OIL SEEPAGE BASIN OPERABLE UNIT

SEMS NUMBER: 27

JULY 2021

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

EPA GENERAL COMMENTS:

1. Based on the orientation of the trichloroethylene (TCE), cis-1,2-dichloroethylene (cDCE), and vinyl chloride (VC) plume maps, it appears that groundwater flow at the site is in a south-southeasterly direction. However, a discussion of groundwater flow direction is not included in the Report. Please provide a discussion of groundwater flow in the Report to provide the reader context for proper evaluation of the plume maps and contaminant transport.

2. The text states that based on the lack of bio-degradation at the site, and consistent detections of tetrachloroethylene (PCE), TCE, cDCE, and VC above Environmental Protection Agency (EPA) Maximum Concentration Levels (MCLs), it appears that cleanup standards will not be reached that were established in the original modeled time-frame (2027), which is only six years away. An evaluation should be made to determine if additional remedial actions are feasible to reach the initial remedial goal timeframe. However, at a minimum, the model for cleanup at the site should be updated since the current model is inaccurate. Please revise the Report to address this issue.

3. PCE was detected above the MCL in monitoring well DOB 15; however, there is no plume map for PCE. Please include a plume map showing the extent of PCE at the site.

EPA SPECIFIC COMMENTS:

1. **Introduction, Page 3:** The text in the third paragraph, sixth sentence states that background wells are sampled every two years; however, the text indicates these wells are sampled bi-annually, which is twice a year. Please revise the text to reflect that background wells are sampled biennially.

2. **2020 Data Analyses, Page 4:** The text in the second paragraph, sixth sentence states that two horizontal flow rates for the two aquifers at the site are presented; however, it is unclear how the flow rates were calculated or obtained. Please provide more detail on how the flow rates were calculated or provide a reference.

3. **2020 Data Analyses, Page 4:** The text in the last paragraph, third sentence incorrectly states that the Mixing Zone Concentration Limit (MZCL) for benzene is 1.35 microgram per liter(ug/L); however, the correct MZCL for benzene is 5 ug/L. Please update the text to reflect the correct MZCL for benzene.

4. **2020 Data Analyses, Page 6:** The text in the first paragraph, second sentence appears to be in the wrong tense or is inaccurate, as it states, "Modeling has indicated that an increase in VC may occur around 2016;…" Please revise this sentence to reflect the correct tense indicating an increase in VC has occurred or indicate an increase in VC did not occur in 2016 as the model predicted.

5. **Table 1, 2020 DOSB OU Groundwater Mixing Zone Monitoring Results, Page 18:** The abbreviations/acronyms included on Table 1 are not defined. For example, MCL, PCE, and MZCL are not defined. Please define all acronyms presented in the Table in a notes section at the bottom of the table.

6. **Table 1, 2020 DOSB OU Groundwater Mixing Zone Monitoring Results, Page 18:** The note with an asterisk below the table states that no MPV exists for cDCE (cis-1,2-DCE); however, it is unclear what MPV is referring to. Please update the text as appropriate.

7. **Table 2, 2020 DOSB OU Natural Attenuation Field Parameters, Page 19:** The units of measurement are not defined in Table 1. For example, millivolt (mV), and milligram per liter (mg/L) are not defined. Please define all units of measurement in the bottom on the table.

8. **Table 2, 2020 DOSB OU Natural Attenuation Field Parameters, Page 19:** For monitored natural attenuation parameters (pH, oxidation reduction potential [ORP], dissolved oxygen and alkalinity) there is no explanation for what range of results indicate volatile organic compound (VOC) degradation. For example, dissolved oxygen concentration less than 0.5 mg/L is indicative of groundwater conditions that would most likely support chlorinated VOC degradation. Please include the VOC degradation ranges for pH, ORP dissolved oxygen and alkalinity.