



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

MAR 26 2020

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 Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Acting 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 Calendar Year 2018
D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter
Report, SEMS Number: 27

In accordance with the terms of the Federal Facility Agreement, the U. S. Department of Energy (DOE) is submitting the subject comment responses for your review. The South Carolina Department of Health and Environmental Control (SCDHEC) approved the report on November 15, 2019 and the U. S. Environmental Protection Agency (EPA) provided comments on the report on January 13, 2020. The report will not be revised; however, all comment responses will be included and/or addressed in the next report, as applicable. Please review these responses and provide your approval thirty (30) days from receipt. The time and effort that the SCDHEC and the EPA have given on the subject operable unit are greatly appreciated.

Comments or questions from your staff may be directed to me at (803) 952-8365 or the DOE Federal Project Director, Ms. Karen Adams, at (803) 952-7871.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Hennessey".

Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division

MAR 26 2020

Ms. Susan Fulmer
Mr. Jon Richards

2

Enclosure:

SRS Responses to EPA Comments on the Calendar Year 2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report, SEMS Number: 27

cc w/o encl:

D. Scaturro, SCDHEC-Columbia

S. French, SCDHEC-Columbia

M. Reece, SCDHEC-Columbia

G. K. Taylor, SCDHEC-Columbia

T. R. Fuss, SCDHEC – Aiken Environmental Affairs Office

G. O'Quinn, SCDHEC - Aiken Environmental Affairs Office

B. Cameron, SCDHEC–Aiken Environmental Affairs Office

R. Pope, EPA-Atlanta

cc w/ encl:

D. Lloyd, EPA-Atlanta

M. McRae, TechLaw, Inc.

SRS Responses to the United States Environmental Protection Agency
Comments on the
2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report,
SRNS-J2000-2019-00556, July 2019 SEMS NUMBER: 27
Savannah River Site, Aiken, South Carolina
Comments received January 13, 2020

Page 1 of 3

EPA COMMENTS:

1. Based on the steady contaminant trends noted in some monitoring wells, slow progress has been made towards restoring the groundwater aquifer to beneficial use since the removal action was conducted in 1996. This issue was also noted in EPA comments during the previous reporting interval (2017 DOSB OU). For example, the steady contaminant concentrations of tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-Dichloroethylene (cDCE) and vinyl chloride (VC) noted for well DOB 15 and depicted on Figure 7 (Time Series Plots of TCE, PCE, cDCE, and VC at Plume Compliance Wells DOB 19A and DOB 19 at the DOSB OU), suggest the projected cleanup timeframe for aquifer restoration to beneficial use remains uncertain. With over 22 years of groundwater monitoring data, it seems to indicate that the noted steady contaminant concentration trends greater than respective maximum contaminant levels (MCLs) represent a potential problem warranting future action.

Natural attenuation (NA) parameters indicate that current groundwater conditions at the site are not favorable for reductive dechlorination processes; therefore, NA relies primarily on physical processes such as dispersion and dilution. Furthermore, it is noted in the Calendar Year 2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report, SEMS Number: 27, dated July 25, 2019 [2018 Groundwater Mixing Zone (GWMZ) Letter Report] that in respect to the dispersion/dissolution of volatile organic compounds (VOCs), "it is speculated that VOCs are being retarded by the aquitard and clayey zones and/or restricted groundwater flow zones through tighter aquifer zones." As such, the data indicate that the NA/GWMZ remedy is not effective nor is it performing as designed to achieve aquifer restoration within a reasonable timeframe as compared to active remediation.

The 2018 GWMZ Letter Report states, "...a Core Team meeting or conference call is proposed in the Fall 2019 timeframe to discuss the trends in the DOSB plumes and the overall effectiveness of the Natural Attenuation/GWMZ remedy." It is recommended that the Core Team update the groundwater model to more accurately depict current site conditions and anticipated timeframe to achieve MCLs, and propose several potential response actions to address steady contaminant trends greater than respective MCLs.

EPA suggests that a core team meeting be held sometime in 2020, at a mutually agreeable time for all core team members to discuss future actions at the DOSB OU.

**SRS Responses to the United States Environmental Protection Agency
Comments on the
2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report,
SRNS-J2000-2019-00556, July 2019 SEMS NUMBER: 27
Savannah River Site, Aiken, South Carolina
Comments received January 13, 2020**

Page 2 of 3

Response: Agree

SRS proposes to have a Core Team meeting or conference call in 2020 to discuss the trends in the DOSB OU plumes, the overall effectiveness of the NA/GWMZ remedy, and whether or not conditions at the DOSB OU represent a potential problem warranting future action. The meeting will be held at a mutually agreeable time for all Core Team members.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov

2. Figures 3 through 8 are incorrectly numbered as Figures 2 through 7 (Figure 2 is duplicated). Revise the 2018 GWMZ Letter Report to address this issue.

Response: Agree with clarification

Two figures were numbered as Figure 2 causing the sequential numbering of figures after Figure 2 to be incorrect. Care will be taken when reviewing future reports to ensure correct numbering of figures. No changes are proposed for the 2018 letter report.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov

3. Potentiometric surface maps based on groundwater elevations were not prepared for the various aquifer units identified for the D-Are Oil Seepage Basin Operable Unit (i.e., Aquifers 1, 2, 3 and Gordon Aquifer). As such, the flow directions in each of the respective aquifer units as documented in the text could not be verified. Currently, methylene chloride was detected in background well DOL 1 at a concentration of 3.4 micrograms per liter ($\mu\text{g/L}$). Absent groundwater elevation data, it could not be confirmed well DOL 1 is a background well as designated. Revise the 2018 GWMZ Letter Report to address this issue to ensure the potentiometric surface and flow direction for each of the aquifer units is clearly understood and documented. EPA requests that at least one map of the potentiometric surface be included in the future DOSB letter report

Response: Agree with clarification

Potentiometric surface maps are not prepared for the bi-annual letter report submitted during odd-numbered years, however a figure of the monitoring network, showing the location of the monitoring wells in each aquifer along with water elevations recorded at each sampling station during the sampling event is included. This information can be used to determine general flow directions in each of the aquifer units. Along with the information submitted in the biannual letter reports; potentiometric surface maps are prepared and included in even-numbered years with the submittal of the bi-annual mixing zone report. To ensure the potentiometric surface and flow direction for each of the aquifer units is clearly understood and documented, a figure with potentiometric surfaces will be added to future letter reports submitted during odd-numbered years. No changes are proposed for the 2018 letter report.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov

SRS Responses to the United States Environmental Protection Agency
Comments on the
2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report,
SRNS-J2000-2019-00556, July 2019 SEMS NUMBER: 27
Savannah River Site, Aiken, South Carolina
Comments received January 13, 2020

Page 3 of 3

4. The third paragraph on Page 5 states the fluctuations of VOCs in additional wells and plume compliance wells may indicate effects of increased/decreased rainfall, and periods of high water levels may correlated with increased contaminant concentrations. As such, it is recommended a figure graph depicting times series plots of VOCs in wells versus rainfall data recorded over the same period is prepared. The figure can provide an additional line of evidence demonstrating whether a direct correlation exists between contaminant concentrations and rainfall events. Revise the 2018 GWMZ Letter Report to address this issue.

Response: Agree with clarification

Figures will be included in the bi-annual report submitted during even-numbered years, depicting time series plots of PCE, TCE, cDCE, and VC versus rainfall and/or water table elevations. No changes are proposed for the 2018 letter report.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov
