



ARF-021968

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

MAR -7 2019

Ms. Susan B. Fulmer, P. G., Manager
Federal Facility Agreement 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 D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data, SEMS Number 63 (IACD-18-170, dated July 31, 2018)

In accordance with the terms of the Federal Facility Agreement, the U. S. Department of Energy (DOE) is submitting the enclosed responses to the regulatory comments on the D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data, SEMS Number: 63 (IACD-18-170, dated July 31, 2018) for your review. The South Carolina Department of Health and Environmental Control (SCDHEC) and the U. S. Environmental Protection Agency (EPA) provided comments on November 27, 2018 and December 10, 2018, respectively. This report will not be revised; however, all comment responses will be addressed in the next report, as applicable. Please review the responses and provide your approval within thirty (30) days of receipt.

The effort and time that the SCDHEC and the EPA have provided on this operable unit are greatly appreciated. Questions from you or 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 blue ink, appearing to read "BTH", with a long horizontal line extending to the right.

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

IACD-19-133

Ms. Susan Fulmer
Mr. Jon Richards

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Enclosures:

- 1) SRS Responses to South Carolina Department of Health and Environmental Control Comments on the D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data (IACD-18-170, dated July 31, 2018), SEMS Number: 63
- 2) SRS Responses to U. S. Environmental Protection Agency Comments on the D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data (IACD-18-170, dated July 31, 2018), SEMS Number: 63

cc:

D. Scaturro, SCDHEC-Columbia
S. French, SCDHEC-Columbia
M. Reece, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
G. O'Quinn, SCDHEC-Aiken Environmental Affairs Office
R. H. Pope, EPA-Atlanta

cc w/encl:

D. Lloyd, EPA-Atlanta
M. McRae, TechLaw, Inc.

**SRS Responses to the United States Environmental Protection Agency (US EPA) Comments on
the D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data**

SEMS NUMBER: 63

IACD-18-170; July 2018

Comments received December 10, 2018

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EPA COMMENTS:

1. The D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017 Data, SEMS Number: 63; dated July 31, 2018 (Letter Report) indicates the metals contamination in groundwater is related to the low pH conditions from the former power plant operations including coal storage and runoff. As such, the pH values in groundwater reportedly correlate with the metals exceedances downgradient of the D-Area Coal Pile Runoff Basin (489-D) and Coal Storage Area (484-17D). However, the figures presented in the Letter Report do not clearly illustrate or define the location of the former D-Area Coal Pile Runoff Basin (489-D) or Coal Storage Area (484-17D). In order to provide a more complete understanding of the site conditions and conceptual site model, revise the figures as appropriate to address this issue.

Response: Agree

In future reports and letters all figures will label the D-Area Coal Pile Runoff Basin (489-D) and Coal Storage Area (484-17D). No changes are proposed for the 2017 letter.

Contact: Ashley Shull (803) 952-7090 (ashley.shull@srs.gov)

2. The last paragraph on page 5 of the Letter Report states, "The upcoming D-Area Groundwater OU Treatability Study will involve an injection scenario that will flush low-pH groundwater out of the upper water table aquifer." It is noted the Treatability Study Work Plan for Groundwater Injection and Discharge Canal Treatment at the D-Area Groundwater (OU) (U), SEMS Number: 63, SRNS-TR-2018-00128, Revision 0, July 2018 indicates an estimated 10 pore space volumes are sufficient to flush the aquifer with an estimated duration of 3 years to meet treatability study objectives. As such, the flushing of 10 pore space volumes would result in some dilution of the upper water table of the Upper Three Runs Aquifer (UTRA) via injection wells. The Letter Report also indicates the primary natural attenuation mechanisms responsible for decreasing trichloroethylene (TCE) concentrations include dilution and dispersion. As such, it is unclear how the reduction in volatile organic compounds (VOCs) and metals concentrations in groundwater will be quantified with respect to natural attenuation mechanisms. For example, it is unclear if decreases in VOCs and/or metals concentrations in groundwater would be the result of dilution created by flushing of 10 pore space volumes or due to dispersion, sorption and/or redox attenuation mechanisms. Revise the Letter Report to provide clarity and explanation that will address these issues.

Response: Clarification

The intent of the treatability study is to physically flush out the existing low-pH groundwater in the upper water table aquifer in the vicinity of and downgradient of the Coal Storage Area. The treatability study monitoring program in addition to the DAG OU monitoring will measure changes in the aquifer and constituent concentrations. Monitoring results will be collected and analyzed to determine the changes occurring within the aquifer during the injection treatability study and will add clarity to the attenuation mechanisms at work. A treatability study report of those results will detail the aquifer changes as it relates to dilution, dispersion, sorption and/or redox attenuation mechanisms. The first report is expected to be submitted by January 31,

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2021, one year after the field start date of the treatability study. These results will be summarized in the DAG OU monitoring reports and letters. No changes are proposed for the 2017 letter.

Contact: Ashley Shull (803) 952-7090 (ashley.shull@srs.gov)

**SRS Responses to South Carolina Department of Health and Environmental Control (SCDHEC)
Comments on the D-Area Groundwater Operable Unit Letter Report for Calendar Year 2017
Data**

**SEMS NUMBER: 63
IACD-18-170; July 2018
Comments received November 27, 2018**

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SCDHEC GENERAL COMMENTS:

1. Source monitoring well DCB 34C, which is currently sampled annually, has had at least three consecutive threshold limit exceedances for chromium, from 2Q 2015 through 2Q 2017; and, according to the letter report, “the hydrodynamics in the area downgradient of the source units are under change as water within the basins have been removed and river water is not being discharged into the D-Area Discharge Canal” (pages 4 and 5). Based on the data and current conditions, the Department requests that DCB 34A and DCB 34C be added to the list of monitoring wells that are sampled on a semi-annual basis.

Response: Agree

Starting in the fourth quarter 2019 sampling event and continuing every fourth quarter, wells DCB 34A and DCB 34C will include chromium analysis (including metals suite). Second quarter sampling and analysis will continue as currently conducted.

Contact: Ashley Shull (803) 952-7090 (ashley.shull@srs.gov)

2. For future letter reports, please include a table that lists all monitoring wells along with their designation types (source, intermediate, downgradient, etc.), sampling frequencies, and whether or not they have specific threshold limits for monitored constituents.

Response: Agree

Future letter reports will include a table similar to Table B-1 in Appendix B of the Groundwater Monitoring Reports and will include sampling frequencies, designation types, and a general listing of any threshold limit (i.e., metals, VOCs, tritium). Specific threshold limits will continue to be provided in the monitoring data tables regardless if they were sampled or not for both second and fourth quarter sampling events.

Contact: Ashley Shull (803) 952-7090 (ashley.shull@srs.gov)
