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

November 17, 2017

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

Dear Mr. Hennessey:

The U.S. Environmental Protection Agency (EPA) has received the Department of Energy, Savannah River Site 2016 Annual Comprehensive TNX Area Groundwater Monitoring and Remedial Action Effectiveness Interim Report, dated June 2017, CERCLIS Number: 21, 29.

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

Sincerely,

Diedre Lloyd

Diedre Lloyd
Remedial Project Manager
Restoration and Sustainability Section
Superfund Division

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

EPA COMMENTS on the 2016 ANNUAL COMPREHENSIVE TNX AREA GROUNDWATER MONITORING AND REMEDIAL ACTION EFFECTIVNESS INTERIM REPORT

CERCLIS NUMBER: 21, 29

REVISION 0
DATED JUNE 2017

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

EPA GENERAL COMMENT:

The text under the second bullet in Section 3.1, Objectives, Page 8 of 52 of the 2016 Annual Comprehensive TNX Area Groundwater Monitoring and Remedial Action Effectiveness Interim Report states one of the overall objectives of the groundwater remedial action (RA) is to return groundwater to beneficial use. While the RAs currently being implemented for the TNX Groundwater address the chlorinated volatile organic compound (cVOC) contamination, there is no RA planned for radiologically contaminated groundwater. The 2016 Annual Report states in Section 3.5, Radiological Contaminated Groundwater, Page 12 of 52 that based on monitoring data and historical trends the exceedances of the radiological contamination in groundwater are sporadic or one time occurrences. The text further asserts there are no discernible and consistent groundwater plumes present and therefore no RA is recommended at this time.

However, based on the Time Series Plot for Gross Alpha for Station TCM 5, Appendix E, Page E-108 of E-226, the majority of gross alpha concentrations in TCM 5 have fluctuated above and exceeded the 15 picocuries per liter (pCi/L) maximum contaminant level (MCL). Additionally, uranium has regularly exceeded the MCL of 30 micrograms per liter (µg/L) since 2005. The text in the Executive Summary, Recommendations, Page ES-3 of ES-8 states a new monitoring well is planned to be installed downgradient of the Old TNX Seepage Basin (OTSB) to better define the eastern edge of the trichloroethylene (TCE) groundwater plume. It should be noted that the new well will be sampled for radionuclide parameters in addition to cVOC analysis.

EPA is concerned that a discernible and consistent groundwater plume is present based on the additional monitoring well data from the new well and requests a discussion regarding radionuclide contamination cleanup with respect to returning groundwater to beneficial use. It is recommended that future Annual Report(s) be prepared to address this issue.

EPA SPECIFIC COMMENTS:

1. **Executive Summary, Recommendations, Page ES-3:** The Executive Summary states, "SRS proposes to reduce sampling for 1,4-dioxane to seven monitoring wells…near the TNX Burial Ground (TBG), (TBG 3, TBG 4, TBG 5, and TNX 3D), and three background wells (P 26D, P 26B, and P26A)." Based on the groundwater sampling events from May and December 2016, 1,4-dioxane was detected above the estimated quantitation limit (EQL) of 3 µg/L in groundwater samples collected from one (1) well (TBG 5) at concentrations of 8.5 µg/L and 5.1 µg/L, respectively. However, Section 5.4 on Page 24 of 52 states the regional screening level for 1,4-dioxane is 0.46 µg/L; therefore, it is unclear if the concentration of 1,4-dioxane in groundwater at the wells sampled during the May and December 2016 sample events exceeds the regional screening level since the EQL was greater than the regional screening level.

    a. It is EPA's stance that it is premature to reduce sampling and requests that the sampling regime remain the same for present monitor wells and for newly installed monitor wells.

    b. Please revise the 2016 Annual Report to address this issue to ensure adequate laboratory detection limits were utilized at all wells within the monitoring well network sampled for 1,4-dioxane, as listed in Table 4-2 on Pages 18-19 of 52.

2. **Table 4-1, TNX Monitoring Well Network, Page 17 of 52:** This table includes well name, screen zone, category for each well within the monitoring network; however, it does not include the total depth, screened interval, or the diameter of each well. Please revise Table 4-1 to include the total depth, screened interval and the diameter of each well within the monitoring well network.

3. **Section 6.7, 1,4-Dioxane, Page 39-40 of 52:** Section 6.7 states, "1,4-Dioxane was initially sampled at all TNX Area OU monitoring wells during the fourth quarter 2013 sampling. Thirty of the 38 monitoring wells had a detection of 1,4-dioxane. The detections were scattered across the TNX Area OU including the background and monitoring wells upgradient of the source areas. It is not apparent why 1,4-dioxane concentrations were detected in almost every monitoring well. Since 2014, 1,4-dioxane concentrations have been less than the detection limit at all wells except TBG 5." However, the data from the fourth quarter 2013 and subsequent sampling events is not included in the report as a supporting line of evidence. Please revise the 2016 Annual Report to include historical groundwater data (including the laboratory detection limits), for 1.4-dioxane along with the additional constituents and parameters sampled for in subsequent sampling events.

4. **Section 7.1, Soil Vapor Extraction (SVE) Operations, Page 41 of 52:** The second paragraph of Section 7.1 states, "the vapor samples are collected quarterly only from the SVE wells attached to a MicroBlower ™. Vapor concentrations have ranged from 1.2 ppmv to 0.002 ppmv with an average concentration of 0.1 ppmv." However, the analytical results for the quarterly vapor samples collected and assumed runtimes for the MicroBlowers ™ are not included in the report. Furthermore, it is unclear how the VOC Mass Removed by SVE (2016) (Table 7-2, Page 45 of 52) was calculated. Please revise the 2016 Annual Report to address these issues.

5. **Table 7-2, VOC Mass Removed by SVE (2016), Page 45 of 52:** The table is labeled as data collected from 2016; however, the "average monthly removed" row states 2015. Revise the date for the "average monthly removed" row to 2016.

6. **Table 7-3, Estimated TCE Plume Mass (2007-2016), Page 46 of 52:** Table 7-3 indicates analytical data from groundwater samples collected from two wells were used in the average TCE concentration for the plume in 2016; however, the data used was only from the December 2016 monitoring event, which was the more conservative data set from the two 2016 sampling events. For clarity, revise Table 7-3 to include a footnote indicating the data used to calculate the estimated TCE plume mass was only from the December 2016 sampling event and in subsequent reporting efforts the entire sampling interval (one year in this case) should be used when describing events over the sampling time frame under discussion.

7. **Appendix B, Table B-2, 4Q 2016 TNX Annual Groundwater and Monitoring Report, Page B-4 of B-4:** The minimum detection limit for gross alpha for groundwater samples collected from well TBG 5 during the December 2016 was 25.4 pCi/L, which is greater than the MCL of 15 pCi/L; however, this potential contaminant exceedance is not discussed in Section 6.5. Revise Section 6.5 to include and discuss this issue.