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

October 30, 2017

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Mr. Brian Hennessey, 730-B
SRS Remedial Project Manager, Area Completion Projects
Savannah River Operations Office, P.O. 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 Effectiveness Monitoring Report (EMR) for the Monitored Natural Attenuation (MNA) at the Chemical, Metals and Pesticides (CMP) Pits Operable Unit, March 2016 through March 2017, CERCLIS Number: 24.

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
Remedial Project Manager
Restoration and Sustainability Section
Superfund Division

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

EPA COMMENTS on the EFFECTIVENESS MONITORING REPORT for

MONITORED NATURAL ATTENUATION (MNA) at the CHEMICALS, METALS, AND PESTICIDES (CMP) PITS OPERABLE UNIT (OU)

MARCH 2016 THROUGH MARCH 2017
CERCLIS NUMBER: 24

REVISION 0
DATED JUNE 2017

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

EPA Comments:

1) It is not clearly understood whether the decreasing contaminant trends observed in the Transmissive Zone (TZ) and Middle Aquifer Zone (MAZ) are related to mass destruction of the contaminants or due to plume migration and expansion. For example, in Section 2.2.2.1, PCE and TCE, Pages 9 and 10 of 104 of the Effectiveness Monitoring Report (EMR) for the Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) March 2016 through March 2017, CERCLIS Number 24, the text states the "Vertical movement of the plumes are occurring as is shown by overall high proportions of decreasing concentrations in the MAZ, and a higher proportion of increasing trends in portions of the LAZ (Appendix B and Figures 14, 15, and 31)." As such, it appears the plumes are not contracting but expanding under non-steady conditions as the plume center mass migrates horizontally and vertically downgradient away from the source zone through the MAZ and into the Lower Aquifer Zone (LAZ). Unstable and/or expanding plume behavior is not consistent with a Monitored Natural Attenuation (MNA) remedy implemented consistent the EPA guidance *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*, OSWER Directive Number 9200.4-17P, dated April 21, 1999 (MNA Guidance). Currently, the EMR monitoring data indicate sporadic VOC detections which are typically less than respective maximum contaminant levels (MCLs) detected in Pen Branch and indicate MNA is not occurring at a rate that prevents cross-media transfer of contaminants discharging from the MAZ and LAZ to surface waters of Pen Branch. Please provide clarification and/or additional information that will definitively answer the issue outlined above.

2) The horizontal extent of the PCE and trichloroethylene (TCE) plumes are poorly defined in the MAZ east of monitoring wells CMP 39D and CMP 65BU and in the LAZ east of monitoring wells CMP 64BU and CMP 65B. Considering the uncertainty in the horizontal extent of the PCE/TCE plume at the eastern boundary, it is not clear how the planned groundwater model will be updated if the plume(s) have not been adequately defined without additional well installation in the MAZ and LAZ to address the data gap(s). Revise the EMR to address this issue to ensure the updated groundwater model is adequate for predicting cleanup timeframes and determining how the MNA remedy is progressing.

3) The anticipated, updated groundwater model that will be used to evaluate how the MNA remedy is progressing and is expected to also include new predictions for cleanup timeframes should also be used to:

a. decide when and where to transition between technologies based on contaminant levels may be necessary,
b. address anticipated plume migration/expansion; and
c. to optimize remediation technology performance in accordance with *The DNAPL Remediation Challenge: Is There a Case for Source Depletion?* EPA/600/R-03/143 (USEPA 2003).

Please revise the EMR to address this issue to ensure the appropriateness of MNA passive remedy in attaining remedial goals within a reasonable timeframe as compared with active remediation.

4) **Section 2.2.3, Surface Water Sampling Results, Page 20 of 104:** Section 2.2.3 states, "1,4-Dioxane was analyzed at all five required surface water stations (CMP-SW-01 through CMP-SW-10) during 4Q2016 and all results were non-detect." Additionally, the second paragraph of Section 4.0, Page 23 of 104 states, "All surface water station samples were non-detect for 1,4-dioxane;" however, the sample quantitation limit for 1,4-dioxane for the four (4) surface water samples collected for laboratory analysis was 3.0 µg/L, which is greater than the regional screening level (RSL) for 1,4-dioxane of 0.46 µg/L. Although, the analytical results for the surface water station samples were non-detect, it is unclear if 1,4-dioxane concentrations in surface water were greater or less than the RSL. Revise Section 2.2.3 and Section 4.0 to provide clarity on this issue.

5) **Figures 18, 21, 22, and 23, Pages 61, 65, 67, and 69 of 104:** Plume maps for 1,4-dioxane are depicted based on groundwater analytical data collected during two sampling events in 2016 utilizing a solid 0.46 µg/L 1,4-dioxane contour line; however, as stated in Section 2.2.2.6, "…the current USEPA tapwater RSL of 0.46 µg/L is available. The detection limits were not able to meet the RSL of 0.85 µg/L, while the sample quantitation limit was 3 µg/L." Because the sample quantitation limit is greater than the RSLs for 1,4-dioxane, it is unclear if the plumes drawn in Figures 21, 22, and 23 are accurate. Revise Figures 18, 21, 22, and 23 to address this issue.

6) **Figure 17, 2016 TCE Plume and Groundwater Results for the LAZ and GA, Page 59 of 104:** The text in the figure legend indicates "2015 TCE Plume (µg/L)". Revise the text in the figure legend to indicate "2106 TCE Plume (µg/L)."