



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

DEC 16 2019

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: Federal Facility Agreement Annual Removal Action Report for Fiscal Year 2019

In accordance with Section XIV.B of the Federal Facility Agreement (FFA) for the Savannah River Site (SRS), the U. S. Department of Energy (DOE) is submitting this letter as the subject report for your files. In Fiscal Year (FY) 2019 [October 1, 2018 through September 30, 2019], the Non-Time Critical Removal actions discussed below were active.

- 221-1F – A-Line and Ancillary Structure, SEMS Number 88:** Status is unchanged since FY2006. In February 2006, the Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) was completed and submitted for review by the U. S. Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC). On May 30, 2006 the Action Memorandum was issued for the Non-Time Critical Removal Action for Decommissioning of A-Line, 221-1F and Ancillary Structures. The responses to the EPA's and SCDHEC's comments accompanied the Action Memorandum. The future removal action will demolish the buildings to the ground or first floor slabs. Sumps and basements will be filled with appropriate material to grade. The slabs will be covered with either a six-inch or an eight-inch concrete cap resulting in a maximum risk to the industrial worker of 2.9E-06. Due to changes in F-Area resulting from the pause of F-Canyon deactivation and shifts in priority, this action has been postponed. This alternative is expected to be implemented no later than F-Area Completion. Since the facility is structurally intact and hazards are currently contained, postponement of this action poses no immediate threat. Surveillance and maintenance will be performed to ensure conditions within the facility remain protective of human health and the environment.

- **D Area Operable Unit (DAOU), SEMS Number 63:** This unit is listed on Appendix C of the FFA for the SRS. There are eight removal actions associated with the DAOU. The removal action activities associated with the Bubble Tower subunit were completed in FY2011. The removal action activities associated with the Moderator Processing Subunit and the D-006 Outfall (Petroleum Release Site) were completed in FY2012. The removal action activities for the 489-D Coal Pile Runoff Basin (CPRB) (Northern 25%) and the soils surrounding the 484-10D Waste Oil Facility were completed in FY2013. The removal action activities for the 488-2D Ash Basin and 488-4D Ash Landfill were completed in FY2018. Therefore, only two DAOU removal action activities [489-D CPRB (Southern 75%) and 488-1D Ash Basin] are discussed for FY2019.

The DOE submitted the *Field Sampling Plan for the 489-D Coal Pile Runoff Basin (U)* (SRNS-RP-2014-01048, Revision 0, February 2015) for SCDHEC and EPA review and comment on February 18, 2015 (IACD-15-128). The SCDHEC and EPA provided comments on the Revision 0 document in their letters dated March 19, 2015 and April 1, 2015, respectively. The DOE submitted the *Field Sampling Plan for the 489-D Coal Pile Runoff Basin (U)* (SRNS-RP-2014-01048, Revision 1, May 2015) (Redline Pages and Clean Copy) and the *Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Document* for SCDHEC and EPA review and approval on April 27, 2015 (IACD-15-140). The SCDHEC and EPA approved the Revision 1 document in their letters dated May 27, 2015 and June 7, 2015, respectively.

Based on decisions reached among the DOE, SCDHEC, and EPA during a January 6, 2015 conference call to discuss the regulatory documents associated with the closure of the remaining 75% of the 489-D CPRB, the DOE submitted the *Request to Revise the D-Area Coal Pile Runoff Basin (489-D) Removal Action Federal Facility Agreement Milestones, CERCLIS Number: 63* (IACD-15-125, dated January 15, 2015). The SCDHEC and EPA approved the request in their letters dated January 23, 2015 and February 5, 2015, respectively. These approvals included the deletion of the submittal of the Revision 1 RSER/EE/CA from the FFA and an agreement that only the submittal of the Revised Action Memorandum and a Removal Action Start milestone are necessary to address the remaining portion of the 489-D CPRB (Southern 75%). The DOE submitted a *Draft Revision 3 Action Memorandum for the Non-Time Critical Removal Action for the D-Area Coal Pile Runoff Basin (489-D) CERCLIS Number: 63* (IACD-15-138, dated April 6, 2015) to the SCDHEC and EPA for their review and comment. The SCDHEC provided comments on the Draft Action Memorandum in their letter dated May 4, 2015. The EPA submitted a 30-day extension notification for the submittal of their comments in their letter dated May 7, 2015. The EPA provided comments on the Draft Action Memorandum in their letter dated June 2, 2015. The DOE submitted responses to the regulatory comments on the Draft Action Memorandum on June 30, 2015 (IACD-15-160). The final *Revision 3 Action Memorandum for the Non-Time Critical Removal Action for the D-Area Coal Pile Runoff Basin (489-D), CERCLIS Number: 63* (IACD-15-168) was submitted to the SCDHEC and EPA on August 11, 2015 (IACD-15-168). The Revision 3 Action Memorandum was public noticed on August 31, 2015. The DOE submitted the *Notification of the Removal Action Start Date for the D-Area Coal Pile Runoff Basin (489-D) CERCLIS Number: 63* on September 15, 2015 (IACD-15-176).

The submittal letter stated that the removal action start for the 489-D CPRB was met on September 10, 2015, ahead of the FFA milestone date of September 28, 2015. The removal action start date was met with the initiation of the site land-survey of the 489-D CPRB.

The DOE submitted the *Field Sampling Plan for the 488-1D Ash Basin (U)* (SRNS-RP-2015-00096, Revision 0, May 2015) for SCDHEC and EPA review and comment on May 27, 2015 (IACD-15-150). The SCDHEC and EPA provided comments on the Revision 0 document in their letters dated June 25, 2015 and July 7, 2015, respectively. The DOE submitted the *Field Sampling Plan for the 488-1D Ash Basin (U)* (SRNS-RP-2015-00096, Revision 1, December 2015) (Redline and Clean Copies) and the SRS' responses to the regulatory comments on the Revision 0 document on December 21, 2015 (IACD-16-111). The SCDHEC conditionally approved the Revision 1 Redline document in their letter dated January 19, 2016. The EPA approved the Revision 1 document in their letter dated February 5, 2016. The DOE submitted the SRS' response to the SCDHEC's conditional approval comment on February 25, 2016 (IACD-16-123). The SCDHEC approved the SRS' response in their letter dated March 25, 2016.

The DOE submitted the *Removal Action Design Plan (RADP) for the 488-1D Ash Basin and the 489-D Coal Pile Runoff Basin (SRNS-RP-2015-00196, Revision 0, November 2015) CERCLIS Number: 63* on November 15, 2015 (IACD-16-105). The SCDHEC's and EPA's comments on the Revision 0 RADP were documented in their letters dated December 22, 2015 and January 21, 2016, respectively. The DOE submitted the *Removal Action Design Plan (RADP) for the 488-1D Ash Basin and the 489-D Coal Pile Runoff Basin (SRNS-RP-2015-00196, Revision 1 Redline, May 2016) and the Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Document, CERCLIS Number: 63* on May 23, 2016 (IACD-16-139). The SCDHEC and EPA conditionally approved the Redline Revision 1 document in their letters dated June 7, 2016 and June 26, 2016. The DOE submitted the *Professional Engineer (PE) Stamped Removal Action Design Plan (RADP) for the 488-1D Ash Basin and 489-D Coal Pile Runoff Basin (U) (SRNS-RP-2015-00196, Revision 1, May 2016) CERCLIS Number: 63* on July 18, 2016 (IACD-16-152). The July 18, 2016 submittal included the responses to the SCDHEC's and EPA's conditional approval comments. On September 14, 2017, the DOE submitted a *Minor Design Change to the Removal Action Design Plan (RADP) for the 488-1D Ash Basin and 489-D Coal Pile Runoff Basin (U) (SRNS-RP-2015-00196, Revision 1, May 2016) CERCLIS Number: 63* (IACD-17-159). The minor design change included a MicroDrain® Option as part of the 488-1D Ash Basin cover system in lieu of the Geosynthetic Clay Liner/Geosynthetic Drainage Layer (GCL/GDL) cover system specified in the RADP. The MicroDrain® Option equals (or exceeds) the performance of the GCL/GDL cover system. The SCDHEC-Solid Waste Permitting Section determined that the design of the landfill cap meets the requirements of a Class 3 Landfill per the regulations (see ARF-021290, dated October 18, 2017).

The DOE submitted the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for the D-Area Ash Basin (488-1D) (SRNS-RP-2015-00490, Revision 0, February 2016) CERCLIS Number: 63* on February 24, 2016 (IACD-16-124). The SCDHEC and EPA provided comments on the Revision 1 RSER/EE/CA in their letters dated April 21, 2016 and April 25, 2016, respectively. The DOE submitted the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for the D-Area Ash Basin (488-1D) (SRNS-RP-2015-00490, Revision 1, June 2016) (Clean Copy), Savannah River Site's Responses to Regulatory Comments on the Revision 0 Document, and Draft Action Memorandum, CERCLIS Number: 63* on June 8, 2016 (IACD-16-144). The 30-day public comment period for the RSER/EE/CA began on June 15, 2016 and ended on July 14, 2016. The SRS received comments from two members of the public during the public comment period.

The SCDHEC and EPA provided comments on the draft Action Memorandum in their letters dated July 11, 2016 and July 20, 2016, respectively. The DOE submitted responses to the regulatory comments on the draft Action Memorandum on August 3, 2016 (IACD-16-158). The DOE submitted the final *Action Memorandum and Responsiveness Summary for the Non-Time Critical Removal Action for the D-Area Ash Basin (488-1D), CERCLIS Number: 63* on August 17, 2016 (IACD-16-160). The comments received during the RSER/EE/CA public comment period were addressed in the Responsiveness Summary. The Action Memorandum and Responsiveness Summary were public noticed on August 31, 2016.

The DOE submitted the *Notification of the Removal Action Start Date for the D-Area Ash Basin (488-1D) CERCLIS Number: 63* on September 19, 2016 (IACD-16-167). The submittal letter stated that the removal action start for the 488-1D Ash Basin was met on August 24, 2016, ahead of the FFA milestone date of October 3, 2016. The removal action start was met with the subcontractor's initiation of site development of the new D-Area borrow pit. The new borrow pit will be the primary source of common fill and topsoil required for the construction of the D-Area Ash Basin (488-1D) cover system.

On February 7, 2017, the SRS submitted a request to SCDHEC to use the 488-1D Inlet Basins storm water for the irrigation of the 488-4D Ash Landfill and 488-D Ash Basin covers until an alternate solution for longer term water management is agreed upon (see ARF-020982). On February 16, 2017, the SCDHEC provided approval to proceed with the irrigation through August 15, 2017, with some additional requirements (see ARF-020979). On July 17, 2017, DOE requested SCDHEC concurrence to continue utilization of the 488-1D Inlet Basins storm water for the irrigation of the 488-4D Ash Landfill and 488-D Ash Basin covers through February 2018 in support of the 488-1D Ash Basin removal action (IACD-17-148). On July 20, 2017, SCDHEC granted approval to continue with irrigation through February 28, 2018 (see ARF-021219). On February 6, 2018, DOE submitted an extension request for the utilization of the D-Area Ash Basin (488-1D) Inlet Basin water for irrigation purposes through June 30, 2018 (IACD-18-129). SCDHEC approved the request in their letters dated February 8, 2018 (ARF-021384) and May 17, 2018 (ARF-021653). The February 8, 2018 letter granted approval through May 2018. The May 17, 2018 letter granted approval through June 2018. On June 25, 2018, SRS requested an extension through August 31, 2018 (ARF-021693). SCDHEC approved the extension on June 26, 2018 (SRNS-OS-2018-00093 [ARF-021701]).

The DOE submitted the *Human Health and Ecological Evaluation for Confirmation Sampling at the 489-D Coal Pile Runoff Basin (ERD-EN-2017-0027, Revision 0, April 2017) CERCLIS Number: 63* on April 26, 2017 (IACD-17-135). The SCDHEC and EPA submitted comments in their letters dated June 22, 2017 and July 24, 2017, respectively. On October 24, 2017, DOE submitted the *Human Health and Ecological Evaluation for Confirmation Sampling at the 489-D Coal Pile Runoff Basin (ERD-EN-2017-0027, Revision 1, October 2017) (Redline and Clean Copy) and Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Document, CERCLIS Number: 63* (IACD-18-100) to SCDHEC and EPA. SCDHEC and EPA approved the report in their letters dated November 21, 2017 (ARF-021309) and December 19, 2017 (ARF-021339), respectively.

The DOE submitted the *Human Health and Ecological Evaluation for Confirmation Sampling at the 488-1D Ash Basin and Inlet Basins (U) (ERD-EN-2018-0007, Revision 0, October 2018) SEMS Number: 63* on October 2, 2018 (IACD-18-182). The SCDHEC provided comments on the Revision 0 document on November 28, 2018 (SRNS-OS-2018-00254 [ARF-021875]). The EPA submitted a thirty-day extension notification on December 8, 2018 (SRNS-OS-2018-00265 [ARF-021883]). Due to the partial government shutdown from December 22, 2018 to January 25, 2019, EPA submitted a second thirty-day extension notification in their letter dated February 19, 2019 (SRNS-OS-2019-00037 [ARF-021957]). The EPA provided comments on the Revision 0 document on March 4, 2019 (SRNS-OS-2019-00056 [ARF-021963]). The DOE submitted the *Human Health and Ecological 0007, Revision 1 Redline, May 2019) and Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Document, SEMS Number: 63* on June 13, 2019 (IACD-19-155). The SCDHEC approved the Revision 1 Redline document on July 10, 2019 (SRNS-OS-2019-00197 [ARF-022260]). The EPA approved the Revision 1 Redline document on September 15, 2019 (SRNS-OS-2019-00284 [ARF-022342]). DOE submitted the *Human Health and Ecological Evaluation for Confirmation Sampling at the 488-1D Ash Basin and Inlet Basins (U) (ERD-EN-2018-0007, Revision 1, May 2019) (Clean Copy) SEMS Number: 63* on September 24, 2019 (IACD-19-182).

The removal action activities for the D-Area Ash Basin (488-1D) and D-Area CPRB (489-D) (Southern 75%) were completed on October 10, 2018. SRS, DOE, EPA, and SCDHEC personnel participated in a walk down on October 29, 2018 to observe the completion of the activities at the D-Area Ash Basin (488-1D) and D-Area CPRB (489-D) (Southern 75%) (IACD-19-111, dated November 8, 2018). Upon conclusion of the removal action activities at these units, a single Removal Action Report (RAR) that summarizes the work on both units was prepared and submitted to the SCDHEC and EPA. On March 6, 2019, DOE submitted the *Removal Action Report for the 488-1D Ash Basin and 489-D Coal Pile Runoff Basin (U) (SRNS-RP-2018-01091, Revision 0, January 2019), SEMS Number: 63* for regulatory review and comment (IACD-19-128). The SCDHEC and EPA provided comments on the Revision 0 document on May 2, 2019 and June 4, 2019, respectively (SRNS-OS-2019-00124 [ARF-022161] and SRNS-OS-2019-00168 [ARF-022192]). On September 19, 2019, DOE submitted the *Removal Action Report for the 488-1D Ash Basin and 489-D Coal Pile Runoff Basin (U) (SRNS-RP-2018-01091, Revision 1, July 2019) (Redline Pages Only) and Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Document, SEMS Number: 63* for regulatory review (IACD-19-181). The RAR for 488-1D Ash Basin and 489-D Coal Pile Runoff Basin is expected to be finalized in FY2020.

- **C Area Groundwater Operable Unit, SEMS Number 82:** This unit is listed on Appendix C of the FFA for the SRS.

On May 11, 2017, DOE submitted the *Sampling and Analysis Plan Addendum for the C-Area Groundwater (CAGW) Operable Unit (OU) (U) (SRNS-RP-2017-00100, Revision 0, April 2017) CERCLIS Number: 82 (IACD-17-136)*. The SCDHEC and EPA provided comments on the Revision 0 report in their letters dated July 6, 2017 (ARF-021207) and July 19, 2017 (ARF-021215), respectively. The DOE submitted the redline Revision 1 document (SRNS-RP-2017-00100, Revision 1 Redline, March 2018) and SRS' responses to the regulatory comments on the Revision 0 document on March 22, 2018 (IACD-18-142). The SCDHEC approved and the EPA provided comments on the Redline Revision 1 document in their letters dated April 19, 2018 (ARF-021481) and May 4, 2018 (ARF-021627), respectively. The DOE submitted the Revision 1.1 document (SRNS-RP-2017-00100, Revision 1.1, June 2018) (redline pages and clean copy) and SRS' responses to the regulatory comments on the Revision 1 document on July 11, 2018 (IACD-18-163). The SCDHEC and EPA approved the Revision 1.1 document in their letters dated August 9, 2018 (SRNS-OS-2018-00145 [ARF-021736]) and July 20, 2018 (SRNS-OS-2018-00119 [ARF-021714]), respectively.

On September 28, 2017, the DOE submitted the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for C-Area Groundwater Operable Unit (SRNS-RP-2017-00365, Revision 0, September 2017) and the Scoping Summary for the C-Area Groundwater Operable Unit (ERD-EN-2001-0146, July 2017) CERCLIS Number: 82 (IACD-17-160)* for regulatory review and comment. The SCDHEC and EPA provided comments on the Revision 0 RSER/EE/CA on November 27, 2017 (ARF-021312) and December 5, 2017 (ARF-021326), respectively. The DOE submitted the Revision 1 RSER/EE/CA (SRNS-RP-2017-00365, Revision 1, February 2018), SRS' responses to the regulatory comments on the Revision 0 document, and the draft action memorandum on February 22, 2018 (IACD-18-131). The 30-day public comment period for the RSER/EE/CA began on March 13, 2018 and ended on April 11, 2018. The SRS received no comments from the public during the public comment period. However, one comment was received from the EPA during the public comment period.

The SCDHEC approved and EPA provided comments on the draft Action Memorandum in their letters dated March 21, 2018 (ARF-021442) and April 18, 2018 (ARF-021483), respectively. The DOE submitted the final *Action Memorandum and Responsiveness Summary for the Non-Time Critical Removal Action for the C-Area Groundwater Operable Unit (U), SEMS Number: 82* on May 18, 2018 (IACD-18-150). The comments received during the RSER/EE/CA public comment period were addressed in the Responsiveness Summary. The Action Memorandum and Responsiveness Summary were public noticed on May 30, 2018.

The *Removal Action Design Plan (RADP) with Effectiveness Monitoring Plan (EMP) for the C-Area Groundwater (CAGW) Operable Unit (OU) (U) (SRNS-RP-2018-00807, Revision 0, August 2018) SEMS Number: 82 (IACD-18-171)* was submitted for regulatory review and comment on August 16, 2018. On September 19, 2018, the SCDHEC provided one specific comment (SRNS-OS-2018-00184 [ARF-021808]). In their September 21, 2018 letter, the EPA agreed with all aspects of the design and did not provide any comments, stating that the RADP could be finalized once SCDHEC's comment was addressed (SRNS-OS-2018-00185 [ARF-021801]). DOE submitted the Revision 1 RADP (SRNS-RP-2018-00807, Revision 1, October 2018) (redline pages and clean copies) and SRS' response to SCDHEC's comment on October 18, 2018 (IACD-19-103). The SCDHEC approved the Revision 1 RADP on November 15, 2018 (SRNS-OS-2018-00234 [ARF-021862]). EPA did not provide an additional approval letter since they had approved the Revision 0 RADP upon incorporation of the responses to SCDHEC's comments.

The removal action start was met on November 19, 2018 with the subcontractor's installation of one of three groundwater monitoring wells. The new monitoring wells were installed to establish baseline conditions downgradient from the injection well locations as part of the CAGW OU preferred removal action: Treatment Barrier Using Emulsified Oil (IACD-19-116, dated December 26, 2018). The subcontractor mobilized on July 10, 2019 and injected approximately 32,850 gallons of an edible oil mixture into fifteen injection points. The subcontractor demobilized on August 13, 2019.

The Removal Action Report for the C-Area Groundwater OU will be submitted in FY2020.

- **P Area Groundwater Operable Unit, SEMS Number 81:** This unit is listed on Appendix C of the FFA for the SRS.

On October 30, 2017, the DOE submitted the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for Trichloroethylene Plume Discharging to Steel Creek in P-Area Groundwater Operable Unit (NBN) (U) (SRNS-RP-2017-00372, Revision 0, October 2017) and the Scoping Summary for the P-Area Groundwater Operable Unit (ERD-EN-2013-0009, May 2017) CERCLIS Number: 81 (IACD-18-101)* for regulatory review and comment. The SCDHEC and EPA provided comments on the Revision 0 RSER/EE/CA in their letters dated December 13, 2017 (ARF-021328 and ARF-021329). The DOE submitted the Revision 1 RSER/EE/CA (SRNS-RP-2017-00372, Revision 1, March 2018), SRS' responses to the regulatory comments on the Revision 0 document, and the draft action memorandum on March 27, 2018 (IACD-18-139). The 30-day public comment period for the RSER/EE/CA began on April 10, 2018 and ended on May 10, 2018. The SRS received no comments from the public during the public comment period. However, comments were received from the SCDHEC and EPA during the public comment period.

The EPA and SCDHEC provided comments on the draft Action Memorandum in their letters dated April 25, 2018 (ARF-021486) and April 26, 2018 (ARF-021487), respectively. DOE submitted the final *Action Memorandum and Responsiveness Summary for the Non-Time Critical Removal Action for the P-Area Groundwater Operable Unit (U), SEMS Number: 81* on May 29, 2018 (IACD-18-151). The SCDHEC's comment resulted in an editorial change to the Action Memorandum. The EPA's comments were addressed in the Responsiveness Summary. The Action Memorandum and Responsiveness Summary were public noticed on June 6, 2018.

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On March 27, 2018, DOE submitted the *Sampling and Analysis Plan Addendum for the P-Area Groundwater Operable Unit (U) (SRNS-RP-2018-00261, Revision 0, February 2018) CERCLIS Number: 81 (IACD-18-140)*. The EPA and SCDHEC provided comments on the Revision 0 report in their letters dated May 4, 2018 (ARF-021626) and May 24, 2018 (ARF-021662), respectively. DOE submitted the Revision 1 document (SRNS-RP-2018-00261, Revision 1, August 2018) (redline pages and clean copies) and SRS' responses to the regulatory comments on the Revision 0 document on September 10, 2018 (IACD-18-173). The Sampling and Analysis Plan Addendum was approved by SCDHEC and EPA on October 10, 2018 and October 18, 2018, respectively (SRNS-OS-2018-00198 [ARF-021825] and SRNS-OS-2018-00204 [ARF-021826]).

The *Removal Action Design Plan (RADP) with Effectiveness Monitoring Plan (EMP) for the P-Area Groundwater (PAGW) Operable Unit (OU) (U) (SRNS-RP-2019-00105, Revision 0, April 2019) SEMS Number: 81 (IACD-19-146)* was submitted for regulatory review and comment on April 23, 2019. On May 23, 2019, the SCDHEC approved the Revision 0 document (SRNS-OS-2019-00156 [ARF-022186]). On May 31, 2019, the EPA provided three general comments and four specific comments (SRNS-OS-2019-00164 [ARF-022187]). DOE submitted the Revision 1 RADP (SRNS-RP-2019-00105, Revision 1, July 2019) (redline pages and clean copies) and SRS' responses to EPA's comment on July 8, 2019 (IACD-19-170). The SCDHEC and EPA approved the Revision 1 RADP on August 6, 2019 and August 15, 2019, respectively (SRNS-OS-2019-00164 [ARF-022293] and SRNS-OS-2019-00245 [ARF-022299]).

The removal action start was met on April 8, 2019 with the initiation of site preparation activities that included abandonment of soil borings and extension of monitoring well piping (IACD-19-145, dated April 18, 2019). The selected removal action is the use of a permeable reactive barrier that involves the placement of zero-valent iron into the subsurface barrier to intercept and treat the trichloroethylene and other associated volatile organic compounds as they flow through the zone of iron emplacement.

The Removal Action Report for the P-Area Groundwater OU will be submitted in FY2020.

- **D Area Coal Storage Area (484-17D), SEMS Number: 63:** This unit is listed on Appendix K of the FFA for the SRS.

The Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for the D-Area Coal Storage Area (484-17D) (U) (SRNS-RP-2018-00813, Revision 0) was initially scheduled for submittal on September 30, 2018. However, due to additional work agreed to by DOE, EPA, and SCDHEC, DOE submitted an extension request for regulatory approval (IACD-18-183, dated September 25, 2018). Additional time was needed to refine the cost estimates associated with the removal action alternatives identified in the RSER/EE/CA. The design and constructability of the removal action alternatives revealed additional scope and costs that needed to be considered in the estimate. The SCDHEC and EPA approved the extension request on September 27, 2018 and September 25, 2018 (via email), respectively (SRNS-OS-2018-00190 [ARF-021817] and SRNS-OS-2018-00188 [ARF-021802]). EPA's official approval was received on October 22, 2018 (SRNS-OS-2018-002015 [ARF-021829]). Based on the regulatory approval of the extension request, the submittal date for the Revision 0 RSER/EE/CA was revised from September 30, 2018 to November

30, 2018. The submittal date for the Action Memorandum was also revised from March 31, 2019 to May 31, 2019.

The *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for the D-Area Coal Storage Area (484-17D) (U) (SRNS-RP-2018-00813, Revision 0, November 2018) and the Scoping Summary for the D-Area Coal Storage Area (484-17D) (ERD-EN-2018-0041, August 2018)* SEMS Number: 63 were submitted for regulatory review on November 28, 2018 (IACD-18-177). The SCDHEC provided comments on the Revision 0 RSER/EE/CA on January 24, 2019 (SRNS-OS-2019-00018 [ARF-021923]). Due to the partial federal government shutdown that lasted from December 22, 2018 to January 25, 2019, the EPA submitted a thirty-day extension notification in their letter dated February 19, 2019 (SRNS-OS-2019-00053 [ARF-021958]). On March 4, 2019, the EPA submitted their comments on the Revision 0 RSER/EE/CA (SRNS-OS-2019-00053 [ARF-021962]). On March 28, 2019, DOE submitted a thirty-day extension notification for submittal of the Revision 1 RSER/EE/CA and SRS' responses to the regulatory comments to allow additional time to resolve the comments on the Revision 0 document (IACD-19-136). This changed the Revision 1 submittal date from April 3, 2019 to May 3, 2019. On April 30, 2019, DOE submitted an extension request for the submittal of the Revision 1 RSER/EE/CA, SRS' responses to the regulatory comments, and subsequent milestones (IACD-19-147). The additional time was required because the responses to the EPA's comments were not resolved during the thirty-day notification time period. The extension request was emailed to SCDHEC and EPA on April 29, 2019. The SCDHEC and EPA (via email) approved the extension request on May 1, 2019 and April 29, 2019, respectively (SRNS-OS-2019-00046 [ARF-022160] and SRNS-OS-2019-00119 [ARF-022150]). Based on the regulatory approvals, the Revision 1 RSER/EE/CA (including SRS' responses to the regulatory comments) and Action Memorandum due dates were revised to May 3, 2019 and July 30, 2019, respectively. There was no change to the Removal Action start date of April 30, 2020.

The *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for the D-Area Coal Storage Area (484-17D) (U) (SRNS-RP-2018-00813, Revision 1, June 2019) (Clean Copy), Savannah River Site's Responses to Regulatory Comments on the Revision 0 Document, and Draft Action Memorandum, SEMS Number: 63* were submitted on June 6, 2019 (IACD-19-154). The 30-day public comment period for the RSER/EE/CA began on June 13, 2019 and ended on July 13, 2019. The SRS received no comments from the public during the public comment period.

On July 2, 2019, the SCDHEC provided conditional approval of the draft Action Memorandum (SRNS-OS-2019-00193 [ARF-022252]). DOE submitted the final *Action Memorandum and Responsiveness Summary for the Non-Time Critical Removal Action for the D-Area Coal Storage Area (484-17D), SEMS Number: 63* on July 24, 2019 (IACD-19-174). The SCDHEC's conditional approval comment resulted in an editorial change to the Action Memorandum. The Action Memorandum and Responsiveness Summary were public noticed on August 7, 2019. In their letter dated August 15, 2019, EPA provided clarification / concurrence on the Action Memorandum (SRNS-OS-2019-00254 [ARF-022316]).

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The removal action activities for the D-Area Coal Storage Area (484-17D) are scheduled to commence on April 30, 2020. The preferred removal action is the addition of soil neutralization amendments to raise the pH of the vadose zone soils to reduce the acidic leachate that contributes to low pH and metals plumes in groundwater. Upon conclusion of the removal action, a Removal Action Report summarizing the work will be prepared and submitted for regulatory review to document the completion of the removal action.

There were eighteen (18) maintenance activities initiated within Site Evaluation and RCRA/CERCLA Areas in FY2019 [Note: 19-005 was never issued.]. There were twenty-eight (28) maintenance activities carried over from previous years. Of the forty-six (46) activities identified in this report, twenty-two (22) have been completed; twenty (20) are in progress, in design, or planning phases, two (2) have been placed on hold, and two (2) were cancelled.

All but one of the operation and maintenance (O&M) activities were minor activities. The major maintenance activity O&M 12-019 (Incorporation of Additional Ash in the 288-F Ash Basin Landfill) is currently in progress.

The effort and time that the EPA and SCDHEC have given on the operable units and information discussed in this letter are greatly appreciated.

Questions from you or your staff may be directed to me at (803) 952-8365.

Sincerely,



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

IACD-20-108

cc:

G. K. Taylor, SCDHEC-Columbia
D. Scaturo, SCDHEC-Columbia
S. French, SCDHEC-Columbia
M. Reece, SCDHEC-Columbia
B. Cameron, SCDHEC-Aiken Environmental Affairs Office
T. R. Fuss, SCDHEC-Aiken Environmental Affairs Office
G. O'Quinn, SCDHEC-Aiken Environmental Affairs Office

D. Lloyd, EPA-Atlanta
R. H. Pope, EPA-Atlanta
J. Tufts, EPA-Atlanta
C. VanTrees, EPA-Atlanta

Table 1. Fiscal Year 2019 Maintenance Activity Summary

<u>O&M Plan #</u>	<u>Description</u>	<u>O&M Manual ID #</u>
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Completed Activities

08-008	Excavate and Backfill for Tank 10 Chromate Leak Under Work Order 00695186, H Tank Farm	262, WHM-006
12-011	WO1176996 - Excavation to Support Design of New Footers for Tank 24 at H Tank Farm.	WMN-003
16-005	Relocate Plant Air to Above Ground per M-DCP-H-09027	262
16-008	Replace PIV 2111	591
17-009	F-Area Utility Pole Treatment Project	308
17-011	Replacement of Two Post Indicator Valves (PIVs) near 281-2H	294, 295, 549, 591
18-002	254-5H Roadway Repair	591
18-008	Utility Pole Inspections L Area	584
18-012	Replace Storm Water Piping West of 772-F	563
18-015	Perform Air Gap of Domestic Water Feed at 607-1F	563, 283
18-016	"Inspection and Treatment of Power and Steam Poles within K-Area Operable Units 476 and 572".	476, 572
18-018	Back fill sink hole North of 2F Evaporator WO # 01664708-01	283
18-019	Investigate Sinkhole West of 105-1K, K Area Site Evaluation Area 514	514
18-020	H-Area E3S Replacement & ARGUS Implementation	549,344
18-021	F Area Inspection of Steam Poles	162, 199, 227, 270, 277
18-022	WO # 01671568 Excavation in H Area (Closed no Excavations)	No Excavation. W/O Closed
19-001	Package 01654083-02, Primary Purge Ventilation Stack Excavation.	283
19-002	Repair leak in F Area near FTF Fence	563
19-006	K Area Quonset installation at 105-13K inside evaluation area 476	476
19-008	"Tank 26 Clean out French drain verify depth", W.O. 1706712 task 1	283
19-009	"Repair of Site Infrastructure Domestic Water Valve 40 Located East of 284-19H."	262, 298, 549, 591
19-012	Fire Water Leak in H Area	294, 295, 391, 549, 591

Table 1. Fiscal Year 2019 Maintenance Activity Summary (Continued)

<u>O&M Plan #</u>	<u>Description</u>	<u>O&M Manual ID #</u>
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In Process/Hold/Cancelled Activities

07-009*	L Area Disassembly Basin and Sand Filter Supply and Return Line Replacement	303, 479
10-016*	299-H Limited Area Security Fence Modification	SPH-002, CMH-002
12-019	Incorporation of Additional Ash in the 288-F Ash Basin Landfill	276
14-012+	Laydown Pad Installation Outside L Area Inner Fence ¹	479, 560
14-014	Excavate and Isolate the Transfer Line from Tank 12 to HBD2 in H Tank Farm	262, WHN-006
16-004+	Repair Steam Condensate Leaks West of Tanks 25/26	283
16-009	Install Additional Shielding Tank 21 S Riser	WMH-003, WMH-005
17-010	Excavation Activities to Investigate, Identify and Repair Water Intrusion into LAD/HAD Cells C&D, 772-F Courtyard	SPF-008, 563
18-011	Reroute Steam Trap Drain & Establish a New French Drain near 236-H per M-DCF-H-13309	591
18-014	Repair PIV 2134 near 704-55H	344, 374, 549, 591
18-017	“Tank 27 Excavate for Transfer Line Tie in Per m-dcp-f-17003.” WO Task # 01654082-03	591
18-023	Repair Domestic Water Line near 281-15H	294, 298, 344, 549, 591
19-003	Repair leak in 285-H Basin Wall	549 Gen Sep Eastern GW and 591 H-Area Process Sewers as Abandoned
19-004	SRR work package 01651514 “Excavate To Install Well Water Mod Per P-DCP-H-16008”.	348
19-007	Fire water leak at valve house 8A near 773-A	TBD
19-010	“Disassembly Basin Cooling & Filtration System (DBCF) Underground Piping Non-Destructive Examination”	303, 479
19-011	“L-Area Office Trailer Replacement Project”	560
19-013	Installation of PIV near 704-H	TBD
19-014	L Area PIDAS Stef will send copy when available	303, 305, 479, 560
19-015	Installation of new 221-H canyon truck well perm power	344, 391, 549, 591
19-016	work package 01731710-02 Excavate and install footers per P-DCP-F-18005. Tank 44	283

Table 1. Fiscal Year 2019 Maintenance Activity Summary (Continued/End)

<u>O&M Plan #</u>	<u>Description</u>	<u>O&M Manual ID #</u>
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In Process/Hold/Cancelled Activities

19-017	Soil disturbances to support ground rod installation for the L-area HVAC replacement project	584, 303, 479, 560
19-018	Water leak near 247-H	531
19-019	F & H Area Lab Cell C & D Water Intrusion Removal	TBD

*On Hold

+ Cancelled

TBD – To Be Determined