



Department of Energy
Savannah River Operations Office
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NOV 23 2021

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Division of Site Assessment, Remediation and Revitalization
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Mr. Jon Richards
Savannah River Site Remedial Project Manager
Superfund Division
U. S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
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Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Federal Facility Agreement Annual Removal Action Report for Fiscal Year 2021

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) 2021 [October 1, 2020 through September 30, 2021], 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.

- **235-F – F-Area Material Storage Area:** This facility is listed on Appendix K of the FFA for the SRS.

On August 26, 2021, the DOE submitted the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for F-Area Material Storage Building (235-F) (SRNS-RP-2021-00001, Revision 0, August 2021)* and the *Scoping Summary for the F-Area Material Storage Building (235-F) (SRNS-RP-2020-00444, April 2021)* (IACD-18-154) for regulatory review and comment period. The RSER/EE/CA will be finalized and published for a 30-day public comment period in FY2022.

- **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.

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 and SRNS-OS-2018-00204).

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). On May 31, 2019, the EPA provided three general comments and four specific comments (SRNS-OS-2019-00164). 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 and SRNS-OS-2019-00245).

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.

On July 30, 2020, DOE submitted the *Removal Action Report for the P-Area Groundwater Operable Unit Non-Time Critical Removal Action (U) (SRNS-RP-2020-00021, Revision 0, July 2020) SEMS Number: 81* to EPA and SCDHEC for their review and comment (IACD-20-164). SCDHEC provided comments on September 25, 2020 (SRNS-OS-2020-00366). The EPA provided comments on October 9, 2021 (SRNS-OS-2020-00385). On November 18, 2020, DOE submitted the Revision 1 report (redline pages and clean copy) and SRS' responses to the regulatory comments on the Revision 0 report (ICD-21-107). SCDHEC and EPA approved the Revision 1 document on December 16, 2020 (SRNS-OS-2020-00483) and January 11, 2021 (SRNS-OS-2021-00006), respectively.

- **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 and SRNS-OS-2018-00188). EPA's official approval was received on October 22, 2018 (SRNS-OS-2018-002015). 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). 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). On March 4, 2019, the EPA submitted their comments on the Revision 0 RSER/EE/CA (SRNS-OS-2019-00053). 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 and SRNS-OS-2019-00119). 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). 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).

On April 8, 2020, DOE submitted an *Extension Request for the Removal Action Start of the D-Area Coal Storage Area (484-10D) SEMS Number: 63* (IACD-20-143). DOE proposed to extend the removal action start from April 30, 2020 to August 28, 2020 as a result of COVID-19 work restrictions. SCDHEC and EPA approved the extension request on April 8, 2020 (SRNS-OS-2020-00173) and April 9, 2020 (SRNS-OS-2020-00175), respectively.

On May 7, 2020, DOE notified EPA and SCDHEC that the removal action start was met on May 5, 2020 with the installation of the stormwater pollution prevention controls along the perimeter of the excavation area. 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. Excavation and addition of soil amendment began on May 12, 2020. Based on the results of several pH soil samples, SRS has verified the effectiveness of the amendment. The construction activities for the removal action were completed on December 15, 2020 (IACD-21-122, dated February 3, 2021). The removal action report is scheduled to be submitted in July 2022 and will include the follow-up monitoring data to evaluate the results of the removal action.

Table 1 summarizes the FY2021 maintenance activities. There were nineteen (19) maintenance activities initiated within Site Evaluation and RCRA/CERCLA Areas in FY2021. There were thirteen (13) maintenance activities carried over from previous years. Of the thirty-two (32) activities identified in this report, ten (10) have been completed, eighteen (18) are in progress, in design, or planning phases, one (1) has been placed on hold, and three (3) 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

Digitally signed by Brian T.

Hennessey

Date: 2021.11.22 14:34:54 -05'00'

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Infrastructure and Area Completion Division

Ms. Susan B. Fulmer
Mr. Jon Richards

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Table 1. Fiscal Year 2021 Maintenance Activity Summary

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

19-011	L-Area Office Trailer Replacement Project	560
19-013	Installation of PIV near 704-H	294, 295, 549, 591
20-002	Replace Steam Line Support Poles H47 and H48	262, 294, 295, 298, 344, 391, 549, 591
21-002	Repair Domestic Water Leak south west of 704-H	294, 295, 549, 591
21-003	Repair Drainage at 772-F	SPF-008, 308, 429, 563
21-004	Grout Manhole SA-26 outside of Section 9 221-F	343, 394, 563, 575, SPF-006, SPF-010
21-007	Install New Concrete Pad near 291-H Stack for ICAM Pad Air Monitors	344, 549, 591
21-010	Excavate to Repair a Domestic Water Isolation Valve near 701-4F	563
21-013	503-2A Diesel Generator Replacement	131, 387, 449, 510, 562
21-015	Repair Domestic Water Leak between 235-H and 237-H	549, 591

Table 1. Fiscal Year 2021 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 / On Hold / Cancelled Activities

12-019	Incorporation of Additional Ash in the 288-F Ash Basin Landfill	276
19-003 +	Repair Leak in 285-H Basin Wall	549, 591
19-014	L-Area PIDAS Enhancements	303, 305, 479, 560
19-015 +	Installation of New 221-H Canyon Truckwell Permanent Power	344, 391, 549, 591
19-019	F & H Area Lab Cell C & D Water Intrusion Removal	SPF-008, 308, 429, 563
20-005	Upgrade Electrical Systems at 901-H Segregation Valve Pit	294, 295, 549, 591
20-006	Excavation for the Electrolytic Dissolver Transformer Pad	344, 549, 591
20-009 *	Isolate Domestic Water Supply Line to 238/238-1H for D&R	531, 549, 591
20-010	Replace Conduit on the East Side of 221-H at Section 3 Stairs	344, 549, 591
20-011	Placement of New Concrete Pad for Repairing Domestic Water Lines South of 254-19H	549, 591
21-001	Expansion of 234-7H	549, 591
21-005	Install Concrete Pad and Metal Walkway to 794-A Sandfilter	387, 562
21-006	K-Area Entry Control Facility and Support Diesel, Southeast Corner of K-Area Protected Area	476
21-008	Spent Material Clean-up in the 725-1N Abrasive Blasting Operations Area	354
21-009	Excavate to Repair a Well Water Leak	WMF-005
21-011 +	Remove Water in Vacuum Line, Bldg 779-A, ICAMS Enclosure	N/A
21-012	Tritium Area Paving	142, 531, 549, 591
21-014	Replace Fire Water Line on West Side of 704-H	294, 295, 391, 591
21-016	H-17 Liquid Effluent Station Solar Panel Replacement and Ground Rod Installation Project	293, 549, 591
21-017	Tank 3 Excavate for Foundations	WMF-004, WMF-005, WMF-008
21-018	K-Area Excavation for the Installation of Electrical Power to a Handi-House West of the K-Area Settler Tank	572
21-019	L-Area Fence Installation	479

* On Hold

+ Cancelled