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

OCT 31 2018

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: Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00481, Redline Revision 1, November 2018), Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00479, Redline Revision 1, November 2018), Field Sampling Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00480, Redline Revision 1, November 2018), and Savannah River Site's Responses to the Regulatory Comments on the Revision 0 Documents, SEMS Number: 71

In accordance with the terms of the Federal Facility Agreement, the U. S. Department of Energy (DOE) is submitting the subject information for your review. There were no changes to Attachment 1, Sketches, in the Corrective Measures Implementation/Remedial Action Implementation Plan; therefore, they are not included in the redline document. They will be included in the clean copy document. The South Carolina Department of Health and Environmental Control (SCDHEC) and U. S. Environmental Protection Agency (EPA) provided comments on all three Revision 0 documents on August 30, 2018 and September 4, 2018, respectively. Please review and provide comments or approvals within thirty (30) days of receipt of the documents. The effort and time that the EPA and the SCDHEC have given on the subject 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, Karen Adams, at (803) 952-7871.

Sincerely,

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

IACD-19-107

Enclosures:

1. Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00481, Redline Revision 1, November 2018) SEMS Number: 71
2. Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00479, Redline Revision 1, November 2018) SEMS Number: 71
3. Field Sampling Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00480, Redline Revision 1, November 2018) SEMS Number: 71
4. SRS Responses to South Carolina Department of Health and Environmental Control Comments on the Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00481, Revision 0, June 2018) SEMS Number: 71
5. SRS Responses to South Carolina Department of Health and Environmental Control Comments on the Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00479, Revision 0, June 2018) SEMS Number: 71
6. SRS Responses to EPA Comments on the Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00481, Revision 0, June 2018) SEMS Number: 71
7. SRS Responses to EPA Comments on the Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00479, Revision 0, June 2018) SEMS Number: 71
8. SRS Responses to EPA Comments on the Field Sampling Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U) (SRNS-RP-2018-00480, Revision 0, June 2018) SEMS Number: 71

cc w/o encl:
D. Scaturo, SCDHEC-Columbia
S. French, SCDHEC-Columbia
M. D. Wilson, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
G. O'Quinn, SCDHEC - Aiken Environmental Affairs Office
R. H. Pope, EPA-Atlanta

cc w/encl:
M. McRae, TechLaw, Inc.

SRS Responses to South Carolina Department of Health and Environmental Control Comments on the Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U), SRNS-RP-2018-00481, Revision 0, June 2018, SEMS Number 71, received June 6, 2018.
Comments Received 08/30/2018

Specific Comments

1. Section 5.5, Schedule for Federal Facility Agreement Deliverables, page 15. According to Section 1.1, Purpose and Scope, "a forecast schedule and brief discussion of the contents of the upcoming post-ROD documents required" should be provided in CMI/RAIP. Section 5.5 merely states "The WADB PCR/RACR will be submitted within 120 days of completion of the RA." This does not constitute a brief discussion and at a minimum, Figure 5, Post-ROD Schedule, should be referenced in Section 5.5. Please amend accordingly.

Response: Agree.

The text in Section 5.5 will be replaced with the following:

> **"A schedule of the FFA milestones is provided in Figure 5. The WADB PCR/RACR will be submitted in accordance with the requirements for submittal of regulatory documents as identified in the FFA. The PCR/RACR is scheduled to be prepared and submitted to USEPA and SCDHEC in June 2020 which is within 160 calendar days of completion of the RA. The PCR/RACR will include items such as a chronology of events, performance standards and construction quality control information, a description of the construction activities, final inspections; project as-built drawings, a summary of project costs, and the results of the confirmation sampling."**

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

2. Table 1, Summary of the RGOs for the Wetland Area at Dunbarton Bay, page 25. The last column of this table is labeled "Most Likely RG". Please revised this column to "RG". At this point in the document process, remedial goals for the operable unit should be finalized.

Response: Agree.

The last column in Table 1 will be modified to read "RG". Footnote number 12 will also be modified from "Most Likely RG" to "RG".

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

I. GENERAL COMMENTS

1. Section 2.1 (Design Strategy) of the Corrective Measures Implementation/Remedial Action Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (OU), SEMS Number: 71, SRNS-RP-2018-00481, Revision 0, Savannah River Site, Aiken, South Carolina, dated June 2018 (CMI/RAIP) states, "A Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of South Carolina Standards for Stormwater Management and Sediment Reduction, Regulation 72-300 through 72-316 and National Pollutant Discharge Elimination System (NPDES) General Permit number SCR100000 to be implemented during construction activities, and establishment of permitting activities associated with the project;" however, a formal reference to the Stormwater Pollution Prevention Plan (SWPPP) is not included in Section 6.0 (References). Revise the CMI/RAIP to include a formal reference to the SWPPP.

Response: Agree.

The following reference has been added to Section 2.1 and Section 6.0 (References):

"SRNS, 2018b. *Dunbarton Bay Ash Remediation Comprehensive Stormwater Pollution Prevention Plan (SWPPP)*, C-ESR-P-00007, Revision 1, May 2018, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC"

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

2. Section 4.2 (Construction Activities) of the CMI/RAIP lists eleven general construction activities to be executed by the subcontractor per the design drawings, procurement specification, and the SWPPP. While the list is not exhaustive, several general construction activities are not included. Specifically,

   a. Section 4.4 (Waste Disposal and Transport) states, "Excavated ash will be loaded into haul vehicles and transported to an approved containment facility located off-SRS property via site and public roads in accordance with the accepted traffic safety plan;" however, Section 4.2 does not discuss the inclusion of an accepted traffic safety plan or traffic control plan.
   b. Section 4.7 (Health and Safety Plan) states, "Dust suppression requirements related to 40 CFR [Code of Federal Registry] 50.6 and South Carolina Regulation 61-62.6;" however, Section 4.2 does not discuss the inclusion of a dust control plan.
   c. Based on the Final RCRA Corrective Action Plan, OSWER Directive 9902.3-2A, dated May 1994 (CMI Guidance), a draft Operation and Maintenance (O&M) Plan should be

submitted simultaneously with the draft plans and specifications, yet Section 4.2 does not include an O&M Plan.

Revise Section 4.2 to include a more comprehensive list of general construction activities to be executed by the subcontractor per the design drawings, procurement specification, and the SWPPP.

Response: Agree with clarification.

To address items 2.a. and 2.b., the following general construction activities will be added to Section 4.2:

- ***Developing an accepted traffic safety plan and placement of traffic control signs;***
- ***Implementation of dust control methods in accordance with the SWPPP (SRNS 2018b);***

With respect to item 2.c., the development of an Operation and Maintenance (O&M) Plan is not applicable as a construction activity because there will be no installed equipment requiring procedures or training to operate. Aspects of the O&M Plan as listed in the CMI Guidance (OSWER Directive 9902.3-2A) that are applicable during excavation and disposal, include waste management practices, sampling and analysis, corrective measure completion criteria, and data management and documentation requirements. These items are addressed within the CMI/RAIP and/or the Field Sampling Plan (SRNS-RP-2018-00480). Maintenance and land use control of the portion of the waste unit that will still contain ash, wetland area and buffer area that are not being excavated is addressed in Section 5.3, Operations, Maintenance and Intuitional Control, and the Land Use Control Implementation Plan (LUCIP, SRNS-RP-2018-00479). No changes to the document are proposed with respect to item 2.c.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

3. Figure 5 (Post-ROD Schedule) does not provide sufficient detail. Based on the CMI Guidance, the project schedule must specify all significant steps in the process and when all corrective measure implementation (CMI) deliverables (e.g., O&M Plan, Corrective Measure Work Plan, design documents) are to be submitted. Revise Figure 5 to include all significant steps in the process and identify when all CMI deliverables are to be submitted.

Response: Agree with Clarification.

Figure 5 has been updated with more detail and includes the review and revision schedules for the CMI/RAIP and other documents that impact the design such as the Land Use Controls Implementation Plan (LUCIP), Field Sampling Plan (FSP) and Post Construction

Report (PCR). Per the response to General Comment 2.c., a separate O&M Plan is not appropriate since identified elements associated with O&M plans that are applicable to excavation and disposal of ash are contained within the CMI/RAIP.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

4. The CMI Guidance indicates that the CMI/RAIP should specify performance requirements for the overall corrective measure and for each major component; however, specific performance requirements are not provided for the each major component. Revise the CMI/RAIP to specify performance requirements for the overall corrective measure and for each major component.

Response: Clarification.

The design criteria, as listed in Section 2.4.2, includes excavation of ash and contaminated soil. The design drawings and specifications issued to the subcontractor provide detailed instructions for implementing the design criteria. Confirmation that the subcontractor is performing in accordance with the design documents is the responsibility of the SRNS sub-contract technical representative (STR) and SRNS engineering. Sampling to confirm that execution of the design meets the remedial goals will be performed in accordance with the Field Sampling Plan (SRNS-RP-2018-00480). Documentation that the design criteria have been met and that the remedial goals have been achieved will be provided in the Post Construction Report. No change to the document is proposed.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

II. SPECIFIC COMMENT

1. **Table 2, Applicable or Relevant and Appropriate Requirements, Page 26 of 32:**

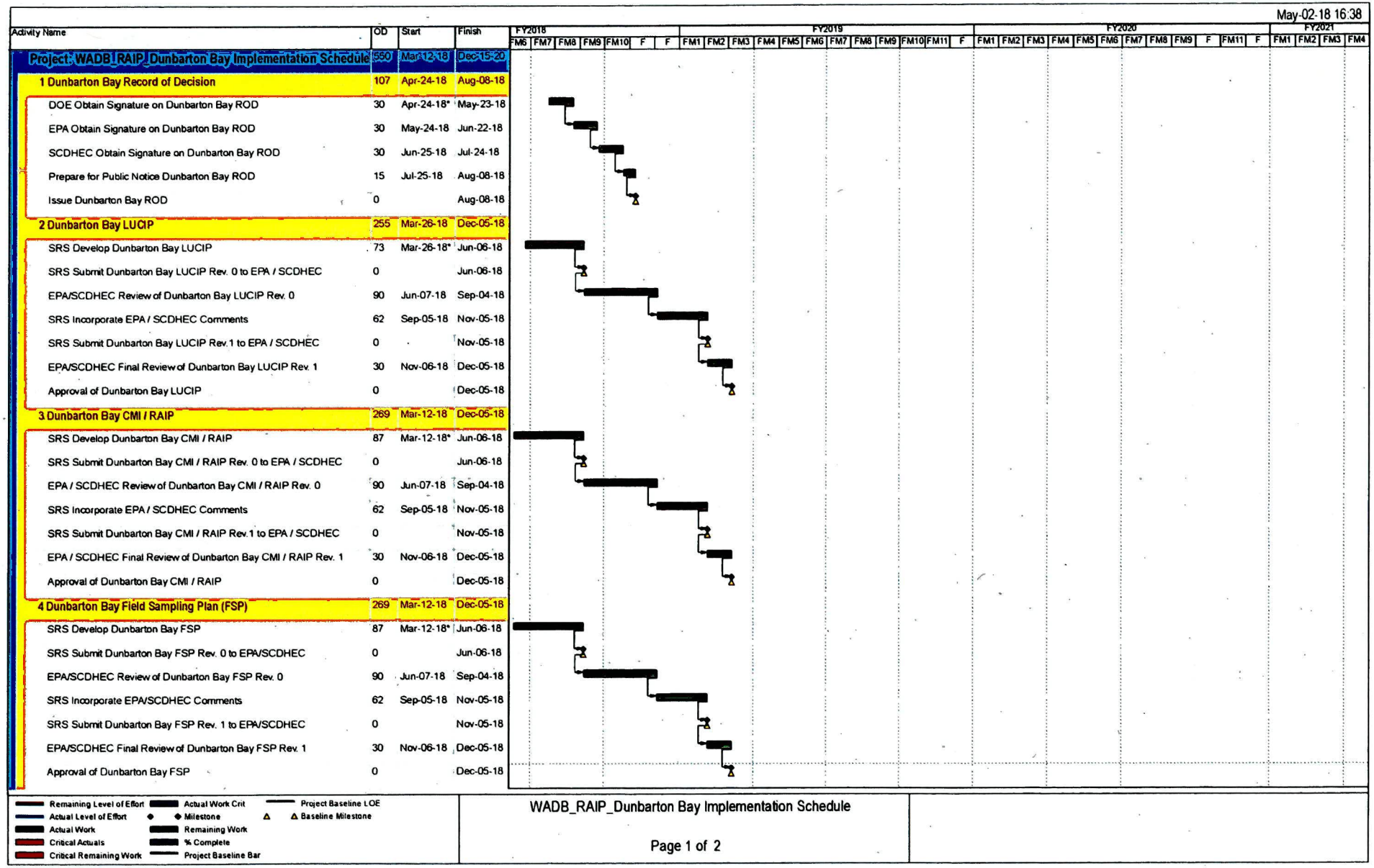
   The presence of wetlands is listed as a to-be considered (TBC) criterion in Table 2; however, it is unclear why this is considered a TBC as the protection of wetlands is typically identified as an Applicable criterion (40 CFR Part 6, Appendix A). Revise Table 2 to clarify why the presence of wetlands is identified as a TBC criterion.

Response: Clarification

The regulations at 40 CFR 6 are the promulgated requirements mandating EPA comply with NEPA. 10 CFR 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements* are the Department of Energy' requirements for complying with NEPA and compliance with floodplain and wetland management and protection. Executive Order 11990 is not promulgated; therefore it does not meet the statutory definition of an ARAR,

but is considered a TBC. Acknowledgement of the adjacent wetland and implementation of the design controls to protect the wetland are identified in the first row of Table 2 as "Applicable" per 10CFR1022.3(a). No change to the table is necessary. Note that the construction activities will not occur within delineated wetlands. The design includes a buffer area and requires substantial sediment control structures and construction sequencing to protect the surrounding wetlands.

Responsible Party: Joseph Burch, (803) 952-6660, joseph.burch@srs.gov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1 Dunbarton Bay Record of Decision 107 Apr-24-18 Aug-08-18
DOE Obtain Signature on Dunbarton Bay ROD 30 Apr-24-18* May-23-18
EPA Obtain Signature on Dunbarton Bay ROD 30 May-24-18 Jun-22-18
SCDHEC Obtain Signature on Dunbarton Bay ROD 30 Jun-25-18 Jul-24-18
Prepare for Public Notice Dunbarton Bay ROD 15 Jul-25-18 Aug-08-18
Issue Dunbarton Bay ROD 0 Aug-08-18
2 Dunbarton Bay LUCIP 255 Mar-26-18 Dec-05-18
SRS Develop Dunbarton Bay LUCIP 73 Mar-26-18* Jun-06-18
SRS Submit Dunbarton Bay LUCIP Rev. 0 to EPA / SCDHEC 0 Jun-06-18
EPA/SCDHEC Review of Dunbarton Bay LUCIP Rev. 0 90 Jun-07-18 Sep-04-18
SRS Incorporate EPA / SCDHEC Comments 62 Sep-05-18 Nov-05-18
SRS Submit Dunbarton Bay LUCIP Rev.1 to EPA / SCDHEC 0 Nov-05-18
EPA/SCDHEC Final Review of Dunbarton Bay LUCIP Rev. 1 30 Nov-06-18 Dec-05-18
Approval of Dunbarton Bay LUCIP 0 Dec-05-18
3 Dunbarton Bay CMI / RAIP 269 Mar-12-18 Dec-05-18
SRS Develop Dunbarton Bay CMI / RAIP 87 Mar-12-18* Jun-06-18
SRS Submit Dunbarton Bay CMI / RAIP Rev. 0 to EPA / SCDHEC 0 Jun-06-18
EPA / SCDHEC Review of Dunbarton Bay CMI / RAIP Rev. 0 90 Jun-07-18 Sep-04-18
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EPA / SCDHEC Final Review of Dunbarton Bay CMI / RAIP Rev. 1 30 Nov-06-18 Dec-05-18
Approval of Dunbarton Bay CMI / RAIP 0 Dec-05-18
4 Dunbarton Bay Field Sampling Plan (FSP) 269 Mar-12-18 Dec-05-18
SRS Develop Dunbarton Bay FSP 87 Mar-12-18* Jun-06-18
SRS Submit Dunbarton Bay FSP Rev. 0 to EPA/SCDHEC 0 Jun-06-18
EPA/SCDHEC Review of Dunbarton Bay FSP Rev. 0 90 Jun-07-18 Sep-04-18
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SRS Submit Dunbarton Bay FSP Rev. 1 to EPA/SCDHEC 0 Nov-05-18
EPA/SCDHEC Final Review of Dunbarton Bay FSP Rev. 1 30 Nov-06-18 Dec-05-18
Approval of Dunbarton Bay FSP 0 Dec-05-18
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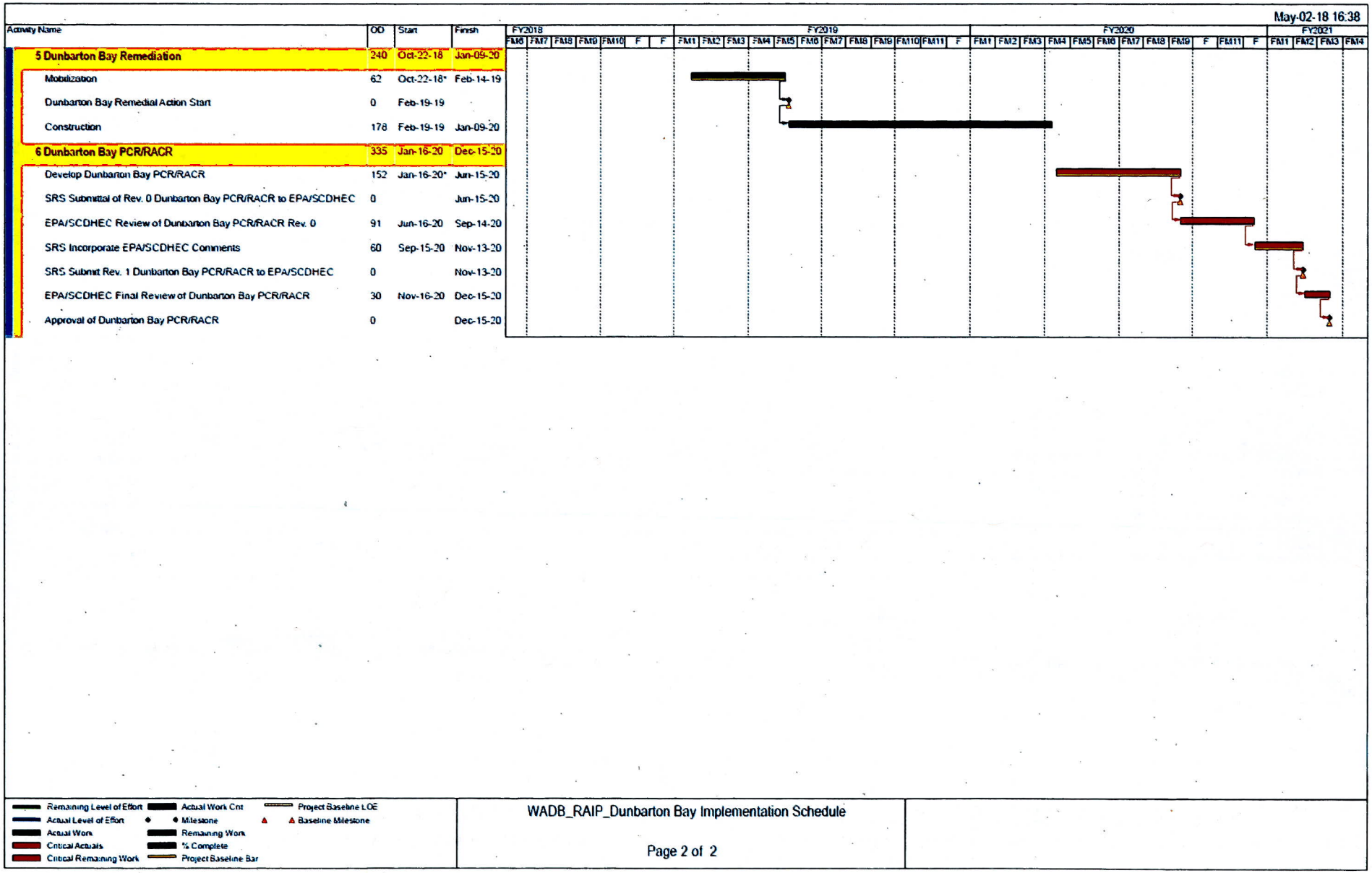
Page 1 of 2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Mobilization 62 Oct-22-18* Feb-14-19
Dunbarton Bay Remedial Action Start 0 Feb-19-19
Construction 178 Feb-19-19 Jan-09-20
6 Dunbarton Bay PCR/RACR 335 Jan-16-20 Dec-15-20
Develop Dunbarton Bay PCR/RACR 152 Jan-16-20* Jun-15-20
SRS Submittal of Rev. 0 Dunbarton Bay PCR/RACR to EPA/SCDHEC 0 Jun-15-20
EPA/SCDHEC Review of Dunbarton Bay PCR/RACR Rev. 0 91 Jun-16-20 Sep-14-20
SRS Incorporate EPA/SCDHEC Comments 60 Sep-15-20 Nov-13-20
SRS Submit Rev. 1 Dunbarton Bay PCR/RACR to EPA/SCDHEC 0 Nov-13-20
EPA/SCDHEC Final Review of Dunbarton Bay PCR/RACR 30 Nov-16-20 Dec-15-20
Approval of Dunbarton Bay PCR/RACR 0 Dec-15-20
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WADB_RAIP_Dunbarton Bay Implementation Schedule
Page 2 of 2

SRS Responses to
South Carolina Department of Health and Environmental Control Comments on the Land Use Control Implementation Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U), SEMS Number: 71 (SRNS-RP-2018-00479, Revision 0, June 2018) received June 6, 2018.
Comments Received 08/30/2018

General Comments

1. The LUCIP states on page 5, third paragraph, that the Site Use Program is to prevent the onsite worker from exposure to waste left in place at the Wetland Area at Dunbarton Bay. Page 9, Section 4.7, states that the field inspections will occur once every 5 years due to the low levels of contaminants. In the ROD, page 13, Summary of Human Health Risk Assessment (HHRA), 4th paragraph, the site-specific onsite worker receptor scenario had exposure assumptions of "20 years, 150 days per year, and 8 hours a day. These parameters were based on input provided by SREL for a wetland researcher." HHRA for the onsite worker resulted in a risk of 9.9E-5. Please provide the further justification as to why this inspection rate is adequate for this operable unit. Also, upon further review of the Fifth Five-Year Remedy Review for RODs at OUs with LUCs, it was noted that all operable units with LUCs which included sign inspections had an inspection frequency of at least annually (one had semiannually).

Response: Clarification.

The LUCs are for ash that will remain in a wetland area and the buffer zone. There is no engineered structure like a cap or cover system that would settle or change state due to the construction activity. The inspection items on Attachment B would only ensure that the signs are intact, roads are accessible, and unauthorized construction activities have not occurred. Because the WADB is interior to SRS boundaries fencing, security and administrative controls for employees are the primary means to prevent trespassers. Unauthorized construction activities are unlikely due to the SRS Site Use/Site Clearance program requirements and controls. An inspection rate of 5 years (or after unusual weather conditions) is consisted with the approved inspection schedule for signs in the Lower Three Runs Tail Portion Early Action LUCIP. The LTR tail portion does not include the added controls of security and perimeter fencing. No change to the document is proposed.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

Specific Comments

1. Section 4.7, Field Inspection and Maintenance for Land Use Controls, page 10. For the sake of consistency with LUCIPs for other OUs, an additional sentence should be included at the end of the incomplete paragraph at the top of this page to address any necessary repairs that may need to be performed for items in Appendix B.

Response: Agree.

The first paragraph in Section 4.7 will be revised as follows:

"After remediation of the WADB, only inspection and maintenance activities will be required by this RA. Maintenance activities will be performed for items in Appendix B that are found to be in unsatisfactory condition."

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

TECHNICAL COMMENTS

1. **Section 4.1, Property Record Notices and Restrictions, Page 6 of 20:**

Review of this section indicates that the substantive use restrictions achieved by the institutional controls are not sufficiently described. For example, the first bulleted item on this page states that contracts, deeds, or other transfer documents will include restrictions on residential use of the site. However, Section 3.0, Land Use Control Objectives, indicates that use restrictions also include elementary and secondary schools, child care facilities, and playgrounds; these use restrictions are not listed in Section 4.1. In addition, Section 3.0 indicates that removal or excavation of ash/contaminated soil should be prevented; however, associated restrictions are not specified in Section 4.1. *Revise Section 4.1 to ensure that all applicable use restrictions to be included in any contracts, deeds, or transfer documents are described to ensure that the land use control (LUC) objectives are met.*

Response: Agree.

The first bullet in Section 4.1 will be modified as follows:

- **"The contract, deed, or other transfer document shall also include restrictions ~~precluding residential use of the property~~ to prevent removal or excavation of ash/contaminated soil media, prevent future industrial uses that result in unacceptable exposure to contaminated media, and prohibit future residential housing, elementary and secondary schools, childcare facilities and playground uses of the property. ~~However, t~~ The need for these restrictions may be reevaluated at the time of transfer in the event that exposure assumptions differ, and/or the residual contamination no longer poses an unacceptable risk under residential use. Any reevaluation of the LUCs will be done through an amended ROD with USEPA and SCDHEC review and approval."**

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

2. **Section 4.3, Site Use Program, Page 8 of 20:**

The last paragraph on this page states that the Department of Energy (DOE) will notify the Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) in advance of any change to internal site management procedures, including the Site Use Program, which would affect implementation or maintenance of LUCs; however, it is unclear how far in advance DOE will provide notice to EPA and SCDHEC, as this is not specified. *Clarify how far in advance DOE will provide notice to the regulatory agencies of changes to applicable site management procedures, ensuring ample time is granted for review of applicable procedural changes.*

Response: Disagree.

There is no required time period specified in the EPA LUC Checklist to notify EPA and SCDHEC of a change to an internal procedure that would affect implementing or maintaining the LUCs other than "in advance." The language in the document is based on EPA's LUC checklist #17 which states, "...a commitment by the [federal agency] to notify EPA *in advance* of any changes to the internal procedures that would affect the LUCs." The language in the WADB LUCIP is consistent with the template language that was agreed to between Brenda Hays (DOE attorney) and Susan Capel (EPA attorney) in June 2007, who explicitly agreed that no timeframe for prior notification be specified. The EPA LUCIP checklist has not changed since these agreements. No change to the document is proposed.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

3. **Section 4.5, Warning Signs, Page 9 of 20:**

It is unclear which compass direction the warning signs face, as this is not specified. If signs are to face away from Dunbarton Bay, it is unclear if a trespasser potentially could access the site from Dunbarton Bay itself, especially during the dry season. Similarly, it is unclear why four signs are sufficient. For example, it is unclear if additional signs along the road to the southwest of Dunbarton Bay are warranted. *Revise Section 4.5 to clarify the compass direction the warning signs will face, and provide rationale for the selected direction. In addition, provide rationale for the number of signs to be installed.*

Response: Agree.

The ash that will remain in place and subject to LUCs is within the buffer area and the northwest portion of Dunbarton Bay. The most likely access points to this area of Dunbarton Bay are from one of two secondary roads identified as the Powerline Road (74-28) or an unpaved secondary road that intersects Road B, south of Dunbarton Bay (74-30). The figure showing the location of these access signs will be modified to show the secondary roads and the intersection of these roads with the primary roads, Road B and Road F. An additional sign will be added to warn a trespasser encroaching from the secondary road that intersects Road B. The revised figure is attached to these comment responses.

The text in Section 4.5 will be modified to add the following description of the signs:

"Five proposed locations have been selected for the access control warning signs as shown in Figure 4. These locations range between 150 and 200 ft apart from each other and are positioned at likely ingress points. Access to this area is from either of two secondary roads, the Powerline Road (SRS road 74-28) or an unpaved secondary road that intersects Road B (SRS Road 74-30). Signs parallel to the Powerline Road ingress points will be oriented to the north, and signs along SRS Road 74-30 will be oriented to the west. ~~In addition, the,~~ The

final placement of the signage will be documented in the PCR/RACR. Waste unit warning signs for SRS are designed to be legible for a distance of at least 7.6 m (25 ft)."

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

4. **Section 4.7, Field Inspection and Maintenance for Land Use Controls, Pages 9 and 10 of 20:**

This section states that DOE will conduct inspections to ensure that access control signs are in place; however, it is unclear if the LUC monitoring program will include a periodic document review to ensure that institutional controls (e.g., deed restrictions, permit program) are being implemented and maintained in addition to the engineering controls. *Clarify if a document review will be conducted as part of the LUC monitoring program to ensure that institutional controls are being implemented and maintained, and how often this review will be conducted.*

Response: Clarification.

As documented in the ROD for the Wetland Area at Dunbarton Bay (SRNS-RP-2013-00730, Rev. 1, April 2018), a 5-year remedy review is required for the selected remedial action. The 5-year remedy review process includes a document review to ensure that institutional controls are being implemented and maintained. No change to the document is proposed.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

5. **Section 4.7, Field Inspection and Maintenance for Land Use Controls, Pages 9 and 10 of 20:**

The last paragraph on page 9 states that additional inspections may be necessary in the event of "unusual weather or any other condition warranting inspection." It is unclear what constitutes "unusual weather" and what types of "other conditions" may warrant inspection. As such, it is unclear how it will be determined if additional inspections are necessary. *Revise this section to provide the specific qualifying criteria that may trigger the need for additional inspections.*

Response: Agree.

Unusual weather that may trigger additional inspections includes storms with significant wind force or ice storms that could result in tree damage to access control signs. The phrase "other conditions warranting inspection" is generic document template language that was agreed to by DOE, USEPA, and SCDHEC to capture unanticipated events. The text in Section 4.7 will be revised as follows:

"The WADB will be inspected per the Field Inspection Checklist in Appendix B. Due to the low levels of contaminants and their presence within a wetland, field inspections will be

performed every five years. Additional inspections may be necessary in the event of unusual weather (e.g., storms with significant wind force or ice storms that could result in tree damage to access control signs) or any other condition warranting inspection. For the WADB, inspections will be performed to ensure that access control signs are in place and are legible."

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

6. **Section 4.7, Field Inspection and Maintenance for Land Use Controls, Page 10 of 20:**

This section states that DOE will conduct inspections to ensure that access control signs are in place; however, inspections should also ensure that access signs are legible. It should be noted that Appendix B, Field Inspection Checklist for WADB, requires verification that the signs are legible from a distance of 25 feet. *Revise this section to specify that inspections will ensure that access signs are legible.*

Response: Agree.

The text in Section 4.7 will be modified to add "and are legible". Please see the revised text in the response to comment 5.

Responsible Party: Monique Rabin, (803) 952-6695, monique.rabin@srs.gov

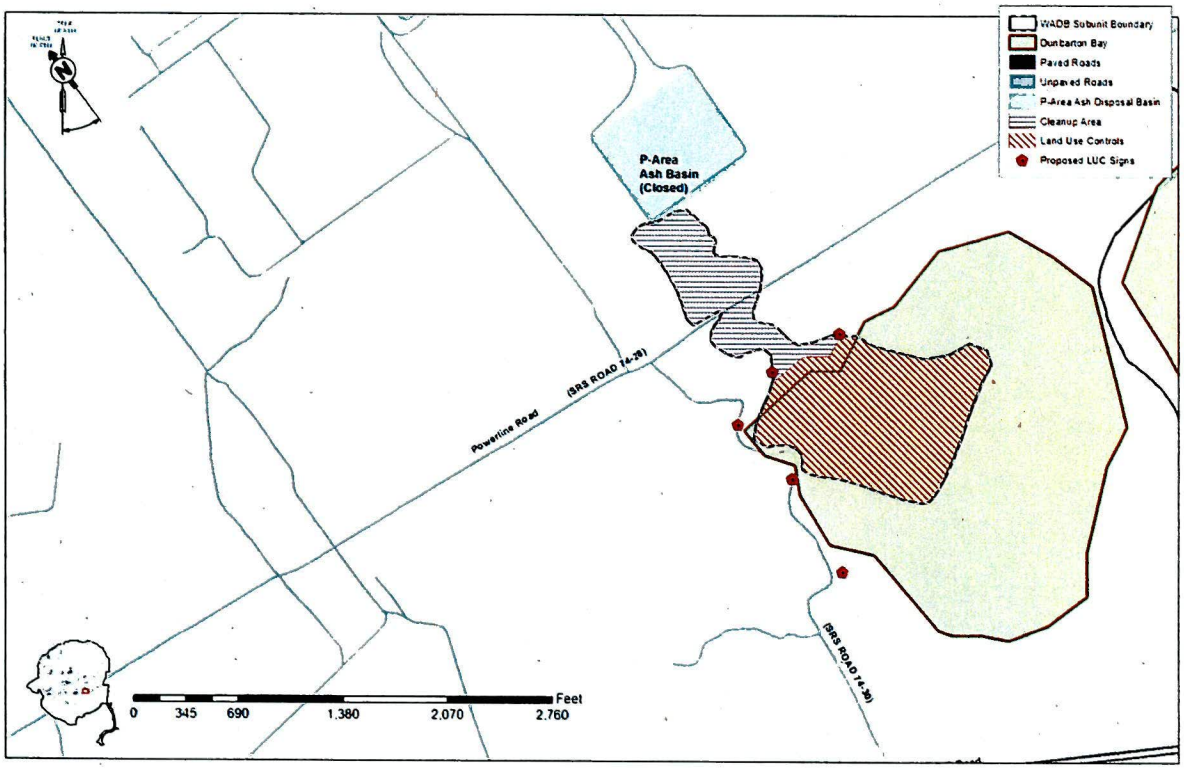

Figure 4. Land Use Control Boundary for the WADB (Revised)

TECHNICAL COMMENTS

1. **Section 1.1, Purpose for Sampling, Page 1 of 16:**

   Section 1.1 states, "The reason for sampling per this FSP [Field Sampling Plan for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (U), SEMS Number: 71, SRNS-RP-2018-00480, Revision 0, dated June 2018] is to ensure remedial goals (RGs) have been achieved upon completion of the remedial action at the WADB [Wetland Area at Dunbarton Bay]." This section should clarify that the remedial action only applies to the ash and contaminated soil media from the boundary of the P-Area Ash Basin to the edge of the buffer at Dunbarton Bay. Revise this section to clarify this.

Response: Agree.

The following sentence will be added to the end of the paragraph in Section 1.1, Purpose for Sampling:

"The remedial action at WADB includes the removal of ash and contaminated soil from the boundary of the P-Area Ash Basin to a 30-m (100-ft) buffer boundary around the Dunbarton Bay.

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2. **Section 1.4, Statement of Broad Objectives for the Sampling, Page 4 of 16, and Table 1, Summary of the RGs for the Wetlands Area at Dunbarton Bay, Page 13 of 16:**

   The FSP refers to the selected RGs as the "most likely" RGs. For clarity, it is recommended that the term "most likely" be changed to "selected." In addition, Section 1.4 should be revised to clarify that the selected RG is the most restrictive risk-based RG if it is greater than background concentrations; if the most restrictive risk-based RG is less than the background concentration, then the RG defaults to a SRS background value. Revise the FSP accordingly.

Response: Agree.

Table 1 will be modified to replace "most likely RG" with "Selected RG" in the column heading and note number 12. The beginning of the second paragraph in Section 1.4, Statement of Broad Objectives for the Sampling, will be modified as follows:

"The ~~most likely~~ selected RGs in Table 1 consider a comparison to local background levels.

The selected RG is the most restrictive risk-based RG if it is greater than background concentrations; if the most restrictive risk-based RG is less than the background concentration, then the selected RG defaults to a SRS background value."

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3. **Section 2.0, Analytical Plan, Page 5 of 16:**

   This section states that a visual inspection will be conducted to confirm that all ash has been removed. It is unclear what specific inspection procedures will be followed (e.g., walking of transects, perimeter), as inspection procedures, if any, are not discussed. Similarly, it is unclear who will be responsible for conducting the inspection (e.g., the removal equipment operator, construction oversight team), and what constitutes visual detection of ash (e.g., specific coloring). This is of particular concern given that this site is proposed for unrestricted use following the removal action. Revise this section to clarify the visual inspection procedures, the party responsible for implementing them, and what constitutes visual detection of ash.

Response: Agree.

The inspection process is defined in the contract documents for the ash removal. There are no formal SRS procedures for this inspection. SRNS Engineering personnel and the SRNS subcontract representative (STR) are responsible for implementing the visual inspection. Visual detection of ash will be accomplished by soil color. The excavation depths are planned for 1 to 3 ft below ground surface. Ash deposits will be noticeable compared to the natural soil. Section 2.0, Analytical Plan, will be modified to add the following information:

"The *Confirmation Sampling and Analysis Plan for Coal and/or Ash Removal at the Savannah River Site (U)* (SRNS 2014) establishes a general rule of one (1) sample per acre; the area to be remediated at WADB is ~5 ha (12 ac). Sampling will not occur until ash deposits are no longer visible in the excavated areas. An inspection by SRNS Engineering and the SRNS subcontract technical representative (STR) will be performed after the subcontractor has excavated to the planned depths as defined in the Corrective Measures Implementation/Remedial Action Implementation Plan (SRNS 2018b). The inspection will include a field walkdown/reconnaissance of the excavated area. If the soil is stained or grey and the soil texture and grain size distribution are indicative of ash after excavation, additional excavation will be performed until all ash has been removed. After visual inspection that all the ash has been removed, samples..."

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4. **Section 2.0, Analytical Plan, Page 5 of 16:**

This section states that the *Confirmation Sampling and Analysis Plan for Coal and/or Ash Removal at the Savannah River Site (U), Rev. 1.1, SRNS-RP-2013-00332, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC, dated 2014* establishes a "general rule" of collection of one confirmation sample per acre. It is unclear if this sampling program is sufficient for the WADB as this is not discussed in the FSP. For example, it is unclear if collection of side-wall samples in addition to excavation floor samples is warranted at the WADB, based on site-specific conditions and the known extent of contamination (or lack thereof). Similarly, it is unclear if collection of excavation floor samples at a greater frequency than one per acre may be appropriate based on known contaminant distribution (or lack thereof). Revise this section to provide rationale for the selected confirmation sample frequency and type.

Response: Agree.

An additional sampling location has been added to account for geometry of the extent of ash. Ash was deposited in the remediation area due to overflow from the now closed P-Ash Basin. The ash followed the natural drainage pattern and topography. The overflow area is unlike a typical basin in that there are no areas designated as a "floor" or "sidewall". The number of samples is distributed over the sampling grid is slightly greater than the general rule of one sample per acre as prescribed in *Confirmation Sampling and Analysis Plan for Coal and/or Ash Removal at the Savannah River Site (U)*. The rationale for the selected confirmation frequency has been added to Section 2.0, Analytical Plan, as identified below:

"After visual inspection that all the ash has been removed, samples from the 0- to 0.3-m (0- to 1-ft) soil interval will be collected from ~~twelve~~ thirteen (~~12~~13) locations within the excavation area as identified in Figure 4. The sampling grid for the WADB is consistent with the frequency of confirmation sampling conducted at other coal and ash removal areas at SRS and is tailored to the excavation pattern and the ash distribution that followed the topographic contours as verified during characterization sampling. The confirmation samples will be ~~and~~ analyzed for arsenic, cesium-137 (+D), potassium-40, radium-226 (+D), and uranium-238 (+D)."

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5. **Section 2.0, Analytical Plan, Page 5 of 16:**

According to Section 1.3, Sampling Unit Characterization History, the elevation of the powerline road across which the ash historically flowed has been raised, and culverts have

been installed beneath the road. It is unclear if and how the presence of the road will impact the ability to visually confirm that all ash has been removed and the collection of representative confirmation samples, as this is not discussed in the FSP. Revise Section 2.0 to clarify if and how the presence of the road will impact the ability to visually confirm that all ash has been removed and the collection of representative confirmation samples.

Response: Clarification.

During a Core Team meeting in May 2012, a key agreement was made to address the ash above and below the Powerline Road (74-28). The integrity of the road would not be compromised. The Powerline Road and adjacent side slopes are elevated with respect to the surrounding areas and were constructed between 1955 and 1965 (based on review of historical photos) to prevent sheet flow over the road. Stormwater flow was directed from the north to the south through engineered culverts. Ash within the drainage next to the Powerline Road will be excavated; however, the road and side slopes will not be excavated. The raised side slopes likely covered any ash that was present. If ash is visible on the Powerline Road side slopes, the SRNS subcontract technical representative and SRNS engineering will determine if additional ash excavation is possible without compromising the integrity of the road or if clean fill material is needed. The presence of the road will not impact sampling. No change to the document is proposed.

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6. **Section 2.0, Analytical Plan, Page 5 of 16:**

In the event that confirmation samples contain concentrations of contaminants that do not meet the RGs, the contingency sampling plan is unclear, as it is not specified in the FSP. For example, it is unclear if additional sampling will be conducted on a per-acre basis, or at a greater frequency, etc. Revise this section to clarify the contingency sampling plan (e.g., number of samples and depths) should confirmation sample concentrations not meet RGs.

Response: Agree.

The following text has been added to the last paragraph in Section 2.0, Analytical Plan:

"The analytical portion of the confirmation exercise is meant to corroborate the visual inspection conclusion that no ash remains. The sampling is being conducted as a second level of confirmation/verification that the ash has been removed and the remaining soil concentrations meet RGs. The analytical results from the thirteen (13) samples (mean concentration/activity) will be statistically compared (i.e., hypothesis testing performed) to the RGs as a second level of verification/confirmation that no ash related hazardous

constituents exceeding residential risk levels or SRS background levels (as appropriate) remain at the waste unit following the initial visual inspection. If the mean concentration from the dataset exceeds RGs, the locations of the individual sample result exceedances will be re-examined and considered for additional excavation. Results of the verification sampling will be presented in the Post Construction Report /Remedial Action Completion Report."

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7. **Section 2.2, Sample Location Map, Page 6 of 16:**

This section states, "If the limits of excavation differ from what is shown in Figure 4, the Northing and Easting grid lines will determine inclusion of additional area(s) into a particular grid. A sample location, if deemed appropriate by the STR [subcontract technical representative], may be designated outside the boundaries as shown in Figure 4, but in an excavation area determined necessary during field work." Based on this, it is unclear what criteria will be used to determine if collection of additional confirmation samples is warranted. For example, it is unclear if additional confirmation samples will be collected only if a minimum of an additional acre requires excavation. Revise this section to clarify the criteria that will be used to determine if collection of additional confirmation samples is warranted.

Response: Agree.

During the remediation, ash may be discovered outside of the current ash extent boundary. This condition would require that the STR notify engineering and the subcontractor that additional ash removal is necessary. Additional sample locations may be collected, or sample locations may be designated outside the current ash extent boundary, if ash is discovered in unanticipated locations. The last paragraph is Section 2.2, Sample Location Map, will be modified as follows:

"Samples shall be from random locations within each designated grid location as determined in the field by the subcontract technical representative (STR). This strategy will allow for some variation in the boundaries of the excavated area, which is expected, without precluding a predesignated or unforeseen sample location. If the limits of excavation differ from what is shown in Figure 4, the Northing and Easting grid lines will determine inclusion of additional area(s) into a particular grid. A sample location, if deemed appropriate by the STR due to the discovery of additional ash outside of the current ash extent boundary, may be designated outside the boundaries as shown in Figure 4, but in an excavation area determined necessary during field work. The STR shall determine and record coordinates for each actual sample location."

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8. **Figure 4, WADB Sampling Grid Locations, Page 12 of 16:**

Review of this figure indicates that a large area of excavation is proposed to the east of grid square N-06; however, no confirmation sample is proposed in this area. To ensure that contamination is sufficiently removed from this area, it appears that collection of an additional confirmation sample in this area is warranted. Revise the FSP to propose the collection of an additional confirmation sample from the grid square located east of grid square N-06, or justify why this is not necessary.

Response: Agree.

An additional sampling location has been added to account for geometry of the extent of ash. Please see the response to comment 4 and the revised sampling grid attached to these responses.

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9. **Table 1, Summary of the RGs for the Wetlands Area at Dunbarton Bay, Page 13 of 16:**

The notes at the bottom of this table indicate that RGs were calculated for each applicable receptor population; however, it is unclear how the RGs were calculated, as no supporting equations or input parameters are provided. Therefore, the RGs are not supported. Revise Table 1 to clarify how the RGs were calculated or provide reference to the supporting document where these calculations can be found.

Response: Agree.

The RG calculations are provided in the Focused Corrective Measures Study/Feasibility Study for the WADB (SRNS-RP-2012-00252). A reference to this document has been included after footnotes 3 through 9, and 13 in Table 1. A reference to the Record of Decision (SRNS-RP-2013-00730) has been added to footnote 12, to provide the supporting document for the selected RG.

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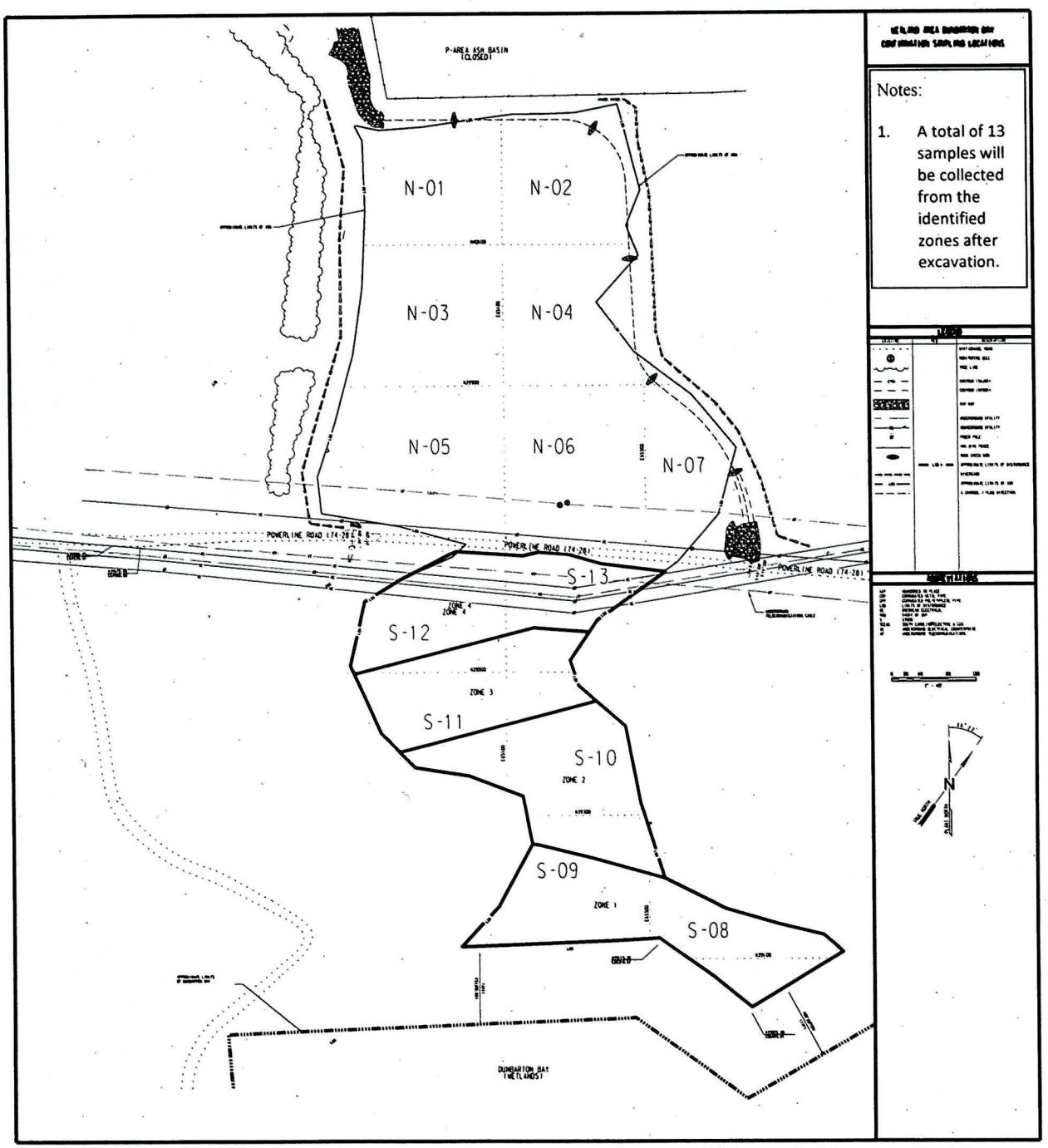

Figure 4. WADB Sampling Grid Locations (Revised to add sample location N-07)