SC DEPARTMENT of ENVIRONMENTAL SERVICES

Division of Waste Management
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

BUREAU OF LAND AND WASTE MANAGEMENT
HAZARDOUS AND MIXED WASTE MANAGEMENT PERMIT

SC1 890 008 989

Permit Effective Date:	TBD
Last Modification Effective Date:	TBD
Permit Expiration Date:	(See Appendix A)

This Permit is hereby issued to:

Facility Name:	United States Department of Energy/Savannah River Site
Facility Address:	Post Office Box A Aiken, SC 29802
Facility Contact:	Brian M. Stephens 803-952-6925

This Permit is for treatment, storage, corrective action and postclosure care of hazardous and mixed waste management facilities contained in this permit and identification and corrective action for all solid waste management units (SWMUs) and areas of concern (AOCs) located at United States Department of Energy/Savannah River Site, in Aiken, Allendale and Barnwell Counties, South Carolina.

This Permit is issued pursuant to Section 44-56-10 et seq. and Regulation 61-79 of the 1976 South Carolina Code of Laws, as amended. The authority granted hereunder is subject to the requirements of the aforementioned laws and regulations and the attached conditions.

Kent Krieg, Director
Division of Waste Management
Bureau of Land and Waste Management

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TABLE OF PERMIT MODIFICATIONS

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Effective Date	Class	Location in Permit	Description of Change
TBD	3	Cover Page	Updated Facility Contact.
		Module IIIB Module IIIC	Changed post-closure to postclosure for document consistency.
		Module IIIG	Updated Condition IIIG.F to reflect the submittal of the postclosure plan.
		Module IVA	• Revised Condition IVA.B.10(c) to increase percentage of Met-Lab compliance wells to be sampled. • Revised Appendix IVA-B to include additional wells installed in Sections III and V. • Revised naming convention for recovery wells that were converted to monitoring wells in Sections III and VIII. • Updated the concentration for Acetone on Appendix IVA-C. • Permit modification to revise Appendix IVA-C. • Revised frequency of sampling of plume definition wells in Appendix IVA-E. • Updated Appendix IVA-E to increase percentage of Met-Lab compliance wells to be sampled. Updated Appendix IVA-F to reflect actual completion dates and revised dates for corrective action.
		Module IVB Module IVC	Corrected typographical errors.

Module I. STANDARD CONDITIONS

I.A.

The Permittee shall construct and/or operate the Mixed Waste Management Facility, Mixed Waste Storage Buildings, and the Sanitary Landfill at the SRS in accordance with the terms and conditions of this permit and in accordance with Volumes I, VII, VIII, and XXIII of the 2023 RCRA Permit Renewal Application, as approved and as amended by all subsequent approved revisions. The Permittee shall construct and/or operate the Transuranic Waste Pads 3-6, 14-19, & 26 and the Solvent Storage Tanks S33 - S36 Facility at the SRS in accordance with the terms and conditions of this permit and in accordance with Volume I of the 2023 RCRA Permit Application and Volumes XIII and XXV of the 2013 RCRA Permit Renewal Application, as approved and as amended by all subsequent approved revisions. The Permittee shall construct and/or operate the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities (HWMFs), the F-Area HWMF, and the H-Area HWMF at the SRS in accordance with the terms and conditions of this permit and in accordance with Volume I of the 2023 RCRA Permit Application and Volumes III, IV, and V of the 2013 RCRA Permit Renewal Application, as approved and as amended by all subsequent approved revisions. The Permittee shall operate the Consolidated Incineration Facility (CIF) at the SRS in accordance with the terms and conditions of this permit and in accordance with Volume I of the 2023 RCRA Permit Renewal Application, as approved, and in accordance with Volume X of the 1988 RCRA Part B Permit Application, as approved, and each of these, as amended by all subsequent approved revisions. When the most recent permit applications for these facilities are determined complete, then revised conditions for these facilities will be incorporated into this permit by permit modification. Effective and expiration dates for each module of this permit are included in Appendix A – Permit Module Expiration Dates.

I.B. EFFECT OF PERMIT

This Permit is issued pursuant to the Resource Conservation and Recovery Act (RCRA), as amended. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104, or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment. [R.61-79.270.4, R.61-79.270.30(g)]

The Permittee shall treat onsite hazardous and mixed waste; store onsite hazardous and mixed waste; perform postclosure care; and perform corrective action in accordance with the Conditions of this Permit. Any storage, treatment, and/or disposal of hazardous waste not authorized in this Permit is prohibited, except as allowed by the South Carolina Hazardous Waste Management Regulations, R.61-79.

I.C. PERMIT ACTIONS

I.C.1 Permit Modification, Revocation and Reissuance, and Termination

This Permit may be modified, revoked and reissued, or terminated for cause as specified in R.61-79.270.41, R.61-79.270.42, and R.61-79.270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any Permit Condition. [R.61-79.270.30(f)]

I.C.2 Permit Renewal

This Permit may be renewed as specified in Permit Condition I.F.2 – Duty to Reapply. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations. [R.61-79.270.30(b)]

I.C.3 Permit Expiration

Pursuant to R.61-79.270.50, this Permit shall be effective for a fixed term not to exceed 10 years. This Permit and all Conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application (see R.61-79.270.10, R.61-79.270.13 through R.61-79.270.29) and, through no fault of the Permittee, the Department has not issued a new permit, as set forth in R.61-79.270.51.

I.D. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

I.E. DEFINITIONS

For the purposes of this Permit, terms used herein shall have the same meaning as those in R.61-79 Parts 124, 260, 264, 266, 268, and 270, unless this Permit specifically provides otherwise; where terms are not defined in the regulations or the Permit, the

meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.E.1 Approved Permit Application

For purposes of this Permit means the most recent RCRA Part A Application, Part B Application, and modifications approved by the Department for the duration of this permit.

I.E.2 Area of Concern (AOC)

For the purposes of this Permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigation and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and R.61-79.270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.E.3 Certified Laboratory

For the purposes of this Permit means a laboratory that has been approved by the Department to perform specific analyses referenced in R.61-79.260 through R.61-79.270.

I.E.4 Compliance Period

For the purposes of the groundwater requirements of this Permit is the number of years equal to the active life of the unit prior to the Department's approval of certification of closure. The compliance period includes any period of waste management activity that may have occurred prior to permitting and begins when the owner/operator initiates a compliance monitoring program for groundwater pursuant to R.61-79.264.99.

I.E.5 Contamination

For the purposes of this Permit refers to the presence of any hazardous constituent in a concentration which exceeds the naturally occurring concentration of that constituent in areas not affected by the facility.

I.E.6 Corrective Action

For the purposes of this Permit, may include all corrective actions necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents at the facility, regardless of the time at which waste was placed in the unit, as required under R.61-79.264.100(b) and R.61-79.264.101.

Corrective action may address releases to air, soils, surface water sediment, groundwater, or subsurface gas.

I.E.7 Corrective Action Management Unit (CAMU)

For the purposes of this Permit, includes any area within a facility that is designated by the Department under R.61-79.264 Subpart S for the purpose of implementing corrective action requirements under R.61-79.264.101 and RCRA Section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

I.E.8 Department

For the purposes of this permit means the South Carolina Department of Environmental Services, including personnel thereof authorized to act on behalf of the Department.

I.E.9 Extent of Contamination

For the purposes of this Permit is defined as the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above the naturally occurring concentration of that constituent in areas not affected by the facility.

I.E.10 Facility

For the purposes of this Permit, means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste, or for managing hazardous secondary materials prior to reclamation. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them). For the purpose of implementing corrective action under sections R.61-79.264.101. “Facility” includes all contiguous property under the control of the owner or operator seeking a permit under subtitle C of RCRA. This definition also applies to facilities implementing corrective action under RCRA Section 3008(h). The facility boundary is depicted in Appendix F - Facility Map.

I.E.11 Hazardous Constituent

For the purposes of this Permit are those substances listed in Appendix VIII (Hazardous Constituents) of R.61-79.261 and Appendix IX (Groundwater Monitoring List) of R.61-79.264.

I.E.12 Hazardous Waste Management Unit (HWMU)

For the purposes of this Permit is a contiguous area of land on or in which hazardous waste is managed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include surface impoundments, waste piles, land treatment areas, landfill cells, incinerators, tanks and their associated piping and underlying containment system, and container storage areas. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are managed.

I.E.13 Interim Measures

For the purposes of this Permit are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.

I.E.14 Land Disposal

For the purposes of this Permit and R.61-79.268 means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

I.E.15 Landfill

For the purposes of this Permit includes any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a CAMU.

I.E.16 Mixed Waste

For the purposes of this permit means waste that contains both hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.).

I.E.17 PostClosure Care Period

For the purpose of this Permit is a thirty-year (30) period beginning when a hazardous waste management unit is certified as closed and during which time the Permittee shall be required to maintain, monitor, and report in accordance with the appropriate requirements of R.61-79.264 Subparts F, K, L, M, N, and X.

The postclosure care period is unit specific and may be more or less than thirty years. The Department may modify the postclosure care period applicable to a unit if it finds that an extended or reduced period is sufficient to protect human health and the environment. [R.61-79.264.117]

I.E.18 Release

For the purposes of this Permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

I.E.19 Remediation Waste

For the purposes of this Permit includes all solid and hazardous wastes, and all media (including groundwater, surface water, soils and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under R.61-79.264.100, R.61-79.264.101 and RCRA Section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary but may include waste managed in implementing RCRA Sections 3004(v) or 3008(h) for releases beyond the facility boundary.

I.E.20 Schedule of Compliance/Compliance Schedule

For the purposes of this Permit, "Schedule of Compliance" and "Compliance Schedule" are interchangeable terms which mean a schedule of measures included in this Permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the S.C. Hazardous Waste Management Act and the South Carolina Hazardous Waste Management Regulations. [R.61-79.270.2]

I.E.21 Solid Waste

For the purposes of this Permit means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

I.E.22 Solid Waste Management Unit (SWMU)

For the purposes of this Permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time from which hazardous constituents might migrate, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA hazardous waste management units are also solid waste management units. Solid Waste Management Units (SWMUs) include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately and adequately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).

I.E.23 Tank

For the purposes of this Permit means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g. wood, concrete, steel, plastic) which provide structural support. [R.61-79.260.10]

I.E.24 Tank System

For the purposes of this Permit means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system. [R.61-79.260.10]

I.E.25 Temporary Unit (TU)

For the purposes of this Permit includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during remedial activities required under R.61-79.264.101 or RCRA Section 3008(h). Designated by the Department, such units must conform to specific standards as specified in R.61-79.264.553.

I.E.26 Unit

For the purposes of this Permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

I.F. DUTIES AND REQUIREMENTS

I.F.1 Duty to Comply

The Permittee shall comply with the Approved Permit Application and all Conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any Permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and the South Carolina Hazardous Waste Management Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application. [R.61-79.270.30(a)]

I.F.2 Duty to Reapply

If the Permittee intends to continue an activity allowed or required by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new permit at least one hundred eighty (180) days prior to permit expiration. The Permittee must comply with the public notice requirements of R.61-79.124.10. [R.61-79.270.10(h), R.61-79.270.30(b)]

I.F.3 Obligation for Corrective Action

The Permittee is required to continue this Permit for any period necessary to comply with the corrective action requirements of this Permit. [R61-79.264.101, R61-79.270.1(c), R.61-79.270.51]

I.F.4 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the Conditions of this Permit. [R.61-79.270.30(c)]

I.F.5 Duty to Mitigate

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. [R.61-79.270.30(d)]

I.F.6 Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the Conditions of this Permit. Proper operation and maintenance include effective performance, adequate

funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of a backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the Conditions of this Permit. [R.61-79.270.30(e)]

I.F.7 Duty to Provide Information

The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish the Department, upon request, copies of records required to be kept by this Permit. [R.61-79.264.74(a), R.61-79.270.30(h)]

I.F.8 Inspection and Entry

I.F.8(a) The Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and other documents, as may be required by law, to: [R.61-79.270.30(i)]

I.F.8(b) Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the Conditions of this Permit;

I.F.8(c) Have access to and copy, at reasonable times, any records that must be kept under the Conditions of this Permit;

I.F.8(d) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices or operations regulated as required under this Permit; and

I.F.8(e) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.F.9 Monitoring and Records

I.F.9(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste and/or contaminated media to be analyzed must be the appropriate method from Appendix I of R.61-79.261, the EPA Region 4 Quality System and Technical Procedures (most recent version), or an equivalent method as specified in the waste analysis plan of the Approved Permit Application, or otherwise approved by the

Department.

Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846), or an equivalent method approved by the Department, and must be performed by a laboratory certified for each specific parameter pursuant to the State Environmental Laboratory Certification Regulations, R.61-81 and R.61-79.260.11. [R.61-79.270.30(j)(1)]

I.F.9(b) The Permittee shall retain the following at the facility, or at another location as approved by the Department:

I.F.9(b)(i) Records of all monitoring information required under the terms of this Permit, including all calibration and maintenance records,

I.F.9(b)(ii) Records of all original strip chart recordings for continuous monitoring instrumentation,

I.F.9(b)(iii) Copies of all reports and records required by this Permit and all data used to prepare them,

I.F.9(b)(iv) Records of all data used to complete the application for this Permit, and

I.F.9(b)(v) Certification required by R.61-79.264.73(b)(9), if applicable.

The Permittee shall retain these items for a period of at least three (3) years from the date of the sample, measurement, report, record, certification, or application, or until corrective action is completed, whichever date is later.

This period may be extended by request of the Department at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility.

I.F.9(c) Pursuant to R.61-79.270.30(j)(3), records of monitoring information shall specify:

I.F.9(c)(i) The dates, exact place, and times of sampling or measurements;

I.F.9(c)(ii) The individuals who performed the sampling or measurements;

I.F.9(c)(iii) The dates analyses were performed;

I.F.9(c)(iv) The individuals who performed the analyses;

I.F.9(c)(v) The analytical techniques or methods used; and

I.F.9(c)(vi) The results of such analyses.

I.F.9(c)(vii) Monitoring results shall be reported at intervals specified by the Department. [R.61-79.270.30(l)(4)]

I.F.10 Reporting Planned Changes

The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions which may impact any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), or the areas contaminated by them. [R.61-79.270.30(l)(1)].

I.F.11 Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance with Permit requirements. [R.61-79.270.30(l)(2)]

I.F.12 Certification of Construction or Modification

The Permittee may not commence treatment or storage of hazardous waste at the facility until the Permittee has submitted to the Department, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and [R.61-79.270.30(l)(2)]

I.F.12(a) The Department has inspected the modified or newly constructed facility and finds it is in compliance with the Conditions of the Permit; or

I.F.12(b) Within fifteen (15) days of the date of submission of the letter required in Permit Condition I.F.12(a) above, the Permittee has not received notice from the Department of its intent to inspect, prior inspection is waived and the Permittee may commence treatment, storage, or disposal of hazardous waste.

I.F.13 Transfer of Permits

This Permit may be transferred to a new owner or operator only after notice to the Department pursuant to R.61-79.270.40 and only if the Permit is modified or revoked and reissued pursuant to R.61-79.270.41 to identify the new Permittee and incorporate such other requirements as may be necessary. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the postclosure care period, the Permittee shall notify the

new owner or operator in writing of the requirements of R.61-79.264 and R.61-79.270, and this Permit.

I.F.14 Change in Facility Property

The Permittee must submit a request to the Department for a permit modification in accordance with R.61-79.270.40 or R.61-79.270.42 if any portion of the facility property as defined in either Permit Condition I.E.10 - Facility, R.61-79.260.10, or depicted in Appendix F - Facility Map is transferred to or from any agency, private person, entity, successors and assigns, trustees, and/or receivers. A request for permit modification must be submitted to the Department at least ninety (90) days prior to property transfer.

I.F.15 Monitoring Reports

Monitoring results shall be reported at the intervals specified by the Department. [R.61-79.270.30(l)(4)]

I.F.16 Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on, interim or final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. [R.61-79.270.30(l)(5)].

I.F.17 Imminent Hazard Reporting

The Permittee shall report to the Department's Emergency Response Section at 1-888-481-0125 any noncompliance, imminent or existing hazard from a release of hazardous waste or hazardous constituents, or from a fire or explosion at the facility, which may endanger human health or the environment. The Permittee must also report to the Department's local Environmental Office and to the Hazardous Waste Permitting Project Manager. The Permittee shall also report any fire or explosion at or near a permitted unit or other hazardous waste management area. Such information shall be reported orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

I.F.17(a) Information concerning the release of any hazardous waste or hazardous constituents that may endanger public drinking water supplies. [R.61-79.270.30(l)(6)(i)(A)].

I.F.17(b) Information concerning the release or discharge of any hazardous waste, or hazardous constituents, or a fire or explosion at the facility, which could threaten the environment or human health outside the facility, or of any fire

or explosion at or near a permitted unit or other hazardous waste management area at the facility. [R.61-79.270.30(l)(6)(i)(B)].

I.F.17(c) The description of the occurrence and its cause shall include:

I.F.17(c)(i) Name, address, and telephone number of the owner or operator;

I.F.17(c)(ii) Name, address, and telephone number of the facility;

I.F.17(c)(iii) Date, time, and type of incident;

I.F.17(c)(iv) Name and quantity of materials involved;

I.F.17(c)(v) The extent of injuries, if any;

I.F.17(c)(vi) An assessment of actual or potential hazard to the environment and human health outside the facility, and

I.F.17(c)(vii) Estimated quantity and disposition of recovered material that resulted from the incident. [R.61-79.270.30(l)(6)(ii)].

I.F.17(d) A written report shall also be provided to the Department within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Permit Conditions I.F.17(a), I.F.17(b), and I.F.17(c); and include a description of the noncompliance or imminent hazard and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance or imminent hazard has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard. [R.61-79.270.30(l)(6)]

I.F.18 Manifest Discrepancy Report

If a significant discrepancy in a manifest is discovered, the Permittee must submit a letter report, including a copy of the manifest, to the Department. If the discrepancy is not resolved within 20 days, the Permittee must immediately submit a Discrepancy Report to the EPA e-Manifest System describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue. [R.61-79.270.30(l)(7)]

I.F.19 Unmanifested Waste Report

This report must be submitted to the Department within fifteen (15) days of receipt of unmanifested waste. [R.61-79.270.30(l)(8)]

I.F.20 Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above by Permit Conditions I.F.11 - Reporting Anticipated Noncompliance and I.F.17 - Imminent Hazard Reporting, at the time the monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.F.17(c), as applicable. [R.61-79.270.30(l)(10)]

I.F.21 Other Information

Whenever the Permittee becomes aware that he/she failed to submit any relevant facts or submitted incorrect information in a permit application or in any report to the Department, the Permittee shall promptly submit such facts or information. [R.61-79.270.30(l)(11)]

I.G. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Department shall be signed and certified in accordance with R.61-79.270.11 and R.61-79.270.30(k).

I.H. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT

One printed copy and one searchable electronic copy in portable document format (PDF) of all reports, notifications, or other information required by this Permit to be submitted to the Department should be sent to the Department by verifiable delivery at the following address:

Attn: Director
Division of Waste Management
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

I.I. CONFIDENTIAL INFORMATION

In accordance with R.61-79.270.12, the Permittee may claim confidential certain information required to be submitted by this Permit.

I.J. INFORMATION REPOSITORY

The Department may require the permittee to establish and maintain an information repository at any time, based on the factors set forth in R.61-79.124.33(b). The information repository will be governed by the provisions in R.61-79.124.33(c) through (f). [R.61-79.270.30(m)]

I.K. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

Until closure is completed, certified by an independent registered professional engineer, and verified by the Department, the Permittee shall maintain at the facility the following documents and amendments, revisions, and modifications to these documents:

I.K.1 Permit Application

The Approved Permit Application pursuant to R.61-79.270.2.

I.K.2 Waste Analyses Plan

As required by R.61-79.264.13 and this Permit.

I.K.3 Inspection Schedules

As required by R.61-79.264.15(b) and this Permit.

I.K.4 Personnel Training Documents and Records

As required by R.61-79.264.16(d) and this Permit.

I.K.5 Contingency Plan

As required by R.61-79.264.53(a) and this Permit.

I.K.6 Operating Record

As required by R.61-79.264.73 and this Permit.

I.K.7 Closure Plan

As required by R.61-79.264.112(a) and this Permit.

I.K.8 Installation Records

For all monitoring wells and all groundwater elevation data collected during the active life of the facility.

I.K.9 Groundwater Monitoring Records

Required by R.61-79.264.100 and this Permit.

I.K.10 All Other Documents

Required by Permit Conditions I.F.9 - Monitoring and Records, I.F.10 - Reporting Planned Changes, and I.F.11 - Reporting Anticipated Noncompliance.

I.L. DOCUMENTS TO BE MAINTAINED DURING POSTCLOSURE CARE PERIOD

Until postclosure care activities are completed, certified by an independent registered professional engineer, and verified by the Department, the Permittee shall maintain at the facility the following documents and amendments, revisions, and modifications to these documents:

I.L.1 Permit Application

The Approved Permit Application pursuant to R.61-79.270.2.

I.L.2 All Reports and Documentation

Regarding compliance with R.61-79.264.118 and this Permit during the postclosure care period.

I.L.3 Waste Analyses Plan

As required by R.61-79.264.13 and this Permit.

I.L.4 Contingency Plan

As required by R.61-79.264.53(a) and this Permit.

I.L.5 Operating Record

As required by R.61-79.264.73 and this Permit.

I.L.6 Inspection Schedules

As required by R.61-79.264.15(b) and this Permit.

I.L.7 PostClosure Plans

As required by R.61-79.264.118, R.61-79.270.14(b)13 and this Permit.

I.L.8 Documentation of Compliance

With R.61-79.264.119, R.61-79.264.120 and this Permit.

I.L.9 Corrective Action Plan(s) and Reports

As required by R.61-79.264.100 and R.61-79.264.101 and this Permit

I.L.10 Installation Records

For all monitoring wells and all groundwater elevation data collected during the postclosure care period.

I.L.11 Groundwater Monitoring Records

Required by R.61-79.264.100 and this Permit.

I.L.12 A Survey Plat and Record

Of the type, location, and description of hazardous waste or hazardous constituents disposed of within the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities (HWMFs), F-Area HWMF, H-Area HWMF, Mixed Waste Management Facility, Sanitary Landfill, and Solvent Storage Tanks S33 - S36 Facility, as required by R.61-79.264.119.

I.L.13 All Other Documents

Required by Permit Conditions I.F.9 - Monitoring and Records, I.F.10 - Reporting Planned Changes and I.F.11 - Reporting Anticipated Noncompliance.

Module II. GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall design, construct, maintain and operate the facility in a manner to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment, as required by R.61-79.264.31.

II.B. GENERAL WASTE ANALYSIS

The Permittee shall follow the waste analysis procedures required by R.61-79.264.13, as described in the Waste Analysis Plan, Volume I, Section C.2 and Section C of the respective volume of the Approved Permit Application.

The Permittee shall verify the analysis of each waste stream (leachate) annually as part of its quality assurance program, in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846), or equivalent methods approved by the Department. At a minimum, the Permittee shall maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct laboratory calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee shall inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this Permit.

II.C. SECURITY

The Permittee shall comply with the security provisions as specified in Volume I, Section F.1 and Section F of the respective volume of the Approved Permit Application and R.61-79.264.14.

The Permittee shall maintain security at the facility during the postclosure care period, in accordance with the Postclosure Plan, Volume I, Section I and Section I of the respective volume of the Approved Permit Application and R.61-79.264.117(b).

II.D. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the general inspection requirements set out in R.61-79.264.15 and Volume I, Section F.2 and Section F of the respective volume of the Approved Permit Application. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by R.61-79.264.15(c) and the Permit Application. Records of inspections shall be kept as required by R.61-79.264.15(d).

II.E. CONTINGENCY PLAN

II.E.1 Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan, Volume I, Section G and Section G of the respective volume of the Approved Permit Application, whenever there is a fire, explosion, or release of hazardous waste or constituents that could threaten human health or the environment. As applicable, the plan must cover the requirements of R.61-79.264.50 through R.61-79.264.56.

II.E.2 Copies of Plan

The Permittee shall comply with the requirements of R.61-79.264.53.

II.E.3 Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan, as required by R.61-79.264.54. Any amendment shall be subject to the requirements of R.61-79.270.41 and R.61-79.270.42.

II.E.4 Emergency Coordinator

A trained emergency coordinator shall be available at all times in case of an emergency, as required by R.61-79.264.55.

II.F. RECORD KEEPING AND REPORTING

The Permittee shall conduct record keeping and reporting as specified in this Permit.

II.F.1 Operating Record

The Permittee shall maintain a written operating record at the facility in accordance with R.61-79.264.73.

II.F.2 Quarterly Report

The Permittee shall comply with the quarterly reporting requirements of R.61-79.264.75.

II.G. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by R.61-79.264.16. This training shall follow the outline described in Volume I, Section H and Section H of the respective volume of the Approved Permit Application. The Permittee shall maintain training documents and records at the facility, as required by R.61-79.264.16(d) and (e).

II.H. REQUIRED NOTICES

II.H.1 Hazardous and Mixed Waste Imports

The Permittee shall not receive hazardous waste or mixed waste from a foreign source.

II.H.2 Hazardous and Mixed Waste from Off-Site Sources

The Permittee shall not receive hazardous or mixed waste from an off-site source unless as allowed by an order issued by the Department pursuant to the Federal Facility Compliance Act (FFCA). Before receipt of any hazardous or mixed waste from an off-site source in accordance with an FFCA order, the Permittee shall fulfill all regulatory requirements pertaining to receipt of waste from an off-site source. [R.61-79.264.12(b)]

II.I. SPECIAL PROVISIONS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of R.61-79.264.17. The Permittee shall follow the procedures for handling ignitable, reactive and incompatible wastes set forth in Volume I, Sections C, D, F and G and Sections C, D, F and G of the respective volume of the Approved Permit Application.

II.J. LOCATION STANDARDS

The Permittee shall comply with the requirements of R.61-79.264.18 and R.61-104, as applicable.

II.K. PREPAREDNESS AND PREVENTION

II.K.1 Required Equipment

At a minimum, the Permittee shall maintain at the facility the equipment set forth in the approved Contingency Plan, Section I, Volume G and Volume G of the respective volume of the Approved Permit Application, as required by R.61-79.264.32.

II.K.2 Fire Alarm System

The Permittee shall maintain a fire alarm system in accordance with R.61-79.264.31 and R.61-79.264.32 and as described in Volume I, Section G and Section G of the respective volume of the Approved Permit Application.

II.K.3 Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.K.1 - Required Equipment and II.K.2 - Fire Alarm System, as necessary, to assure its proper operation in time of emergency, as required by R.61-79.264.33.

II.K.4 Access to Communications or Alarm Systems

The Permittee shall maintain access to the communications or alarm systems, as required by R.61-79.264.34.

II.K.5 Required Aisle Space

At a minimum, the Permittee shall maintain adequate aisle space, as required by R.61-79.264.35 and the plans and specifications described in Section F of the of the respective volume of the Approved Permit Application.

II.K.6 Arrangements with Local Authorities

The Permittee shall maintain arrangements with state and local authorities, as required by R.61-79.264.37. If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

II.L. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of R.61-79.264.71, R.61-79.264.72, and R.61-79.264.76.

II.M. GENERAL CLOSURE REQUIREMENTS

II.M.1 Performance Standard

The Permittee shall close the facility as required by R.61-79.264.111 and in accordance with the Closure Plan included in Section I of the respective volume of the Approved Permit Application.

II.M.2 Amendment to Closure Plan

The Permittee shall amend the Closure Plan, in accordance with R.61-79.264.112(c), whenever necessary.

II.M.3 Notification of Closure

The Permittee shall notify the Department in writing at least sixty (60) days prior to the date on which closure will begin of any hazardous waste management unit included in this Permit or final closure of the facility. The Permittee shall notify the

Department at least forty-five (45) days prior to the date on which he/she expects to begin partial or final closure of a boiler or industrial furnace, as required by R.61-79.264.112(d).

II.M.4 Time Allowed for Closure

After managing the final volume of hazardous waste, the Permittee shall treat or remove from the units or facility all hazardous waste and shall complete closure activities in accordance with R.61-79.264.113 and the schedules specified in the approved Closure Plan, Section I of the respective volume of the Approved Permit Application.

II.M.5 Disposal or Decontamination of Equipment, Structures, and Soils

The Permittee shall decontaminate and/or dispose of all contaminated equipment, structures, and soils, as required by R.61-79.264.114 and the approved Closure Plan, Section I of the respective volume of the Approved Permit Application.

II.M.6 Certification of Closure

The Permittee shall certify that the unit(s) or facility has been closed in accordance with the specifications in the approved Closure Plan, Section I of the respective volume of the Approved Permit Application. [R.61-79.264.115]

II.M.7 Survey Plat

The Permittee shall submit a survey plat no later than the submission of certification of closure of each hazardous waste disposal unit, in accordance with R.61-79.264.116.

Module III. POSTCLOSURE CARE

III.A.

MODULE III POSTCLOSURE CARE
SECTION A
M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities

The M-Area and the Metallurgical Laboratory (MAML) Hazardous Waste Management Facilities (HWMFs) were combined to streamline the permitting and remedial actions. The Metallurgical Laboratory HWMF (Met Lab) is located in the same geographical area as the M-Area HWMF. The groundwater associated with the Met Lab comingles with the M-Area plume and will be remediated as part of the corrective action for the M-Area groundwater.

The M-Area HWMF consists of an unlined settling basin (surface impoundment), overflow ditch, seep area, and a Carolina Bay (Lost Lake). Between 1958 and 1985, these areas received liquid effluent from the M-Area fuel fabrication operations. This effluent contained solvents and degreasers which are considered hazardous under the South Carolina Hazardous Waste Management Act. During the time of operation, the capacity of the settling basin was approximately 7,920,000 gallons. The liquid effluent from the fuel fabrication operations entered the basin through an underground process sewer line on the north side. Liquid from the basin was discharged on the west side into a 920 foot overflow ditch which passed through a 2-3 acre seep area. An estimated 50% of all liquids overflowed from the basin infiltrated the ground in the seep area. From the seep area, the liquid entered Lost Lake, a Carolina Bay covering an area of approximately 25 acres. All liquids entering Lost Lake either seeped into the ground or evaporated. The M-Area HWMF was closed in accordance with the approved closure plan by April 26, 1991.

The Met Lab HWMF consists of a closed, unlined settling basin (surface impoundment), the process sewer line* leading to the basin, a drainage outfall to an adjacent Carolina Bay, and the Carolina Bay itself. Between 1956 and 1985, these areas received effluent from the then Savannah River Technology Center (now Savannah River National Laboratory) Equipment Engineering Section Metallurgical Laboratory. The effluent from the Metallurgical Lab contained solvents and degreasers which are considered hazardous under the South Carolina Hazardous Waste Management Act. During the time of operation, the capacity of the settling basin was approximately 145,000 gallons. Liquid entered the basin though an underground process sewer line on the north side and was ultimately discharged to the Carolina Bay on the south side via the A-007 drainage outfall. The Carolina Bay, a natural depression covering approximately six (6) acres, also received process influent from the A/M Area powerhouse. The settling basin was closed in accordance with the approved closure plan in 1992. The Carolina Bay was also closed and required no further action.

* During closure, approximately 400 ft of the influent process sewer line was excavated and placed within the settling basin. The remaining portion of the process sewer line was rerouted to the Effluent Treatment Facility.

MODULE III POSTCLOSURE CARE
SECTION A
M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities

IIIA.A. MODULE HIGHLIGHTS

The conditions of this module apply to the general postclosure care requirements for the M-Area and Metallurgical Laboratory (Met Lab) Hazardous Waste Management Facilities (HWMFs) identified and described in condition IIIA.B. This module presents permit conditions which address the regulatory requirements for postclosure care. Permit conditions which address the regulatory requirements for the groundwater corrective action program based on R.61-79.264.117-120, 264.310(b) and 264.100 are presented in Module IVA of this Permit.

IIIA.B. FACILITY AND UNIT IDENTIFICATION

The Permittee shall provide postclosure care for the M-Area facility that consists of a former surface impoundment, overflow ditch, seep area, and Carolina Bay (Lost Lake), subject to the terms and conditions of this permit, and described as follows:

Name of Unit	Type of Unit	Maximum Capacity	Description of Wastes Contained
M-Area Basin	Surface Impoundment	7,920,000 gallons	fuel fabrication operations effluent containing solvents and degreasers
M-Area Abandoned Process Sewer Line (see Fig B-2 of the Approved Permit Application)	Buried Pipe (from M-Area Basin fence line to M-Area fence line)		fuel fabrication operations effluent containing solvents and degreasers
Overflow Ditch		920 feet	fuel fabrication operations effluent containing solvents and degreasers

Name of Unit	Type of Unit	Maximum Capacity	Description of Wastes Contained
Seep Area		2-3 acres	fuel fabrication operations effluent containing solvents and degreasers
Lost Lake	Carolina Bay	approx. 25 acres	fuel fabrication operations effluent containing solvents and degreasers

The Permittee shall also provide postclosure care for the Met Lab facility that consists of an influent process sewer line, a former surface impoundment, drainage outfall, and Carolina Bay, subject to the terms and conditions of this permit, and described as follows:

Name of Unit	Type of Unit	Maximum Capacity	Description of Wastes Contained
Met Lab Basin	Surface Impoundment	145,000 gallons	Laboratory effluent containing solvents and degreasers
Influent Process Sewer Line	Buried Pipe		Laboratory effluent containing solvents and degreasers
Drainage Outfall	Surface Overflow, Drainage Ditches, Buried Pipe		Laboratory effluent containing solvents and degreasers
Carolina Bay	Carolina Bay	approx. 6 acres	Laboratory effluent containing solvents and degreasers

IIIA.C. POSTCLOSURE PROCEDURES AND USE OF PROPERTY

IIIA.C.1 PostClosure Care Period

The Permittee shall conduct postclosure care in accordance with the PostClosure Plan in Volume III of the Approved Permit Application, R.61-79.264.117-120, 264.310(b) and 264.100 for the M-Area and Met Lab HWMFs as described in Condition IIIA.B above. The Permittee shall conduct postclosure care for 30 years after the completion of closure, except that the 30 year postclosure care period may be shortened upon application and demonstration approved by the Department that the facility is secure, or may be extended if the Department finds this is necessary to protect human health and the environment. The initial postclosure care period began on April 26, 1991 and ended April 26, 2021. Due to the extensive groundwater plume associated with the M-Area, the postclosure care period for the M-Area is extended for an additional thirty years through April 26, 2051. The initial postclosure care period for the Met Lab began June 18, 1992 and was set to end June 18, 2022. The postclosure care period for the Met Lab is extended for an additional ten years through June 18, 2032.[R.61-79.264.117(a)]

IIIA.C.2 Groundwater Monitoring System

The Permittee shall maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of R.61-79.264 Subpart F during the postclosure period. [R.61- 79.264.117(a)(1)]

IIIA.C.3 Landfill Requirements

The Permittee shall comply with the requirements for landfills as follows: [R.61-79.264.310(b)]

IIIA.C.3(a) Maintain the integrity and effectiveness of the final cover; including making repairs to the liner system, as necessary, to correct the effects of settling, subsidence, erosion, or other events;

IIIA.C.3(b) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of R.61-79.264 Subpart F;

IIIA.C.3(c) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

IIIA.C.3(d) Protect and maintain surveyed benchmarks used in complying with the surveying and recordkeeping requirements of R.61-79.264.309.

IIIA.C.4 PostClosure Plan

The Permittee shall implement the PostClosure Plan in Volume III of the Approved Permit Application. All postclosure activities must be conducted in accordance with the provisions of the PostClosure Plan. [R.61-79.264.118(a)]

IIIA.D. INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the M-Area and Met Lab in accordance with R.61-79.264.117(a)(1)(ii).

IIIA.E. NOTICES AND CERTIFICATION

IIIA.E.1 Use of units

The Permittee shall not allow any use of the M-Area and Met Lab HWMF as designated in IIIA.B. which will disturb the integrity of the final cover, any components of the containment system, or the function of the monitoring systems during the postclosure care period. [R.61-79.264.117(c)]

IIIA.E.2 Amendments to PostClosure Plan

The Permittee must request a permit modification to authorize a change in the approved PostClosure Plan. This request must be in accordance with applicable requirements of R.61-79 Parts 124 and 270 and must include a copy of the proposed amendments to the application for approval by the Department. The Permittee shall request a permit modification whenever changes in operating plans of M-Area and Met Lab HWMF design affect the approved PostClosure Plan. The Permittee must submit a written request for a permit modification at least 60 days prior to the proposed change in M-Area and Met Lab HWMF design or operation, or no later than 60 days after an unexpected event has occurred which has affected the approved PostClosure Plan. [R.61-79.264.118(d)]

IIIA.E.3 Removal Request

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any; or contaminated soils, then he/she shall request a modification to this postclosure permit in accordance with the applicable requirements in R.61-79.124 and 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of R.61-79.264.117(c). [R.61-79.264.119(c)]

IIIA.E.4 Certification of Completion of PostClosure Care

No later than sixty (60) days after completion of the established postclosure care period, the Permittee shall submit to the Department, by registered mail, a certification that the postclosure care for the hazardous waste disposal units was performed in accordance with the specifications in the approved PostClosure Plan. The certification must be signed by the Permittee and qualified professional engineer. [R.61-79.264.120]

IIIA.F. REPORTING, RECORDKEEPING AND RESPONSE

The Permittee shall enter all monitoring, testing, analytical data, inspection, and maintenance reports as required by R.61-79.264.73(b)(6).

Module III POSTCLOSURE CARE

SECTION D
Mixed Waste Management Facility

III.D.

The Mixed Waste Management Facility (MWMF) is an area of landfill units within the greater Burial Ground Complex (BGC) and which consists of 58 acres of initial MWMF trenches. This module will also address 13 acres of the Solvent Rag Portions of the Low Level Radioactive Waste Disposal Facility (LLRWDF) included as part of the MWMF postclosure. The initial MWMF trenches received waste from 1972 to 1986 and were unlined with no leachate collection system. The hazardous, radioactive and mixed wastes disposed in these trenches were untreated. Some of the wastes were uncontained, other wastes were buried or encapsulated in concrete and some wastes were contained in concrete or steel boxes. Primary constituents in these wastes included metals, spent and ignitable solvents and a number of radionuclides. The MWMF was closed in accordance with the approved closure plan in 1990 and verified closed in April 1991.

The Solvent Rag Portions of LLRWDF, which is adjacent to the MWMF, includes trench areas similar to the initial MWMF trenches, engineered low level trenches (ELLT) and greater confinement disposal (GCD) areas. This area began receiving waste in 1986 and was verified closed in October of 2002. Most of the wastes are contained except for miscellaneous bulky equipment in some of the trenches. A total of 4,268,326 cubic feet of hazardous waste and 34,404 cubic feet of non-hazardous are buried in the Solvent Rag Portions. The wastes include F-listed solvent rags, radioactively contaminated process waste and soil, Class B and C wastes (as defined by the Nuclear Regulatory Commission - NRC) and other high-activity waste forms.

The conditions of this module apply to the general postclosure care requirements for the hazardous waste management unit[s] as described below in Permit Condition IIID.B. - PostClosure Procedures and Use of Property. The conditions for Corrective Action as required by R.61-79.264.100; Detection Monitoring as required by R.61-79.264.98; Compliance Monitoring as required by R.61-79.264.99 and pursuant to the April 8, 1985 Memorandum of Agreement (MOA) between SRS and the South Carolina Department of Health and Environmental Control, Settlement Agreement No. 87-52-SW, as amended on October 5, 1995, and Settlement Agreement No. 91-51-SW, dated August 26, 1991, are presented in Module IVD (Groundwater Requirements) of this Permit.

IIID.A. <u>UNIT IDENTIFICATION</u>

The Permittee shall provide postclosure care for the hazardous waste management units described below, subject to the terms and conditions of this Permit.

Regulated Unit(s)	Dates Unit(s) Operated	Total Maximum Capacity	Description of Wastes Contained	Hazardous Waste Number
MWMF (Designated as Bldg. 643-28E & ELLT 1)	1972-1991	879.6 acre-feet	Scintillation fluids, waste oil material, lead shielding, F-listed solvent rags, and radioactively contaminated equipment	See Section C.1.5.2 of Volume VII of the Approved Permit Application.
Solvent rag portions of LLRWDF (Trench Areas 1-6, ELLT 2&3, solvent rag portion ELLT 4, GCD-ET and GCD boreholes	1986-2002	4,302,730 cubic feet (4,268,326 cubic feet hazardous)	Process waste, radioactively contaminated waste & soil, solvent rags, and Class B & Class C type wastes	See Section C.1.5.2 of Volume VII of the Approved Permit Application.

IIID.B. POSTCLOSURE PROCEDURES AND USE OF PROPERTY

IIID.B.1 PostClosure Care Period

The Permittee shall conduct postclosure care for the hazardous waste management unit(s) described in Permit Condition IIID.A - Unit Identification. Postclosure care will be conducted for thirty (30) years after the completion of closure, except that the thirty (30) year postclosure care period may be shortened upon application and demonstration, approved by the Department, that the facility is secure, or may be extended if the Department finds this is necessary to protect human health and the environment. The original postclosure care period for the initial MWMF trenches began on April 26, 1991 and ended April 26, 2021. Due to the extensive groundwater plume associated with the MWMF, the postclosure care period is extended for an additional thirty years through April 26, 2051. The initial postclosure care period for the Solvent Rag Portions of LLRWDF began on October 7, 2002 and was set to end October 7, 2032. For consistency across the units, the postclosure care period for the Solvent Rag

Portions of LLRWDF is extended to April 26, 2051 as well. Postclosure care shall be in accordance with R.61-79.264.117 - 120, this Permit, and the PostClosure Plan contained in Volume VII, Section I.2 of the Approved Permit Application.

IIID.B.2 **Groundwater Monitoring System**

The Permittee shall maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of R.61-79.264 Subpart F and Module IV (PostClosure Care Groundwater Requirements) of this Permit during the postclosure period. [R.61-79.264.117(a)(1)]

IIID.B.3 **Landfill Requirements**

The Permittee shall comply with the requirements for landfills as follows: [R.61-79.264.310(b)]:

IIID.B.3(a) Maintain the integrity and effectiveness of the final cover; including making repairs to the liner system, as necessary, to correct the effects of settling, subsidence, erosion, or other events;

IIID.B.3(b) Prevent run-on and run-off from eroding or otherwise damaging the final cover;

IIID.B.3(c) Protect and maintain surveyed benchmarks used in complying with the surveying and record keeping requirements of R.61-79.264.309.

IIID.C. INSPECTIONS

IIID.C.1 **Components, Structures and Equipment**

The Permittee shall inspect the components, structures, and equipment at the site in accordance with R.61-79.264.117(a)(1)(ii) and the inspection schedule in Volume VII, Section I.2.1, Appendix 2 of the Approved Permit Application.

IIID.C.2 **Cover System**

The Permittee shall inspect the cover system(s) for uniformity, drainage, and imperfections. Soil based covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the cover.

IIID.D. NOTICES AND CERTIFICATION

IIID.D.1 Use of units

The Permittee shall not allow any use of the units designated in Permit Condition IIID.A (Unit Identification) which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the postclosure care period. [R.61-79.264.117(c)]

IIID.D.2 Amendments to PostClosure Plan

The Permittee must request a permit modification to authorize a change in the approved postclosure plan. This request must be in accordance with applicable requirements of R.61-79.124 and R.61-79.270 and must include a copy of the proposed amendments to the Approved Permit Application for approval by the Department. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the postclosure plan, or other events occur during the active life of the facility that also affect the postclosure plan. The Permittee must submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the postclosure plan. [R.61-79.264.118(d)]

IIID.D.3 Removal Request

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any; or contaminated soils, then he shall request a permit modification in accordance with the applicable requirements in R.61-79.124 and R.61-79.270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of R.61-79.264.117(c). [R.61-79.264.119(c)]

IIID.D.4 Certification of Completion of PostClosure Care

No later than sixty (60) days after completion of the established postclosure care period for each hazardous waste disposal unit, the Permittee shall submit to the Department, by registered mail, a certification that the postclosure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved PostClosure Plan. The certification must be signed by the Permittee and a qualified professional engineer. Documentation supporting the qualified professional engineer's certification must be furnished

to the Department upon request until the Department releases the Permittee from the financial assurance requirements for postclosure care under R.61-79.264.145(i). [R.61-79.264.120]

III.F.

Module III - POSTCLOSURE CARE

SECTION F
Sanitary Landfill

The Sanitary Landfill Hazardous Waste Management Facility consists of two areas; the 32.6 acre Main Section which received waste from 1974 to 1987; and the 22.2 acre Southern Expansion, which received wastes from 1987 to 1994. Both areas of the Sanitary Landfill received solid wastes generated from SRS office, cafeteria, and industrial activities. The Main Section and the Southern Expansion of the Sanitary Landfill were identified as hazardous waste management units (Settlement Agreement #91-51-SW) on August 26, 1991 because solvent rags may have been disposed in both areas.

The Main Section and Southern Expansion of the Sanitary Landfill were certified closed October 26, 1997 in accordance with the South Carolina Hazardous Waste Management Regulations, R.61-79.265, Subpart G. Closure activities consisted of constructing a methane/gas venting system and placing a low permeability RCRA cap and final vegetative cover over the facility. Two horizontal groundwater remediation wells (SLH-1 and SLH-2) were constructed on the southern and western sides of the landfill in February 1998 to treat trichloroethene and vinyl chloride contaminated groundwater. Biosparging activities began in August 1999 to provide nutrients and energy sources to indigenous microbes that degrade chlorinated solvents. The horizontal injection wells suspended operations in 2005. After three (3) consecutive years in which the ACL/MZCLs were not exceeded, the above ground components of the remediation system were removed and the horizontal wells were abandoned in place.

The conditions of this module apply to the general postclosure care requirements for the hazardous waste management units as described below in Permit Condition IIIF.B. - PostClosure Procedures and Use of Property. The conditions for Corrective Action as required by R.61-79.264.100; Detection Monitoring as required by R.61-79.264.98; Compliance Monitoring as required by R.61-79.264.99 are presented in Module IVF (Groundwater Requirements) of this Permit.

IIIF.A. UNIT IDENTIFICATION

The Permittee shall provide postclosure care for the hazardous waste management units described below, subject to the terms and conditions of this Permit.

Regulated Unit(s)	Dates Unit(s) Operated	Total Maximum Capacity	Description of Wastes Contained	Hazardous Waste Number
Sanitary Landfill – Main Section	1974-1987	32 acres	commercial solid waste, paper products, wood products, and solvent rags generated from maintenance operations, degreasing of equipment, and from wipe sampling of protective clothing.	See Section C.1.5.2 of Volume XXIII of the Approved Permit Application.
Sanitary Landfill – Southern Expansion	1987-1994	22.2 acres	commercial solid waste, paper products, wood products, and solvent rags generated from maintenance operations, degreasing of equipment, and from wipe sampling of protective clothing.	See Section C.1.5.2 of Volume XXIII of the Approved Permit Application.

IIIF.B. POSTCLOSURE PROCEDURES AND USE OF PROPERTY

IIIF.B.1 PostClosure Care Period

The Permittee shall conduct postclosure care for the hazardous waste management unit(s) described in Permit Condition IIIF.A - Unit Identification. Postclosure care will be conducted for thirty (30) years after the completion of closure, except that the thirty (30) year postclosure care period may be shortened upon application and demonstration, approved by the Department, that the facility is secure, or may be extended if the Department finds this is necessary to protect human health and the environment. The initial postclosure care period began on October 26, 1997 and was set to end October 26, 2027. Due to the existing groundwater plume associated with the Sanitary Landfill, the postclosure care period for the Sanitary Landfill is extended for an additional thirty years through October 26, 2057. Postclosure care shall be in accordance with R.61-79.264.117 - 120, this Permit, and the PostClosure Plan contained in Volume XXIII of the Approved Permit Application.

IIIF.B.2 **Groundwater Monitoring System**

The Permittee shall maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of R.61-79.264 Subpart F and Module IV (PostClosure Care Groundwater Requirements) of this Permit during the postclosure period. [R.61-79.264.117(a)(1)]

IIIF.B.3 **Landfill Requirements**

The Permittee shall comply with the requirements for landfills as follows: [R.61-79.264.310(b)]:

IIIF.B.3(a) Maintain the integrity and effectiveness of the final cover; including making repairs to the liner system, as necessary, to correct the effects of settling, subsidence, erosion, or other events;

IIIF.B.3(b) Prevent run-on and run-off from eroding or otherwise damaging the final cover;

IIIF.B.3(c) Protect and maintain surveyed benchmarks used in complying with the surveying and record keeping requirements of R.61-79.264.309.

IIIF.C. INSPECTIONS

IIIF.C.1 **Components, Structures and Equipment**

The Permittee shall inspect the components, structures, and equipment at the site in accordance with R.61-79.264.117(a)(1)(ii) and the inspection schedule in Volume XXIII, Section I, Attachment I-1 of the Approved Permit Application

IIIF.C.2 **Cover System**

The Permittee shall inspect the cover system(s) for uniformity, drainage, and imperfections. Soil based covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the cover.

IIIF.D. NOTICES AND CERTIFICATION

IIIF.D.1 **Use of units**

The Permittee shall not allow any use of the units designated in Permit Condition IIIF.A (Unit Identification) which will disturb the integrity of the final cover, liners,

any components of the containment system, or the function of the facility's monitoring systems during the postclosure care period. [R.61-79.264.117(c)]

IIIF.D.2 **Amendments to PostClosure Plan**

The Permittee must request a permit modification to authorize a change in the approved postclosure plan. This request must be in accordance with applicable requirements of R.61-79.124 and R.61-79.270 and must include a copy of the proposed amendments to the Approved Permit Application for approval by the Department. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the postclosure plan, or other events occur during the active life of the facility that also affect the postclosure plan. The Permittee must submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the postclosure plan. [R.61-79.264.118(d)]

IIIF.D.3 **Removal Request**

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any; or contaminated soils, then he shall request a permit modification in accordance with the applicable requirements in R.61-79.124 and R.61-79.270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of R.61-79.264.117(c). [R.61-79.264.119(c)]

IIIF.D.4 **Certification of Completion of PostClosure Care**

No later than sixty (60) days after completion of the established postclosure care period for each hazardous waste disposal unit, the Permittee shall submit to the Department, by registered mail, a certification that the postclosure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved PostClosure Plan. The certification must be signed by the Permittee and a qualified professional engineer. Documentation supporting the qualified professional engineer's certification must be furnished to the Department upon request until the Department releases the Permittee from the financial assurance requirements for postclosure care under R.61-79.264.145(i). [R.61-79.264.120]

III.G.

MODULE III POSTCLOSURE CARE
SECTION G
Solvent Storage Tanks

The Solvent Storage Tanks (SST) S33-S36 Facility is located in the H-Area of SRS and consists of four underground double-walled, carbon steel storage tanks (cylindrical-horizontal with dished ends) and ancillary equipment including a transfer line (flushed and blanked), its associated pumps, and a 300-gallon carbon steel decanter tank. All ancillary equipment was aboveground. The tanks were equipped with liquid level gauges, high liquid level alarms, leak detectors, pressure gauges, and a cathodic protection system. Temporary transfer lines were used to transfer waste from trucks to the tanks are on-ground in the diked area. The secondary containment system consisted of the annular space between the walls of the double-walled tanks. The annular space was equipped with leak detection equipment that could trigger alarms if liquids were detected. Each tank had a capacity of 30,000 gallons with an operating capacity of 27,600 gallons.

The tank system was installed in 1995 and became operational in 1996. The facility was designed to store mixed waste solvent and non-hazardous radioactive waste solvent until environmentally acceptable treatment and disposal methods were available. Mixed waste is a subcategory of hazardous waste and contains both a hazardous component, as defined by the Resource Conservation and Recovery Act (RCRA), and a radioactive component. A complete description of the SST S33 – S36 Facility can be found in Volume XXV of the approved 2013 RCRA Permit Renewal Application.

The SST Facility completed closure activity in October 2019 with the submittal of the Closure Certification Report. The closure consisted of sampling, removing the above ground equipment, removing the decant tank, filling the tanks and loading area with grout and placing a cover over the tank area. Soil sampling around the tanks did not allow for clean closure, but constituents were below industrial worker or within background soil limits except for thorium-232 decay series. Thorium-232 had a maximum result of 2.97 pCi/g which is slightly higher than the site background of 2.79 pCi/g. Stabilization and cover of the tank area will mitigate exposure concerns. At this time, a groundwater monitoring system will not be required.

MODULE III POSTCLOSURE CARE

IIIG.A. MODULE HIGHLIGHTS

The conditions of this module apply to the general postclosure care requirements for four closed underground, double-walled storage tanks and the associated cover as identified and described below in condition IIIG.B This module presents permit conditions which address the regulatory requirements for postclosure care.

IIIG.B. FACILITY AND UNIT IDENTIFICATION

The Permittee shall provide postclosure care for the hazardous waste management units subject to the terms and conditions of this permit, and described as follows:

Name of Unit	Type of Unit	Dates of Operation	Maximum Capacity	Description of Wastes Contained
SST S-33	Underground Storage Tank	1996-2019	30,000 gallons (27,600 gallons)	Mixed waste solvent D004-D011 D018-D043 7777
SST S-34	Underground Storage Tank	1996-2019	30,000 gallons (27,600 gallons)	Mixed waste solvent D004-D011 D018-D043 7777
SST S-35	Underground Storage Tank	1996-2019	30,000 gallons (27,600 gallons)	Mixed waste solvent D004-D011 D018-D043 7777
SST S-36	Underground Storage Tank	1996-2019	30,000 gallons (27,600 gallons)	Mixed waste solvent D004-D011 D018-D043 7777

IIIG.C. POSTCLOSURE PROCEDURES AND USE OF PROPERTY

IIIG.C.1 PostClosure Care Period

The Permittee shall conduct postclosure care for the Solvent Storage Facility as described in Condition IIIG.B above. Postclosure care will be conducted for thirty (30) years after the completion of closure, except that the thirty (30) year postclosure care period may be shortened upon application and demonstration, approved by the Department, that the facility is secure, or may be extended if the Department finds this is necessary to protect human health and the environment. The initial postclosure care period for the facility began upon completion of closure on March 8, 2021 and will end March 8, 2051. Postclosure care shall be in accordance with R.61-79.264.117-120 and this Permit.

IIIG.C.2 Landfill Requirements

The Permittee shall comply with the requirements for landfills as follows: [R.61-79.264.310(b)]

IIIG.C.2(a) Maintain the integrity and effectiveness of the final cover; including making repairs to the liner system, as necessary, to correct the effects of settling, subsidence, erosion, or other events;

IIIG.C.2(b) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

IIIG.C.2(c) Protect and maintain surveyed benchmarks used in complying with the surveying and recordkeeping requirements of R.61-79.264.309(a) and (b).

IIIG.D. INSPECTIONS

IIIG.D.1 Cover System

The Permittee shall inspect the cover system semi-annually for uniformity, drainage, and imperfections. Soil based covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the cover.

IIIG.D.2 Access Controls

Semi-annually the Permittee shall inspect the fencing, gate lock and warning sign to insure that access to the area is secured.

IIIG.E. NOTICES AND CERTIFICATION

IIIG.E.1 Use of units

The Permittee shall not allow any use of the units designated in Permit Condition IIIG.B or the immediate surrounding area which will disturb the integrity of the final cover during the postclosure care period. [R.61-79.264.117(c)]

IIIG.E.2 Amendments to PostClosure Plan

The Permittee must request a permit modification to authorize a change in the approved PostClosure Plan. This request must be in accordance with applicable requirements of R.61-79 Parts 124 and 270 and must include a copy of the proposed amendments to the application for approval by the Department. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the approved PostClosure Plan, or other events occur during the activity life of the facility that also affect the approved postclosure plan. The Permittee must submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the approved PostClosure Plan. [R.61-79.264.118(d)]

IIIG.E.3 Removal Request

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes, waste residues, or the soils, then he shall request a modification to this postclosure permit in accordance with the applicable requirements in R.61-79.124 and 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of R.61-79.264.117(c). [R.61-79.264.119(c)]

IIIG.E.4 Certification of Completion of PostClosure Care

No later than sixty (60) days after completion of the established postclosure care period for each hazardous waste disposal unit, the Permittee shall submit to the Department, by registered mail, a certification that the postclosure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved PostClosure Plan. The certification must be signed by the Permittee and qualified professional engineer. Documentation supporting the qualified professional engineer's certification must be furnished to the Department upon request until the Department releases the Permittee from the

financial assurance requirements for postclosure care under R.61-79.264.145(i). [R.61-79.264.120]

IIIG.F. SPECIAL PERMIT CONDITIONS FOR POSTCLOSURE PLAN

A postclosure plan and updated inspection checklist has been submitted to the Department for review and approval. The plan incorporates the requirements and details for conditions IIIG.C, IIIG.D, IIIG.E of this Permit. At this time, a groundwater monitoring system will not be required.

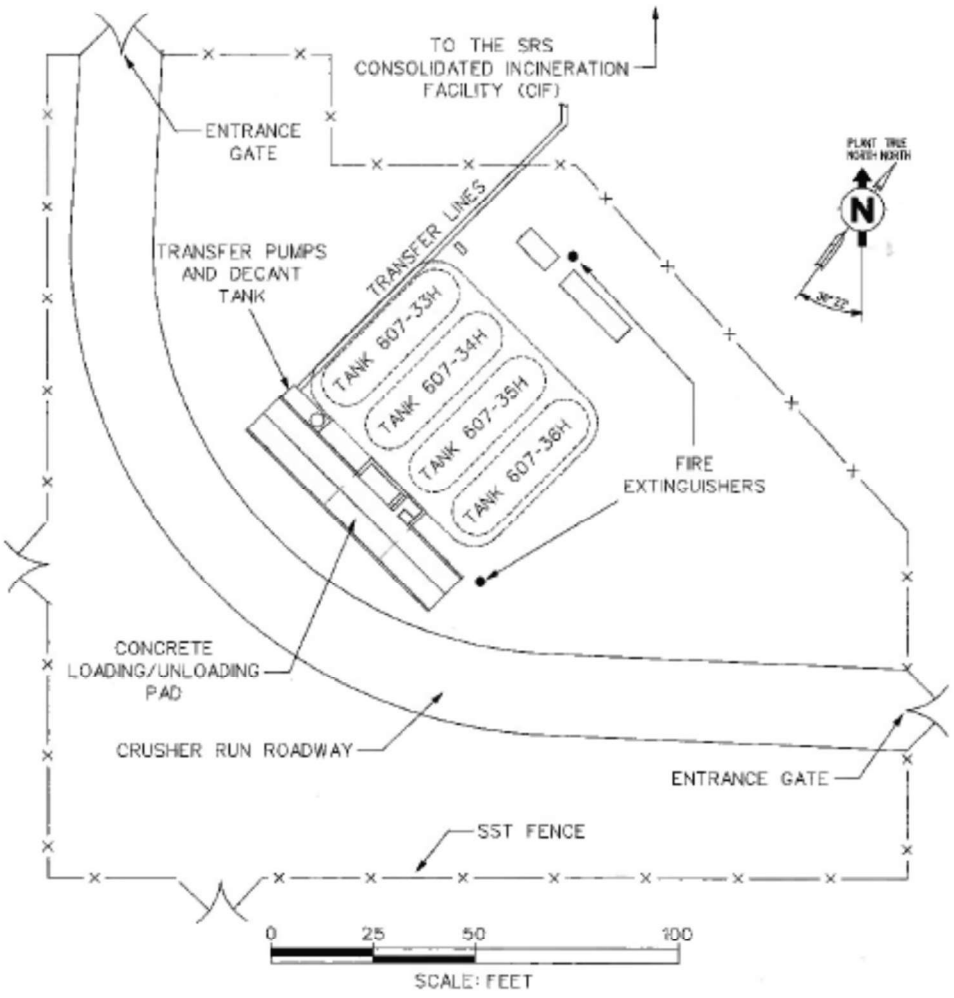


Figure IIIG*

SOLVENT STORAGE TANKS S33 – S36

* Taken from the 2013 RCRA Permit Application Volume XXV Solvent Storage Tank S33-S36 Facility

Module IV. POSTCLOSURE CARE GROUNDWATER REQUIREMENTS

IV.A.

MODULE IV POSTCLOSURE CARE GROUNDWATER REQUIREMENTS

SECTION A

M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities

M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities

IVA.A. MODULE HIGHLIGHTS

The conditions of this module apply to the postclosure groundwater requirements for the M-Area and Metallurgical Laboratory (MAML) Hazardous Waste Management Facilities (HWMFs) identified and described in condition IIIA.B. This module presents permit conditions which address the regulatory requirements for the groundwater corrective action program based on R.61-79.264.117-120, 264.310(b) and 264.100.

In general, the groundwater permit conditions describe the groundwater monitoring and corrective action programs for the M-Area and Metallurgical (Met) Lab HWMFs as defined in the approved 2013 RCRA Permit Renewal Application Vol. III, Rev. 1 dated August 2020 (the Approved Permit Application) and any subsequent revisions. The groundwater associated with the A-Area Burning/Rubble Pits and Rubble Pit/Miscellaneous Chemical Basin/Metals Burning Pit Operable Unit (ABRP/MCB/MBP OU), located just south of the M-Area, has been included as part of the corrective action. The groundwater monitoring portion of the permit describes the location, number, and depth of groundwater monitoring wells; identifies which wells are upgradient and downgradient of the MAML; establishes a list of hazardous constituents and concentration limits which must be achieved through corrective action; defines the length of the compliance period; specifies the sampling and analysis protocols for the groundwater corrective action monitoring program, the statistical evaluations to be conducted, and the procedures for modifying the permit if any changes in the corrective action or corrective action monitoring programs are necessary. The corrective action portion of the permit consists of a description of the overall strategy for groundwater and vadose zone remediation and provides for the submittal of detailed corrective action plans containing information required to implement necessary additional phases of remediation.

IVA.B. GROUNDWATER REQUIREMENTS

IVA.B.1 Groundwater Protection Standard

The Permittee shall ensure that the groundwater protection standard (GWPS), as required under R.61-79.264.92, is being met or that remedial actions are being taken to reduce contaminant levels to meet standards. The GWPS shall consist of the Hazardous Constituents and their corresponding concentration limits as

established under R.61-79.264.93 and R.61-79.264.94. See Appendix IVA-A for the M-Area and Appendix IVA-C for the Met Lab.

IVA.B.2 Point of Compliance

The point of compliance (POC) is a vertical surface located at the hydraulically downgradient limit of the Waste Management Area (WMA) that extends down to the base of the uppermost aquifer underlying the regulated unit. The WMA for the M-Area HWMF includes one closed surface impoundment, an overflow ditch, seep area, and a Carolina Bay (Lost Lake). Combined, these all comprise the M-Area RCRA hazardous waste management unit. The WMA for the Met Lab HWMF includes one closed surface impoundment, a drainage outfall at the impoundment, and an adjacent Carolina Bay. Combined, these all comprise the Met Lab RCRA hazardous waste management unit. See Figure IVA-1 for a general view of these areas.

Vertically, for each unit, the POC extends down through the M-Area Aquifer Zone (MAAZ), Upper Lost Lake Aquifer Zone (ULLAZ), Lower Lost Lake Aquifer Zone (LLLAZ), and the Middle Sand Aquifer Zone (MSAZ) within the Crouch Branch Confining Unit (CBCU). These aquifer units have been identified in Volume III, Section E.2.3.2 of the Approved Permit Application as comprising the uppermost aquifer.

IVA.B.3 Compliance Period

The Permittee shall comply with the provisions specified in R.61-79.264.96 for the duration of the compliance period which is equal to thirty-three (33) years for the M-Area. The initial compliance period for the M-Area began September 30, 1987 and ended September 30, 2020. The compliance period for the Met Lab is thirty-six (36) years from September 5, 1995 to September 5, 2031. If the Permittee is engaged in corrective action at the end of the compliance period as specified above, the compliance period will be extended until the Permittee can demonstrate that the groundwater protection standard of R.61-79.264.92 has not been exceeded for a period of three (3) consecutive years.

IVA.B.4 Groundwater Monitoring System

IVA.B.4(a) The Permittee shall install and/or maintain a groundwater monitoring system to comply with applicable portions of R.61-79.264 Subpart F and as specified below.

IVA.B.4(b) The Permittee shall maintain monitoring wells identified in Appendix IVA-B and Appendix IVA-D of this permit at the locations specified in Volume III, Tables E.5-1 and E.5-2 of the Approved Permit Application, and any additional wells installed pursuant to permit condition IVA.B.4(g).

IVA.B.4(c) Monitoring wells as specified in Section I of Appendices IVA-B and IVA-D of this permit shall monitor groundwater quality at the point of compliance (POC). These wells will constitute the POC monitoring well system. See Figure IVA-2 of this permit.

IVA.B.4(d) Monitoring wells as specified in Section II of Appendices IVA-B and IVA-D of this permit shall be used to monitor background groundwater quality.

IVA.B.4(e) Monitoring wells as specified in Section III of Appendices IVA-B and IVA-D of this permit shall be used to monitor the contaminant plume movement and to assess the effectiveness of corrective action.

IVA.B.4(f) Monitoring wells as specified in Section VI of Appendix IVA-B, as well as MSB-40B, MSB-40C, MSB-74B, MSB-74C, MSB-75B, and MSB-75C shall be used to assess the effectiveness of Southern Sector corrective action.

IVA.B.4(g) The Permittee shall install additional wells as necessary to maintain compliance with R.61-79.264 Subpart F requirements. A proposal for the design, location, and installation of any additional well(s) should be submitted to the Department at least forty-five (45) days prior to planned installation. Written approval must be obtained prior to the initiation of drilling or installation of any well.

IVA.B.4(h) The Permittee shall ensure that all wells are designed, installed, and maintained such that the water samples are representative of the true groundwater quality. Additionally, the wells shall be designed, installed, and monitored in such a manner so as to prevent interconnection between different hydrologic units. Failure of any well(s) to meet the standards herein shall not interfere with the groundwater monitoring or corrective action programs.

IVA.B.4(i) The Permittee shall properly abandon any well(s) not meeting the standard of permit condition IVA.B.4(h). A proposal including specific well abandonment procedures shall be submitted to the Department for

review and approval at least fifteen (15) days prior to beginning abandonment procedures.

IVA.B.5 Corrective Action Program

The Permittee shall implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits specified in Section I, Appendix IVA-A and Appendix IVA-C of this permit.

IVA.B.5(a) The Permittee shall conduct corrective action to remove and treat hazardous constituents as specified in the groundwater protection standard of permit condition IVA.B.1 and to prevent hazardous constituents from exceeding their respective concentration limits in groundwater. As identified in permit conditions IVA.B.5(c) through IVA.B.5(l), additional phases of corrective action sufficient in scope to address the remediation of contamination in the Northern, Central, Western, and Southern Sectors of the M-Area, the ABRP/MCB/MBP OU area as well as in the Met Lab HWMF vicinity, are necessary such that the groundwater protection standard of permit condition IVA.B.1 may be achieved.

IVA.B.5(b) The Permittee shall continue corrective measures during the compliance period specified in permit condition IVA.B.3 to the extent necessary to ensure that the groundwater protection standard of permit condition IVA.B.1 is not exceeded. If corrective action is required beyond the compliance period, corrective action must continue until the groundwater protection standard has not been exceeded for three (3) consecutive years in accordance with R.61-79.264.100(f).

IVA.B.5(c) The Permittee shall implement Phase 3 corrective action within the Northern Sector of the M-Area groundwater contaminant plume as described in Volume III, Section E.8.3.3 of the Approved Permit Application. Operation of the A-2 Air Stripper has been suspended since October 18, 2012 with continued groundwater monitoring to help evaluate the effectiveness of the A-2 Air Stripper system. Based on evaluation of the system, the Department approves the permanent shutdown of the A-2 Air Stripper. As the A-2 Air Stripper system will be permanently shutdown, Phase 3 will evaluate remediation of the highest concentration portions of the contaminant plume; evaluate contamination within the CBAU, McQueen Branch Aquifer Unit (MQBAU) and LLAZ and propose

remediation technology to capture and remediate the Northern Sector plume to achieve the groundwater protection standard of permit condition IVA.B.1. The schedule for implementation of the corrective action plan is included as Appendix IVA-F of this permit.

IVA.B.5(d) The Permittee shall continue to maintain and operate production wells 905-20A and 905-53A to capture a portion of the groundwater contaminant plume within the Crouch Branch Aquifer downgradient of the highest concentration source area (SRNL Complex). The effectiveness of the wells will be evaluated with the corrective action for the Northern Sector.

IVA.B.5(e) The Permittee has implemented a corrective action program for contaminated soils within the Vadose Zone of the Central Sector beneath the A-014 Outfall, 321-M Solvent Storage Area, M-Area Abandoned Process Sewer Line (MAPSL), the M-Area HWMF and vadose zone east of the MASB as described in Volume III, Section E.8.3.3 of the Approved Permit Application. This program currently uses active and passive vapor extraction to treat contaminated soil as necessary. In the event that the current remediation is no longer effective, the need for additional remediation will be evaluated. The schedule for implementation of the corrective action plan is included as Appendix IVA-F of this permit.

IVA.B.5(f) The Permittee shall continue to evaluate the performance of the existing groundwater corrective action system located in the Central Sector of the M-Area contaminant plume. Modifications to the system may be necessary if portions of the contaminant plume are found to be beyond the remedial influence of the current recovery system.

IVA.B.5(g) The Permittee shall also implement a Phase 2 of corrective action for the remediation of contaminated groundwater within the Western Sector of the M-Area contaminant plume which is beyond the zone of capture of existing groundwater M-1 Air Stripper recovery systems (as described in Section E.8.3.3 of the Approved Permit Application). Phase 2 will identify and evaluate remedial technologies to address the area of high concentration groundwater near the M-Area Settling Basin (MASB). The Permittee shall evaluate the performance of the overall corrective action system and implement any modifications to the system deemed necessary following the evaluation to achieve the groundwater protection standard of permit condition IVA.B.1.

IVA.B.5(h) The Permittee shall include the most recent (at the time of plan preparation) hydrogeologic characterization and contaminant plume distribution data in the Phase 2 corrective action plan for the Western Sector. The schedule for implementation of the corrective action plan is included as Appendix IVA-F of this permit.

IVA.B.5(i) The Permittee shall implement a Phase 3 corrective action plan for the Southern Sector of the M Area groundwater contaminant plume to capture and remediate the southern sector source plume (located between the A-014 Outfall and the former line of airlift recirculation wells) and the distal plume (located between the former line of airlift recirculation wells and Tims Branch). The Permittee shall implement additional phases of corrective action as necessary to capture and/or remediate the remainder of the Southern Sector plume above concentrations identified in the groundwater protection standard of permit condition IVA.B.1.

IVA.B.5(j) The Permittee shall evaluate the use of amendments to the Lost Lake Aquifer in the Southern Sector as described in Section E.8.3.3 of the Approved Permit Application. A small tank system which uses contaminated groundwater, will be used in this deployment and it shall meet the applicable requirements of the R.61-79.264 Subpart J and R.61-79.270.16. The Permittee shall evaluate the performance of the overall corrective action system and implement any modifications to the system deemed necessary following the evaluation. The schedule for implementation of the corrective action plan is included as Appendix IVA-F of this permit.

IVA.B.5(k) The Permittee shall continue characterization and investigate remedial alternatives for the groundwater plume associated with the ABRP/MCB/MBP units as described in Volume III Section E.8.3.3 of the Approved Permit Application. A Corrective Measures Study and CAP schedule is included as Appendix IVA-F of this permit.

IVA.B.5(l) The Permittee implemented corrective action in the vicinity of the Metallurgical Laboratory HWMF as described in Volume III, Section E.8.3.3 of the Approved Permit Application. Trichloroethylene (TCE) is above the groundwater protection standard and there have been lead exceedances. Soil vapor extraction and monitoring will continue as described in Section

E.8.3.3 although some modification may be appropriate to achieve the groundwater protection standard for the Met Lab HWMF. The schedule for corrective action is included in Appendix IVA-F of this permit.

IVA.B.6 Sampling and Analysis Procedures

The Permittee shall use the following techniques and procedures when obtaining samples and analyzing samples from the groundwater monitoring wells described in condition IVA.B.4(b) to provide a reliable indication of the quality of the groundwater as required under R.61-79.264.97(d) and (e).

IVA.B.6(a) Samples shall be collected, preserved, and shipped in accordance with the procedures specified in Volume I, Section E of the Approved Permit Application. Metals analyses shall be for total metals.

IVA.B.6(b) The Permittee shall ensure the frequency of sample collection and the wells to be sampled are in accordance with the Groundwater Monitoring Schedule, Appendix IVA-E of this permit.

IVA.B.6(c) Samples shall be analyzed according to the procedures specified in Volume I, Section E of the Approved Permit Application or in the most current final version of SW-846: Test Methods for Evaluating Solid Waste - Physical/Chemical Methods, using whichever procedure is more recent at the time of analysis. For those constituents which have established maximum contaminant levels (MCLs), the analytical method chosen must be capable of achieving a practical quantitation limit (PQL) below the established MCL for that constituent. For those constituents which do not have an established MCL, the analytical method must achieve the lowest reasonably achievable PQL based on instrumentation and the analytical method.

IVA.B.6(d) Samples shall be tracked and controlled using the chain of custody procedures specified in Volume I, Section E of the Approved Permit Application.

IVA.B.6(e) Whenever the Permittee changes sampling or analytical contractors, the Permittee shall submit to the Department within thirty (30) days of such a change a copy of the new sampling program or laboratory quality assurance/quality control (QA/QC) Program. The Department will evaluate the new program and determine if it differs significantly from the program

in the Approved Permit Application. If the program differs significantly, the Department will notify the Permittee and require the Permittee to submit an application for permit modification pursuant to R.61-79.270.41.

IVA.B.7 **Groundwater Elevation**

Semi-annually, the Permittee shall measure and record the groundwater elevation in all wells identified in condition IVA.B.4(b). These data shall be collected within a sixty (60) day time span. The Permittee will report the water level data as specified in permit condition IVA.B.11. As part of the annual report, the Permittee shall use the water level data to evaluate the direction and rate of groundwater flow, and determine whether the requirements for locating monitoring wells continue to be satisfied. If the Permittee determines that the conditions are no longer satisfied, the Permittee must submit a proposal within thirty (30) days to modify the monitoring system. If the modification is significant, the Permittee will be required to submit an application for a permit modification.

IVA.B.8 **Background Groundwater Quality**

The Permittee shall utilize background groundwater quality data in accordance with R.61-79.264.97 by collecting and analyzing groundwater samples from monitoring wells identified in Section II of Appendix IVA-B and Appendix IVA-D of this permit in accordance with the Groundwater Monitoring Schedule, Appendix IVA-E of this permit.

IVA.B.9 **Statistics**

The Permittee shall utilize the statistical procedures outlined in Volume III, Section E.5.4 of the Approved Permit Application in order to evaluate the effectiveness of the corrective action program. If the statistical analyses indicate that the existing program no longer satisfies the requirements of R.61-79.264.100, the Permittee shall notify the Department within fifteen (15) days and make the appropriate application for permit modification within ninety (90) days.

IVA.B.10 **Corrective Action Monitoring Program and Data Evaluation**

IVA.B.10(a) The Permittee shall establish, implement, and maintain a groundwater monitoring program capable of demonstrating the effectiveness of the corrective action program and determining compliance with the groundwater protection standard. Groundwater monitoring and corrective action shall be conducted in accordance with the requirements

of R.61-79.264.97, R.61-79.264.100, and as specified by the conditions of this permit.

IVA.B.10(b) The Permittee shall monitor groundwater quality for the list of parameters specified in Appendices IVA-A and IVA-C of this permit following the sampling and analysis plan required by permit condition IVA.B.6 throughout the compliance period and any extension due to corrective action implementation to demonstrate conformance with the groundwater protection standard. Groundwater samples must be collected in accordance with the Groundwater Monitoring Schedule, Appendix IVA-E of this permit. The Permittee must evaluate water quality data using the statistical procedures specified in permit condition IVA.B.9.

IVA.B.10(c) Annually, the Permittee shall collect samples from a minimum of twenty (20) percent of the point of compliance wells for the M-Area HWMF and sixty (60) percent of Met Lab point of compliance wells (as specified in Condition IVA.B.2 of this permit) to be analyzed for select constituents from Appendix IX of R.61-79.264 of the South Carolina Hazardous Waste Management Regulations. At least forty-five (45) days prior to sampling, the Permittee shall submit rationale and a specific proposal to the Department for review and approval detailing which point of compliance wells and which constituents from Appendix IX are to be sampled. Point of compliance wells from each monitored aquifer unit must be represented. If constituents from Appendix IX are found that were not identified as hazardous constituents in Section I of Appendices IVA-A and IVA-C of this permit (GWPS), the Permittee will have the right to resample to confirm the detection. If the Permittee chooses not to resample, the original detection will be considered to be a valid detection. If the detection is confirmed by resampling, or the Permittee chooses not to resample, the Permittee must report the concentrations of these constituents to the Department in writing within seven (7) days and immediately begin sampling and analysis for the new constituent(s) in the groundwater monitoring program. Within ninety (90) days of receiving the confirmatory analytical results, the Permittee shall submit an application for a permit modification to incorporate the new constituent(s) into the groundwater protection standard of permit condition IVA.B.1.

IVA.B.10(d) Each quarter the Permittee shall utilize data collected during the quarter to evaluate the effectiveness of the corrective action program. This evaluation shall include a review of available data concerning water

quality, water-level elevation, pumping rates, volumes pumped, recharge, and other significant hydrogeologic information. This information must be reported to the Department annually as required by permit condition IVA.B.11(b).

IVA.B.10(e) The Permittee shall treat, store, and/or dispose of all contaminated groundwater in accordance with applicable federal, state, and local laws.

IVA.B.10(f) As described in Volume III, Section E.8.3.3.3 of the Approved Permit Application, the Permittee shall continue to investigate the Crouch Branch aquifer and the underlying McQueen Branch confining unit. The objective is to more completely understand the source(s) of the contaminant plume, and to characterize the hydrogeologic system within this aquifer unit.

IVA.B.11 **Recordkeeping and Reporting**

IVA.B.11(a) The Permittee shall enter all monitoring, testing, analytical, and corrective action data obtained pursuant to items IVA.B through IVA.B.13(b) of this permit into the operating record as required by R.61-79.264.73(b)(6). Groundwater analytical and elevation data shall also be entered into an electronic database file to be submitted to the Department on diskette. This data, in electronic format, shall accompany reports on the effectiveness of the corrective action program which are identified in conditions IVA.B.11(b) of this permit.

IVA.B.11(b) Reports on the effectiveness of the corrective action program shall be submitted on an annual basis. On or before March 31 of each year, the Permittee shall submit a detailed report describing the effectiveness of the corrective action program for the period from January 1 through December 31 of the previous year. A summary of the effectiveness of the corrective action program during the entire year will be provided in this report. This report shall include, at a minimum, the following information:

IVA.B.11(b)(i) Detailed narrative, to be organized by sector (Central, Northern, Southern, Western and ABRP/MCB/MBP), explaining, interpreting, and discussing the effectiveness of the existing groundwater and vadose zone corrective action systems. This narrative should include a discussion of all statistical and time trend analyses for water quality and elevation data collected over the previous year, as well as a delineation of the zone of capture and drawdown for each sector's corrective action system. All portions of the

groundwater contaminant plume located outside the zone of capture of each recovery system must be identified. The path forward for achieving capture of all portions of the groundwater plume which exceed the GWPS of permit condition IVA.B.1 must be provided. Also to be included in this discussion is the status of all groundwater quality assessment activities in each sector of the M-Area, to include a detailed description of the path forward for completing assessment activities such that the entire horizontal and vertical extent of contamination is defined;

IVA.B.11(b)(ii) Current water elevation and water quality data in table form for all constituents detected;

IVA.B.11(b)(iii) Hydrographs for each well identified in Appendices IVA-B and IVA-D of this permit depicting groundwater elevations through time (data from clustered wells should be shown on a single graph);

IVA.B.11(b)(iv) Time vs. concentration plots for each point of compliance and plume definition well identified in Appendices IVA-B and IVA-D of this permit depicting trichloroethene and tetrachloroethene (data from clustered wells should be shown on a single plot);

IVA.B.11(b)(v) Isoconcentration maps depicting trichloroethene and tetrachloroethene for each hydrologic unit and isoconcentration cross-sections depicting trichloroethene and tetrachloroethene for all hydrologic units. Except for wells abandoned for greater than one year, maps for each hydrologic unit shall include the location of all POC, plume definition, and background wells identified in Appendices IVA-B and IVA-D of this permit which are screened within the hydrologic unit depicted. The location of recovery wells and production wells are to be included on all isoconcentration maps;

IVA.B.11(b)(vi) Potentiometric maps depicting groundwater flow direction for each hydrologic unit for the two most recent quarters, and potentiometric cross-sections depicting all hydrologic units for the most recent quarterly data. Except for wells abandoned for greater than one year, maps for each hydrologic unit shall include the location of all POC, plume definition, and background wells

identified in Appendices IVA-B and IVA-D of this permit which are screened within the hydrologic unit depicted. The location of recovery wells and production wells are to be included on all potentiometric maps;

IVA.B.11(b)(vii) Determination of groundwater flow rate and direction within each hydrologic unit semiannually. Evaluation of any changes;

IVA.B.11(b)(viii) Determination of the extent and severity of groundwater contamination. This may be delineated on the large scale isoconcentration maps and cross-sections;

IVA.B.11(b)(ix) Evaluation of water quality and elevation data for significant changes; This evaluation should be conducted on the point of compliance well system and a representative number of plume definition wells.

IVA.B.11(b)(x) Evaluation and discussion of all water quality data and water elevation data, zone of capture, drawdown, other trends, and significant changes noted during the previous four quarters;

IVA.B.11(b)(xi) Quarterly and cumulative volume of water pumped and average monthly flow rate per recovery well;

IVA.B.11(b)(xii) Quarterly and cumulative volume of water pumped and average monthly flow rate per recovery well;

IVA.B.11(b)(xiii) Average quarterly and cumulative VOC groundwater influent and effluent concentrations for the air stripper;

IVA.B.11(b)(xiv) Average quarterly and cumulative quantities of chlorinated solvents removed from recovered groundwater by the air stripper;

IVA.B.11(b)(xv) Average quarterly and cumulative VOC concentration and vapor flow rate per vadose zone vacuum extraction well;

IVA.B.11(b)(xvi) Average quarterly and cumulative quantities of chlorinated solvents removed from recovered vapor for each vadose zone vacuum extraction well;

IVA.B.11(b)(xvii) Recharge data (inches of rainfall during the reporting period and cumulative for the year);

IVA.B.11(b)(xviii) Operating time, downtime, reason(s) for downtime, and actions taken to correct problem(s) for each groundwater recovery and vacuum extraction system;

IVA.B.11(b)(xix) Discussion of proposed and/or implemented modifications to the groundwater monitoring, groundwater recovery, and vacuum extraction systems.

IVA.B.12 Recordkeeping and Reporting

The Permittee shall assure that the groundwater monitoring and corrective action programs are in compliance with the requirements of R.61-79.264 Subpart F throughout the postclosure period.

IVA.B.13 Permit Modification

IVA.B.13(a) If the Permittee at any time determines that the corrective action program no longer satisfies the requirements of R.61-79.264.100, R.61-79.264.101 and permit condition IVA.B.10 for releases of hazardous or non-hazardous constituents listed in Appendices IVA-A and IVA-C (GWPS) that originate from the regulated unit or the solid waste management units, the Permittee must within 90 days submit an application for a permit modification to make any appropriate changes in the program, as required under R.61-79.264.100(h).

IVA.B.13(b) If the Permittee meets or exceeds the requirements of R.61-79.264.100 and R.61-79.264.101 and meets the groundwater protection standards, the Permittee may submit an application for a permit modification pursuant to R.61-79.270.41 to terminate the corrective action program and establish a compliance groundwater monitoring program.

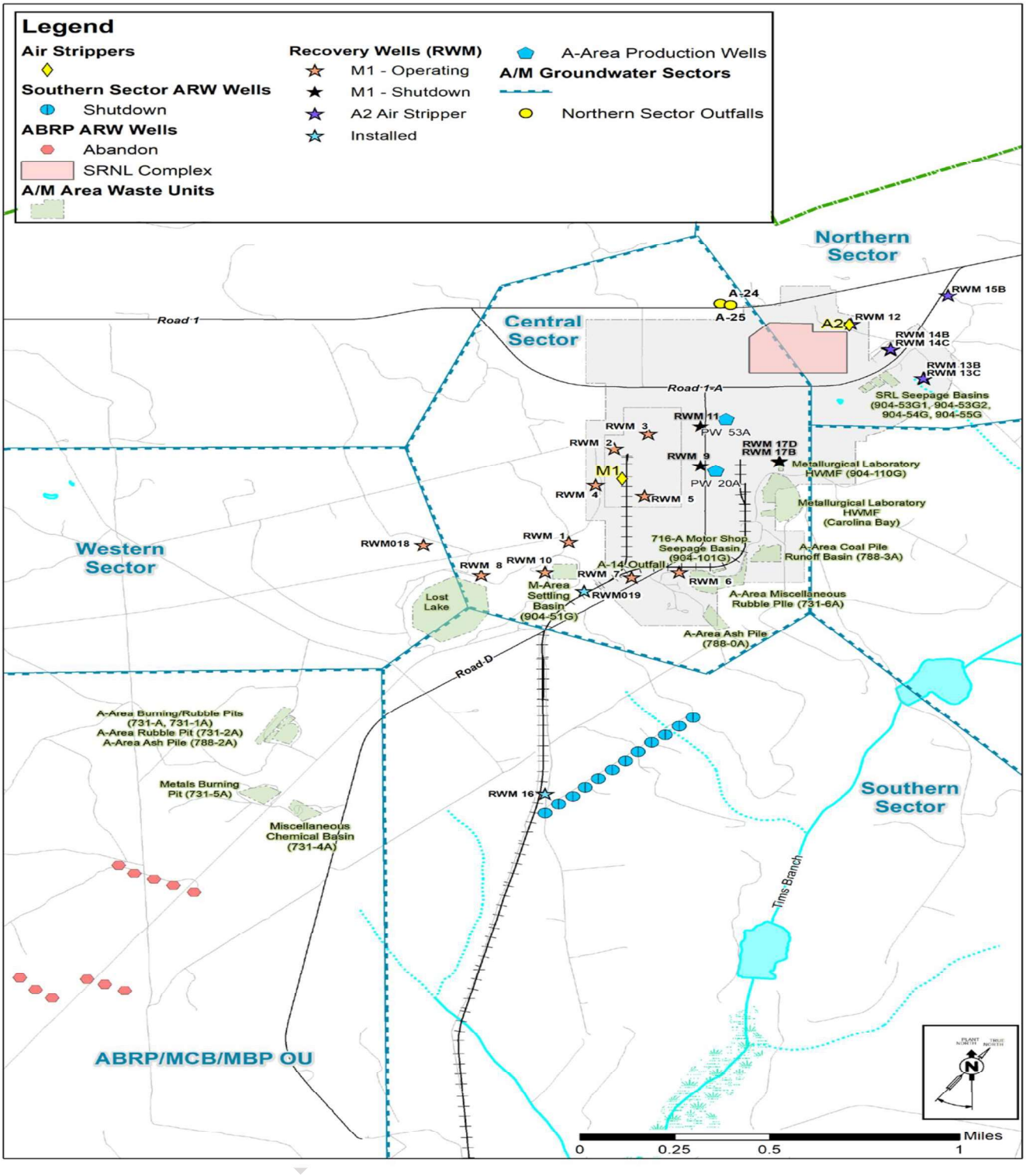


Figure IVA-1 M-Area and Metallurgical Laboratory HWMFs

From 2013 Permit Renewal Application Vol. III MAML HWMFs PostClosure

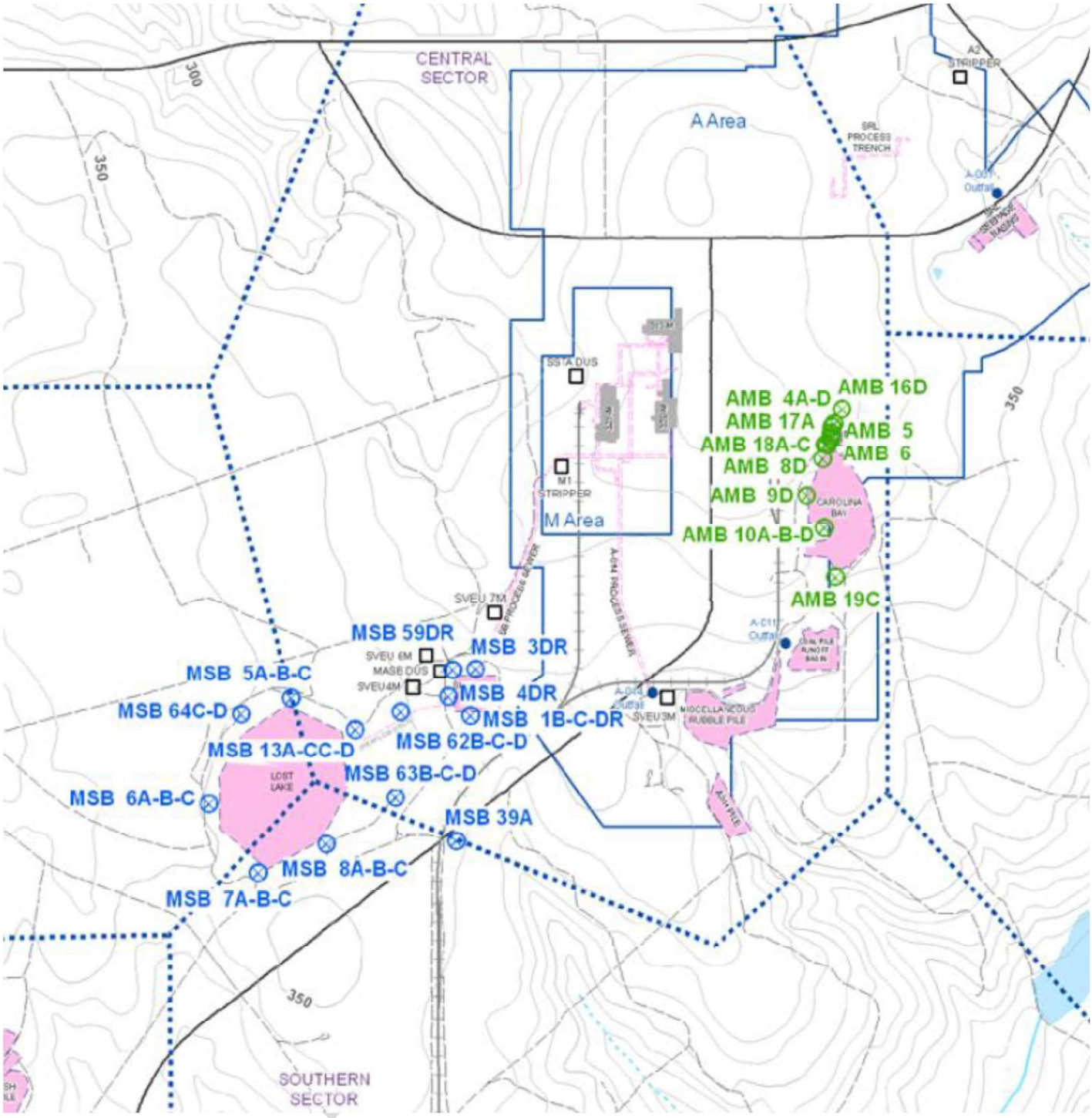


Figure IVA-2 POC Wells for the M-Area and Met Lab Basin

From 2012 M-Area and Met Lab HWMFs Groundwater Monitoring and Corrective Action Report

APPENDIX IVA-A

SAVANNAH RIVER SITE M-AREA HWMF

GROUNDWATER PROTECTION STANDARD/MONITORING CONSTITUENTS

I. Groundwater Protection Standard 261 Appendix VIII / 264 Appendix IX Constituents		
Constituent	**Concentration Limit**	
Inorganics		
Barium[c]	2.0	mg/L[a]
Lead[c]	0.015	mg/L[a]
Mercury[o]	0.002	mg/L[a]
Nickel[d]	0.39	mg/L[b]
Organics		
Chlorobenzene	0.1	mg/L[a]
cis-1,2-Dichlorothene	0.07	mg/L[a]
1,1-Dichloroethene[k]	0.007	mg/L[a]
1,4-Dioxane[j]	6.1	ug/L
Polychlorinated Biphenols	0.0005	mg/L[a]
1,1,1,2-Tetrachloroethane	0.57	ug/L[b]
1,1,2,2-Tetrachloroethane	0.076	ug/L[b]
Tetrachloroethene	0.005	mg/L[a]
Trans-1,2-Dichloroethene	0.1	mg/L[a]
1,1,1-Trichloroethane	0.2	mg/L[a]
1,1,2-Trichloroethane	5	mg/L[a]
Trichloroethene	0.005	mg/L[a]
[a] MCL - Maximum Contaminant Level as established pursuant to U.S. EPA National Primary Drinking Water Regulations (updated 2018)		
[b] Concentration based on May 2021 EPA Regional Screening Level (RSL) for tap water; Nickel as soluble salt		
[c] Barium and Lead analyses of groundwater from plume definition wells located along the sewer line and point of compliance wells		
[d] Nickel analyses of groundwater from plume definition wells located along the sewer line and screened within the water table and water table point of compliance (POC) wells		
[j] 1,4-Dioxane analyses of groundwater at POC wells and plume definition wells per Table E.7-3, Table E.7-5, and Table E.7-7 as described in Section E.7.3 of the Approved Permit Application. Original RSL tap water value retained.		
[k] 1,1-dichloroethene analyses of groundwater for all POC wells		
[o] Mercury analysis in wells MSB 1B, MSB002BR, MSB004BR, MSB 7B, MSB 8B, MSB009AR, MSB 10A, MSB 13A, MSB -14A, MSB 23R, MSB 62B, MSB 63B and RWM 10.		

APPENDIX IVA-A (continued)

II. Monitoring Constituents	
Category	**Constituents**
Inorganics	Aluminum[e], Beryllium[m], Cadmium[l], Chloride[f], Chromium[f], Cobalt[f], Copper[f], Manganese[f], Nitrate/Nitrite-as Nitrogen[g], Sodium[e], Sulfate[h], Vanadium[n] ,Zinc[f]
Organics	Acetone, Benzene, Chloroform, 1,2 –Dichlorobenzene, Lindane[p], Toluene
Radionuclides[i]	Gross-Alpha, Gross-Beta, Total Radium
Field Parameters	pH, Specific Conductance, Temperature

e	Aluminum and Sodium analyses of groundwater from all point of compliance and plume definition wells
f	Chloride, Chromium, Cobalt, Copper, Manganese and Zinc analyses of groundwater from background wells
g	Nitrate/Nitrite-as nitrogen analyses of groundwater from all POC wells, plume definition wells within western sector, and southern sector wells west of Road D
h	Sulfate analyses of groundwater from plume definition wells around SRL Seepage Basins and from plume definition wells in northern sector
i	Radionuclide analyses at all POC wells and plume definition wells located at the MSB-17, MSB 18, and MSB-39 well clusters
l	Cadmium analysis in wells MSB-29A, -39A, -39B, -39C, -40A, and -49B
m	Beryllium analysis in wells MSB-6C, -7C, -8C, -18A and 63C
n	Vanadium analysis in wells MSB-13D, - 60D, -62D, - 63D and 64DR
p	Lindane analysis at all POC wells

APPENDIX IVA-B

SAVANNAH RIVER SITE M-AREA HWMF

GROUNDWATER MONITORING NETWORK

I. Point of Compliance Wells	
Aquifer Zone	**Well Number**
M-Area	MSB-1DR[d], MSB-2DR[d], MSB-3DRR[1,d], MSB-4DR[d], MSB-5A[d], MSB-6A[d], MSB-7A[d], MSB-8Ad, MSB-13D[d,n], MSB-59DRR[1,d], MSB-62D[d,n], MSB-63D[d,n], MSB-64DR[d,n]
Upper Lost Lake	MSB-1C, MSB-2CR, MSB-3CR[1], MSB-4CR, MSB-5C[j], MSB-6C[j,m], MSB-7C[j,m], MSB-8C[j,m], MSB-13CC[j], MSB-62C, MSB-63C[m], MSB-64C[j]
Lower Lost Lake	MSB-1B[o], MSB-2BR[j,o] , MSB-3BR[j], MSB-4BR[j,o], MSB-5B[j], MSB-6B[j], MSB-7B[j,o], MSB-8B[j,o], MSB-13A[j,o], MSB-62B[j,o], MSB-63Bj,o
Middle Sand of the Crouch Branch Confining Unit	MSB-39A[l]

II. Background Monitoring Wells	
Aquifer Zone	**Well Number**
M-Area Green Clay Confining Zone Upper Lost Lake	MSB-29D
M-Area Green Clay Confining Zone	MSB-43D
Upper Lost Lake	MSB-29C, MSB-43B
Lower Lost Lake	MSB-29B, MSB-43A

APPENDIX IVA-B (continued)

III. M-Area Plume Definition Wells	
Aquifer Zone	**Well Number**
M-Area	AOB-1 ASB-3AR[h], ASB-5AR[h], ASB-8[h] MOX-6[2, c, d], MOX-8[2, c, d] MSB-10C[2,c,d], MSB-11F[c,d], MSB-14C[2,c, d], MSB-15D[c,d], MSB-16C[c,d], MSB-19C, MSB-20C[g], MSB-21C[g], MSB-23R[o], MSB-24, MSB-26, MSB-27, MSB-28, MSB-31C, MSB-36D, MSB-39D[i], MSB-42D, MSB-46C, MSB-47D[h], MSB-48D[h], MSB-49D, MSB-60D[n], MSB-65D, MSB-66D[h], MSB-70D[g], MSB-74D, MSB-87CR
Green Clay Confining Zone	MSB-32, MSB-34C
M-Area Green Clay Confining Zone	MSB-55D[h]
Upper Lost Lake	AC-3A, ASB-2CR[h], ASB-3CR[h], ASB-5C[h], ASB-6C[h], ASB-8C[h], ASB-9C[h], ASB-10CR[h] MSB-11C[c], MSB-12B[j] , MSB-14B[2,c], MSB-15A[c], MSB-17B[g,i,j], MSB-18A[g,i,j,m], MSB-18B[g,i,j] , MSB-23BR, MSB-27B , MSB-28A, MSB-30CC, MSB-31CC, MSB-33C, MSB-34B, MSB-35B, MSB-36C, MSB-37C, MSB-39C[i,l], MSB-40C, MSB-42C, MSB-45B, MSB-47C[h], MSB-48C[h], MSB-53C[h], MSB-55HC[h], MSB-66C[h], MSB-70C[g,j], MSB-74C, MSB-75C, MSB-76C[g], MSB-77C[h], MSB-79C[j] SRW-2B[g], SRW-14B[g], SRW-16B[g]

III. M-Area Plume Definition Wells	
Aquifer Zone	**Well Number**
Lower Lost Lake	ASB-9B[h] MSB-9AR[c,j,o], MSB-12A, MSB-14A[2,c,j,o], MSB-15AA[c], MSB-16A[c], MSB-17BB[g,i,j], MSB-19B, MSB-20A[g], MSB-21B[g], MSB-25A, MSB-26B, MSB-30B, MSB-31B, MSB-33B, MSB-36B, MSB-38C[c], MSB-39B[i,l], MSB-40B, MSB-42B, MSB-45A, MSB-47B[h], MSB-48B[h], MSB-49B[j,l], MSB-51B, MSB-53B[h], MSB-55C[h], MSB-66B[h], MSB-68C[h], MSB-69C[h], MSB-71B[g], MSB-72B, MSB-74B, MSB-75B, MSB-77B[h], MSB-79B[j], MSB-82C[h], MSB-85C[h], MSB-88C, MSB-89B SRW-14A[g], SRW-16A[g] RWM 9M
M-Area_Green Clay Confining Zone_Upper Lost Lake _Lower Lost Lake	RWM 11M
Middle Sand of the Crouch Branch Confining Unit	ASB-6AA[9,h], ASB-8A[h], ASB-8B[h] MSB-10A[c,o], MSB-29A[h,l], MSB-30AA, MSB-33A, MSB-34A, MSB-36A, MSB-37B, MSB-40Al, MSB-41B, MSB-42A, MSB-46A, MSB-48A[h], MSB-48 TA[h], MSB-49A, MSB-55B[h], MSB-68B[h], MSB-82A[h], MSB-82B[h], MSB-88B SRW-2A[g]

III. M-Area Plume Definition Wells	
Aquifer Zone	**Well Number**
Crouch Branch	ASB-6TA[9,h], ASB-8TA[9,h] MSB-12TA, MSB-12TB, MSB-23TA, MSB-23TB1[4], MSB-23TB3[4], MSB-23TR, MSB-29TA[h], MSB-34TA, MSB-34TB1[4], MSB-34TB3[4], MSB-35TA, MSB-36TA, MSB-37TA, MSB-37TB[4], MSB-37TC[4], MSB-38TB1[4], MSB-38TB3[4], MSB-39TA[i], MSB-41TA, MSB-41TB1[4], MSB-41TB3[4], MSB-42TA, MSB-42TB1[4], MSB-42TB3[4], MSB-43TA, MSB-45TA[4], MSB-45TB[4], MSB-45TC[4], MSB-47TA[9,h], MSB-52TA1[4], MSB-52TA3[4], MSB-52TA5[4], MSB-55TA[h], MSB-66TA[h], MSB-69TA[h], MSB-82TA[h], MSB-94TB1[4], MSB-94TB3[4], MSB-95TB1[4], MSB-95TB3[4], MSB-96TA1[4], MSB-96TB1[4], MSB-96TB3[4], MSB-97TA1[4], MSB-97TB1[4], MSB-97TC1[4] , MSB-98TB1[4] MSB-98TC1[4], MSB-104TB[4], MSB-104TC[4], MSB-116TA[4], MSB-116TB[4], MSB116-TC[4], MSB-117TA[4], MSB-117TB[4], MSB-117TC[4], MSB-120TA[4], MSB-120TB[4], MSB-120TC[4], MSB-121TA[4], MSB-121TB[4], MSB-121TC[4], MSB-122TA[4], MSB-122TB[4], MSB-122TC[4], MSB-123TA[4], MSB-123TB[4], MSB-123TC[4]
McQueen Branch	MSB-124MA[4], MSB-124MB[4], MSB-124MC[4],

APPENDIX IVA-B (continued)

IV. M-Area Piezometers	
Aquifer Zone	**Well Number**
M-Area	MCB-2 MSB-25, MSB-40D, MSB-53D, MSB-56D, MSB-77D
Upper Lost Lake	MSB-24A, MSB-50D
Lower Lost Lake	AC-2A SRW-13B
Middle Sand of the Crouch Branch Confining Unit	SRW-13A
Crouch Branch	MSB-38TA, MSB-40TA

APPENDIX IVA-B (continued)

V. ABRP/MCB/MBP Plume Definition Wells[5]	
Aquifer Zone	**Well Number**
M-Area	ABP-3[j], ABP-8D[j], MCB-4[j], MCB-5[j]
M-Area Green Clay Confining Zone Upper Lost Lake	ARP-1A[j]
M-Area Green Clay Confining Zone	ARP-3DR[j], ARP-4[j], ARP-19DR[j]
Upper Lost Lake (piezometer)	ABP-3C[j], ABP-9C[j] ARP-12C3[4,j], ARP-13C1[4], ARP-13C3[4, j], ARP-14C2[4], ARP-14C3[4,j], ARP-15C3[4, j], ARP-17C[j], ARP-20C[j], ARP-21C[j] MCB-5C, MCB-6C, MCB-7C, MCB-12C, MCB-14C[j], MCB-15C[j], MCB-16C, MCB-21B2[4, j], MCB-22C2[4, j], MCB-23B[j], MCB-24C2[4, j], MCB-25C[j], MCB-26C2[4, j], MCB-28C2[4, j], MCB-29C[j], MCB-30C[j], MCB-31C[j], MCB-32C, MCB-33C[j], MCB-34C[j], (MCB-35C) (BMW 004D, SLW 7, IDP 3C)

V. ABRP/MCB/MBP Plume Definition Wells[5]	
Aquifer Zone	**Well Number**
Lower Lost Lake (piezometer)	ABP-9B[j] ARP-12B1[4,j], ARP-13B1[4,j], ARP-17B[j], ARP-18B MCB-12B[j], MCB-14B[j], MCB-15B[j], MCB-16B, MCB-17B[j], MCB-18B, MCB-19B, MCB-22B2[4,j], MCB-24B2[4], MCB-25B[j], MCB-26B2[4], MCB-27B, MCB-28B2[4,j] , MCB-29B[j], MCB-30B[j], MCB-31B[j], MCB-32B, MCB-33B[j], MCB-34B[j], MCB-35B, MCB-36B[j], MCB-37B[j], MCB-38B[j], MCB-39B[j], MCB-40B[j] (IDP 3B)
Middle Sand of the Crouch Branch Confining Unit	ARP-14B1[4,j], ARP-15B1[4,j], ARP-22A[j] MCB-11B[j], MCB-40A[j]
Crouch Branch	ARP-17TA1[4,j], ARP-17TB1[4,j], ARP-17TC1[4,j], MSB-73TA1[4,j], MSB-93TA1[4,j]

VI. Southern Sector Plume Definition Wells & Surface Water Locations[6]	
Aquifer Zone	**Well Number**
M-Area	SSM-19D
Upper Lost Lake	SSL-13B, SSL-13C, SSL-20C, SSL-33C, SSM-10C2[4], SSM-11C2[4], SSM-12C2[4], SSM-13C2[4], SSM-14C2[4], SSM-15C2[4], SSM-16C2[4], SSM-17C2[4], SSM-19C[4], SSM-20C[4], SSM-22C[4], SSM-23C, SSM-029C, SSM-31C, SSM-32C

VI. Southern Sector Plume Definition Wells & Surface Water Locations[6]	
Aquifer Zone	**Well Number**
Lower Lost Lake	MSB-50B SSL-25B, SSL-33B, SSL-25C SSM-4B, SSM-5B, SSM-10B2[4], SSM-11B2[4], SSM-12B2[4], SSM-13B2[4], SSM-14B2[4], SSM-15B2[4], SSM-16B2[4], SSM-17B2[4] SSM-19B[4], SSM-20B[4], SSM-21B, SSM-22B[4], SSM-23B, SSM-24B, SSM-25B, SSM- 29B, SSM-30B, SSM-32B, SSM-34B, SSM-36B
Middle Sand of the Crouch Branch Confining Unit	MSB-75A SSM-11A, SSM-20A, SSM-21A, SSM-22A, SSM-24AL, SSM-25AL, SSM-25TA, SSM-31A, SSM-32A, SSM-33A, SSM-34A, SSM-34AA, SSM-35A, SSM-36A
Lower Lost Lake Middle Sands Crouch Branch Confining Unit	SSL-20B, SSL-30B
Crouch Branch	MSB-31A, MSB-75TA[4], MSB-75TB[4], MSB-75TC[4] SSM-21TA, SSM-31TA, SSM-32TA, SSM-33TA, SSM-35TA
Surface Water	TIMS-01[3], TIMS-03[3], TIMS-04[3]

APPENDIX IVA-B (continued)

VII. Western Sector Plume Definition Wells[7]	
Aquifer Zone	**Well Number**
Upper Lost Lake	MSB-99C, MSB-101C, MSB-102C, MSB-103C[j], MSB-104C[j], MSB-105C, MSB-106C, MSB-107C, MSB-107CC, MSB-108C[j], MSB-109C
Lower Lost Lake	MSB-70B, MSB-99B, MSB-101B, MSB-102B, MSB-103A[j], MSB-104B[j], MSB-105B, MSB-106B, MSB-107B, MSB-108B[j], MSB-109B, MSB-110B PW-116G
Upper Lost Lake Lower Lost Lake	MSB-101CC, MSB-107CC
Middle Sand of the Crouch Branch Confining Unit	MSB-101A, MSB-102A MSB-106A, MSB-107A, MSB-108A
Crouch Branch	MSB-21TA, MSB-21TB[4], MSB-21TC[4], MSB-30TB[4], MSB-30TC[4], MSB-90TB, MSB-100TA[4], MSB-100TB[4], MSB-100TC[4], MSB-102TA, MSB-104TA, MSB-106TB, MSB-108TB

APPENDIX IVA-B (continued)

VIII. Northern Sector Plume Definition Wells[9]	
Aquifer Zone	**Well Number**
M-Area	ASB-2AR, ASB-4 MSB-82D
Upper Lost Lake	ASB-004C, ASB-11C MSB-111C, MSB-112C, MSB-125C, MSB-126C
Lower Lost Lake	ASB-2B, ASB-004B, ASB-11B MSB-67C, MSB-111B, MSB-113B, MSB-112B, MSB-125B MSB-126B
Upper Lost Lake Lower Lost Lake	RWM -13CM
Middle Sand of the Crouch Branch Confining Unit	ASB-004AA MSB-47BB, MSB-67B, MSB-82A, MSB-111A, MSB-111AA, MSB-112A MSB-113A, MSB-113AA RWM-13BM
Lower Lost Lake Middle Sands Crouch Branch Confining Unit	
Crouch Branch	

APPENDIX IVA-B (continued)

Footnotes:

[1] The requirement to sample these monitoring wells is waived until pumps are installed.

[2] These wells are used as alternate point of compliance wells during operation of the WSTS (former DUS) at the M-Area Settling Basin until MSB-3CR, MSB-3BR, MSB-3DRR, and MSB-59DRR are installed.

[3] These are surface water monitoring locations.

[4] Multi-level wells that are analyzed for the organic groundwater protection constituents identified in Section I of Appx. IVA-A and field parameters of Section II of Appx. IVA-A of this permit and are not used in synchronous water level events.

[5] These wells are associated with the ABRP/MCB/MBP OU and are sampled per Table E.7-3 as described in Section E.7.3 of the Approved Permit Application .

[6] These wells are associated with the Southern Sector and are sampled per Table E.7-4 as described in Section E.7.3 of the Approved Permit Application.

[7] These wells are associated with the Western Sector and are sampled per Table E.7-5 as described in Section E.7.3 of the Approved Permit Application.

[8] This well is used as an alternate plume definition well during operation of the WSTS at the M-Area Settling Basin.

[9] These wells are associated with the Northern Sector and are sampled per Table E.7-6 as described in Section E.7.3 of the Approved Permit Application.

APPENDIX IVA-B (continued)

Footnotes continued:

[c] Barium and Lead analyses of groundwater from plume definition wells located along the sewer line and point of compliance wells

[d] Nickel analyses of groundwater from plume definition wells located along the sewer line and screened within the water table and water table point of compliance (POC) wells

[e] Aluminum and Sodium analyses of groundwater from all point of compliance and plume definition wells

[f] Chloride, Chromium, Cobalt, Copper, Manganese and Zinc analyses of groundwater from background wells

[g] Nitrate/Nitrite-as nitrogen analyses of groundwater from all POC wells, plume definition wells within western sector, and southern sector wells west of Road D

[h] Sulfate analyses of groundwater from plume definition wells around SRL Seepage Basins and from plume definition wells in northern sector

[i] Radionuclide analyses at all POC wells and plume definition wells located at the MSB-17, MSB 18, and MSB-39 well clusters

[j] 1,4-Dioxane analyses of groundwater at POC wells and plume definition wells per Table E.7-3, Table E.7-5, and Table E.7-7 as described in Section E.7.3 of the Approved Permit Application. Original RSL tap water limit retained

[k] 1,1-dichloroethene analyses of groundwater for all POC wells

[l] Cadmium analysis in wells MSB-29A, -39A, -39B, -39C, -40A, and -49B

[m] Beryllium analysis in wells MSB-6C, -7C, -8C, -18A and 63C

[n] Vanadium analysis in wells MSB-13D, - 60D, -62D, - 63D and 64DR

[o] Mercury analysis in wells MSB 1B, MSB002BR, MSB004BR, MSB 7B, MSB 8B, MSB009AR, MSB 10A, MSB 13A, MSB 14A, MSB 23R, MSB 62B, MSB 63B and RWM 10.

[p] Lindane analysis at all POC wells

APPENDIX IVA-C

SAVANNAH RIVER SITE METALLURGICAL LABORATORY HWMF

GROUNDWATER PROTECTION STANDARD/MONITORING CONSTITUENTS

I. Groundwater Protection Standard[e] 261 Appendix VIII / 264 Appendix IX Constituents		
Constituent	**Concentration Limit**	
Inorganics		
Aluminum	20	mg/L[c]
Barium	2.0	mg/L[a]
Chromium	0.1	mg/L[a]
Copper	1.3	mg/L[b]
Lead	0.015	mg/L[b]
Nickel	0.39	mg/L[c]
Mercury	0.002	mg/L[a]
Zinc	6	mg/L[c]
Organics		
Acetone	18	mg/L[f]
Carbon Tetrachloride	0.005	mg/L[a]
1,1-Dichloroethane	0.0028	mg/L[c]
1,1-Dichloroethene	0.007	mg/L[a]
Tetrachloroethene	0.005	mg/L[a]
Trans-1,2-Dichloroethene	0.1	mg/L[a]
1,1,1-Trichloroethane	0.2	mg/L[a]
Trichloroethene[d]	0.005	mg/L[a]
Vinyl Chloride	0.002	mg/L[a]

[a] MCL - Maximum Contaminant Level as established pursuant to U.S. EPA National Primary Drinking Water Regulations (updated 2018)

[b] Action Level as established in the U.S. EPA Drinking Water Regulations and Health Advisories (updated 2018)

[c] Concentration based on May 2021 EPA Regional Screening Level (RSL) for tap water; Nickel as soluble salt

[d] Trichloroethene, iron and total radium analyses at all point of compliance, plume definition, and background wells.

[e] All constituents listed in this appendix will be sampled annually at a minimum of 60% of the POC wells selected for the Appendix IX suite of constituents.

[f] Concentration based on May 2022 EPA Regional Screening Level (RSL) for tap water

APPENDIX IVA-C (continued)

II. Monitoring Constituents[e]	
Category	**Constituents**
Inorganics	Chloride, Cobalt, Iron[d], Manganese, Nitrate/Nitrite-as Nitrogen, Selenium, Sodium, Sulfate, Total Organic Carbon (TOC), Total Organic Halogens
Radionuclides	Gross-Alpha, Gross-Beta, Total Radium[d]
Field Parameters	pH, Specific Conductance, Temperature

APPENDIX IVA-D

SAVANNAH RIVER SITE METALLURGICAL LABORATORY HWMF

GROUNDWATER MONITORING NETWORK

I. Point of Compliance Wells	
Aquifer Zone	**Well Number**
M-Area	AMB-4D, AMB-5, AMB-6, AMB-8D, AMB-9D, AMB-10D, AMB-16D
Upper Lost Lake	AMB-18C, AMB-19C
Lower Lost Lake	AMB-10B
Middle Sand of the Crouch Branch Confining Unit	AMB-4A, AMB-10A, AMB-17A, AMB-18A

II. Background Monitoring Wells	
Aquifer Zone	**Well Number**
M-Area Green Clay Confining Zone Upper Lost Lake	MSB-29D
M-Area Green Clay Confining Zone	MSB-43D
Upper Lost Lake	MSB-29C, MSB-43B
Lower Lost Lake	MSB-29B, MSB-43A

APPENDIX IVA-D (continued)

III. Plume Definition Wells	
Aquifer Zone	**Well Number**
M-Area	AMB-7, AMB-11D, AMB-12D, AMB-14D, AMB-15D
Upper Lost Lake	AMB-11B
Lower Lost Lake	AMB-4B, AMB-7B
Middle Sand of the Crouch Branch Confining Unit	AMB-7A

APPENDIX IVA-E

SAVANNAH RIVER SITE M-AREA AND MET LAB HWMFs

GROUNDWATER MONITORING SCHEDULE

I. Quarterly

(A) All groundwater protection standard constituents, inorganic constituents, and field parameters identified in Appendices IVA-A and IVA-C shall be sampled at all new wells installed pursuant to permit condition IVA.B.4(g) quarterly for one (1) year after installation.

II. Semi-Annually (January 1 - June 30; July 1 - December 31)

(A) All groundwater protection standard constituents identified in Section I, Appendix IVA-A of this permit, with the exception of polychlorinated biphenyls, shall be sampled at all point of compliance, plume definition, and background wells specified in Sections I, II and III of Appendix IVA-B, respectively, of this permit.

(B) TCE, iron and total radium identified in Section I, Appendix IVA-C of this permit shall be sampled at all point of compliance, plume definition, and background wells specified in Sections I, II and III of Appendix IVA-D, respectively, of this permit.

(C) Polychlorinated biphenyls shall be sampled at point of compliance wells MSB-1DR, MSB-2DR, MSB-4DR, and MSB-59DRR; plume definition wells MSB-10C, and MSB-31C; and recovery wells RWM-001-R, RWM-6, and RWM-10.

(D) All field parameters identified in Section II, Appendices IVA-A and IVA-C of this permit shall be sampled at all point of compliance, plume definition, and background wells specified in Appendices IVA-B and IVA-D, respectively, of this permit.

(E) Water level elevation measurements shall be collected within a 60 day period at all point of compliance, plume definition, background wells and piezometers specified in Appendices IVA-B and IVA-D.

(F) All constituents identified in Tables E.7-3, E.7-4, E.7-6 and E.7-7, as described in Section E.7.3 of the Approved Permit Application, shall be sampled at plume definition wells and surface water locations specified in Sections III, V, VI, and VIII of Appendix IVA-B of this permit.

III. Annually (January - December 31)

(A) All monitoring constituents identified in Section II, Appendices IVA-A and IVA-C of this permit shall be sampled at all point of compliance, plume definition, and background

wells as specified in Sections I, II and III of Appendices IVA-B and IVA-D, respectively, of this permit.

(B) All constituents identified in Tables E.7.3, E.7-4 and E.7-5 as described in in Section E.7.3 of the Approved Permit Application shall be sampled at plume definition wells and surface monitoring locations specified in Sections V and VI of Appendix IVA-B of this permit.

(C) Selected constituents identified from R.61-79.264 Appendix IX shall be sampled at a minimum of 20% of point of compliance wells for the M-Area and 60% of point of compliance wells for the Met Lab, to be approved by the Department prior to sample collection.

APPENDIX IVA-F

SAVANNAH RIVER SITE M-AREA AND MET LAB HWMFs

SCHEDULE FOR CORRECTIVE ACTION PROGRAM

NORTHERN SECTOR CORRECTIVE ACTION	
Monitor the Production Data from the Two Production Wells (PW 20A and PW 53A)	Ongoing – September 2029
Part 1 Characterization Plan for CBAU/MQBAU and Implement Part 1	Completed December 2023
Part 2 Characterization Plan for CBAU/MQBAU and Implement Part 2	October 2024 – February 2026
Flow and Transport Model and Corrective Measures Study Submittal	September 2029

VADOSE ZONE CORRECTIVE ACTION	
Status Report on all SVEU/PSVE Systems Submittal	Completed August 2022
Characterization of vadose zone east of the MASB	Completed July 2023

WESTERN SECTOR CORRECTIVE ACTION	
TA for In-situ remedial technology northwest of MASB near MSB106 (emulsified zero valent iron [EZVI])	Completed September 2023
Monitor results of In-situ Chemical Oxidation (ISCO) (near MSB101) and EZVI deployments	Completed April 2024

SOUTHERN SECTOR CORRECTIVE ACTION	
Aerobic Biostimulation -Humate Amendment	October 2024 – September 2028
Corrective Measures Study and Phase III Corrective Action Plan Submittal	September 2028

APPENDIX IVA-F (continued)

ABRP/MCB/MBP	
Sampling Phase I wells, Phase II wells and extended monitoring well network	Ongoing – September 2030
Sampling of Phase III wells	Ongoing – September 2030
Sampling of existing monitoring wells for 1,4-dioxane	September 2022 – September 2030
Phase IVa Characterization	March 2027 – September 2027
Phase IVb Characterization	March 2028 – September 2028
Sampling of Phase IV Wells	September 2028 – September 2030
Submittal of a Corrective Measures Study and Corrective Action Plan	December 2030 – September 2032

METALLURGICAL LABORATORY CORRECTIVE ACTION	
Passive SVE monitoring RWM 17 shutdown & monitoring Lead monitoring (Data reported in Annual Groundwater Monitoring and Corrective Action Report)	Completed August 2022
Submittal of recommendations on RWM 17B shutdown, lead corrective action, and status of passive SVE	Completed September 2022

MISCELLANEOUS ACTIONS	
Submit revised pages of the Permit Renewal Application	Completed February 7, 2022

Module IV

SECTION D Mixed Waste Management Facility

The conditions of this module describe groundwater monitoring and corrective action programs.

Tritium, gross alpha, and other radionuclides are being addressed in the scope of groundwater remediation although these constituents are not regulated under RCRA. These constituents are regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the South Carolina Pollution Control Act (PCA) and the South Carolina Hazardous Waste Management Act (SCHWMA). SRS has agreed to address these constituents pursuant to Settlement Agreement No. 87-52-SW, as amended on October 5, 1995 and the April 8, 1985 MOA. Corrective action for these constituents will be addressed under this RCRA postclosure permit pursuant to these Agreements and because this integrated approach is the most technically effective means of addressing the groundwater contamination.

Pursuant to Agreement No. 87-52-SW, as amended, this Module IVD also requires that groundwater contamination from the Old Radioactive Waste Burial Ground (ORWBG) be addressed under the RCRA Permit. The ORWBG was an approximately 76 acre trench disposal area in the southern part of the BGC which began receiving waste in 1952 and was filled in 1972. The ORWBG is a RCRA/CERCLA unit. While groundwater monitoring and corrective action are being conducted under RCRA pursuant to Settlement Agreement No. 87-52-SW, as amended on October 5, 1995, surface closure of the unit is being conducted under CERCLA. For purposes of groundwater corrective action, Module IVD addresses the MWMF/LLRWDF and ORWBG as one waste management area. Four groundwater contaminant plumes have been identified as migrating from the combined MWMF/LLRWDF-ORWBG area.

The approved corrective action for the tritium component of the Southwest plume began as an Interim Measure in 2000 and consists of a sheet-pile dam constructed across the Old F-Area Effluent Ditch to create a retention pond. The surface water in the pond is pumped upgradient and irrigated to specific areas for uptake and evapotranspiration by plants and trees (phytoremediation). Tritium concentrations measured in Fourmile Branch have decreased substantially since the fullscale operation of the corrective action system began.

Due to a significant decrease in volatile organic compounds (VOCs), tetrachloroethylene and trichloroethylene, since 1995, the corrective action component for VOCs has changed to natural degradation for the entire VOC plume. Corrective action effectiveness monitoring is ongoing and will continually be assessed to determine if future enhancements or modification are necessary.

The groundwater monitoring portion of the Permit describes the location, number, and depths of groundwater monitoring wells; identifies which wells are upgradient and downgradient; establishes a list of hazardous constituents and concentration limits which must be achieved through corrective action; defines the length of the compliance period; specifies the sampling

and analysis protocols for the groundwater corrective action monitoring program, the statistical evaluations to be conducted, and the procedures for modifying the Permit if changes to the groundwater corrective action monitoring program are necessary. The groundwater corrective action portion of the permit consists of a description of the overall strategy for corrective action and routine evaluation of the effectiveness of the groundwater remedial system.

IVD.A. POINT OF COMPLIANCE

The Point of Compliance (POC) is a vertical surface located at the hydraulically downgradient limit of the Waste Management Area (WMA) that extends down to the base of the uppermost aquifer underlying the regulated units. The WMA, as delineated in Figures B-2 and B-3 of Volume VII, Section B of the Approved Permit Application, as well as Figure IVD-1 and Figure IVD-2 of this permit, includes the Mixed Waste Management Facility and Old Radioactive Waste Burial Ground. In map view, the POC is represented in Figures E.1.1-1, E.1.1-2, E.1.1-3, and E.1.1-4 of Volume VII, Section E.1 of the Approved Permit Application as a line running through appropriately designated wells listed in Table IVD-A (Monitoring Well System) of this Permit Module. Vertically, the POC extends downward through the Upper Aquifer Zone of the Upper Three Runs Aquifer (UAZ –UTR also Water Table Aquifer), the Lower Aquifer Zone of the Upper Three Runs Aquifer (LAZ-UTR) and the Gordon Aquifer to the top of the Meyers Branch Confining System which acts as the confining unit. The three aquifer zones, UAZ & LAZ of UTR and the Gordon Aquifer have been identified in Volume VII, Section E.2.1.2. of the Approved Permit Application which is the base of the uppermost aquifer in Volume VII, Section E.2.1.2 of the Approved Permit Application. The Confining System I-II has been identified in Volume VII, Section E.2.1.2. of the Approved Permit Application as the base of the uppermost aquifer. [R.61-79.264.95]

IVD.B. GROUNDWATER PROTECTION STANDARD

The Permittee shall ensure that the Groundwater Protection Standard (GWPS), as required under R.61-79.264.92, is being met or that remedial actions are being taken to reduce contaminant levels to meet standards. The GWPS shall consist of the hazardous constituents and their corresponding concentration limits listed in Table IVD-B (Groundwater Protection Standard), as established under R.61-79.264.93 and R.61-79.264.94 and the non-hazardous constituents and their corresponding concentration limits pursuant to the MOA and the Settlement Agreement 87-52-SW, as amended.

IVD.C. COMPLIANCE PERIOD

The Permittee shall comply with the applicable requirements of R.61-79.264 Subpart F for the duration of the compliance period. The compliance period is equal to thirty

(30) years. The compliance period for all units began on October 30, 1999 and is scheduled to end on October 30, 2029. If the Permittee is engaged in corrective action at the end of the compliance period as specified above, the compliance period will be extended until the Permittee can demonstrate that the GWPS has not been exceeded for a period of three (3) consecutive years. [R.61-79.264.96]

IVD.D. WELL LOCATION, INSTALLATION, AND CONSTRUCTION

The Permittee shall design, install and/or maintain a groundwater monitoring system to comply with applicable requirements of R.61-79.264 Subpart F and as specified in Volume VII, Section E.1 of the Approved Permit Application and below.

IVD.D.1 Point of Compliance Well System

The appropriately designated monitoring wells listed in Table IVD-A (Monitoring Well System) will be used to monitor groundwater quality at the POC. These monitoring wells constitute the POC monitoring well system.

IVD.D.2 Background Monitoring Wells

The appropriately designated monitoring wells listed in Table IVD-A (Monitoring Well System) will be used to monitor background groundwater quality. These monitoring wells constitute the background monitoring well system.

IVD.D.3 Plume Assessment Wells

The appropriately designated monitoring wells listed in Table IVD-A (Monitoring Well System) shall be used to monitor the contaminant plume movement and to assess the effectiveness of the corrective action program.

IVD.D.4 Additional Wells

The Permittee shall install additional wells as necessary to maintain compliance with R.61-79.264 Subpart F requirements. A proposal for the design, location and installation of any additional well(s) shall be submitted to the Department for approval at least 45 days prior to planned installation. Written approval must be obtained prior to installation of any monitoring well.

IVD.D.5 Well Design, Installation and Maintenance

The Permittee shall ensure that all wells are designed, installed, and maintained such that groundwater samples are representative of the true water quality. Additionally, the wells shall be designed, installed and monitored in such a manner to prevent interconnection between different hydrologic units. Failure of any well(s) to meet the standards described herein shall not interfere with the groundwater monitoring or corrective action programs.

IVD.D.6 Well Construction Details

The Permittee shall report the surveyed elevation of monitoring well(s) to the nearest 0.01 foot within forty-five (45) days of installation along with as-built drawings and lithologic logs. The Permittee shall also report the total well depth, screened interval, elevation of the top of casing, ground surface and protective casing.

IVD.D.7 Well Redevelopment

The Permittee will monitor turbidity each time a monitoring well is sampled. If a stable turbidity measurement of less than or equal to 15 NTU cannot be achieved during the well purge, then the monitoring well must be assessed to determine if redevelopment is required to improve the well quality. The findings of the turbidity assessment shall be incorporated into the next groundwater corrective action report.

IVD.D.8 Well Abandonment

The Permittee shall properly abandon any well(s) not meeting the standard of Permit Condition IVD.D.5 - Well Design, Installation and Maintenance. A proposal for specific well abandonment procedures shall be submitted to the Department for approval at least thirty (30) days prior to beginning abandonment procedures.

IVD.E. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining and analyzing groundwater samples from the groundwater monitoring wells described in Permit Condition IVD.D - Well Location, Installation, and Construction to provide a reliable indication of groundwater quality as required under R.61-79.264.97(d) and (e).

IVD.E.1 Sampling Procedures

Groundwater samples shall be collected, preserved, and shipped in accordance with the procedures specified in Volume VII, Section E.5 of the Approved Permit Application.

IVD.E.2 Sampling Frequency

The Permittee shall ensure that the frequency of sample collection and the wells to be sampled are in accordance with Volume VII, Section E.7 of the Approved Permit Application. The Permittee shall monitor groundwater quality throughout the compliance period to demonstrate conformance with the GWPS.

IVD.E.3 Chain of Custody

Groundwater samples shall be tracked and controlled using the chain-of-custody procedure specified in Volume VII, Section E.7 of the Approved Permit Application.

IVD.E.4 Analysis

Samples shall be analyzed according to Volume VII, Section E.7 of the Approved Permit Application or the most current final version of EPA Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846), using whichever procedure is more recent at the time of analysis. For those constituents that have established Maximum Contaminant Levels (MCL) or Regional Screening Levels (RSL), the analytical method chosen must be capable of achieving a Practical Quantitation Limit (PQL) below the established MCL or RSL. For those constituents which do not have an established MCL or RSL, the analytical method must achieve the lowest reasonably achievable PQL based on instrumentation and analytical method.

IVD.E.5 Annual Appendix IX Analyses

Annually, the Permittee shall collect and analyze groundwater samples from a minimum of 20% of the point of compliance well(s) as established in Volume VII, Section E.6 of the Approved Permit Application. The specific POC wells selected for this expanded analysis will be those with the highest contaminant concentrations. Concentration of tritium, gross alpha, gross beta, total radium, strontium-90 and lead must be considered in making this selection. At least forty-five (45) days prior to sampling, the Permittee shall submit rationale and a specific proposal to the Department for review and approval detailing which POC wells are to be sampled. POC wells from each monitored aquifer unit must be represented. These samples will be analyzed for all constituents contained in

R.61-79.264 Appendix IX (Groundwater Monitoring List) in order to determine whether additional hazardous constituents are present in the uppermost aquifer.

IVD.E.5(a) If R.61-79.264 Appendix IX constituents are detected that are not listed in the GWPS, then the Permittee may resample within one (1) month to confirm their presence. If the Permittee chooses not to resample, the original detections will be considered valid detections. If the presence of hazardous constituents that are not listed in the GWPS is confirmed by resampling, or the Permittee chooses not to resample, then the Permittee shall report the concentrations of these constituents to the Department in writing within seven (7) days after receipt of analytical data. The Permittee must immediately incorporate these new constituents within the groundwater monitoring program.

IVD.E.5(b) For each R.61-79.264 Appendix IX constituent identified at the point of compliance, the Permittee shall determine whether the concentration detected is elevated with respect to background. If the concentration detected at the point of compliance is determined to be statistically significant with respect to background, the new constituent will be added to the GWPS. Within ninety (90) days of completing the required statistical evaluation, the Permittee shall submit an application for a permit modification to incorporate the new constituents, along with their concentration limits, into the GWPS of Permit Condition IVD.B - Groundwater Protection Standard.

IVD.E.6 **Additional Characterization**

The Permittee shall complete additional groundwater characterization activities specified in Appendix D – Additional Compliance Dates of this Permit according to the schedule contained therein.

IVD.E.7 **Management of Contaminated Media**

The Permittee shall treat, store and/or dispose of all contaminated surface water and groundwater generated as a result of the monitoring programs in accordance with applicable federal, state and local requirements and the current approved Investigation-Derived Waste Management Plan, WSRC-RP-94-1227.

IVD.F. BACKGROUND GROUNDWATER QUALITY

The Permittee shall establish background groundwater quality in accordance with R.61-79.264.97 and as approved by the Department. Groundwater samples will be collected and analyzed for the constituents listed in Volume VII, Table E.1.1-1 of the

Approved Permit Application and the results reported to the Department in accordance with Permit Conditions IVD.E - Sampling And Analysis Procedures and IVD.K - Recordkeeping And Reporting.

IVD.G. GROUNDWATER/SURFACE WATER MONITORING PROGRAM AND DATA EVALUATION

IVD.G.1 The Permittee shall monitor groundwater quality for the list of parameters identified on Volume VII, Tables E.5.1-1 of the Approved Permit Application following the sampling and analysis plan required by permit condition IVD.E - Sampling and Analysis Procedure. Routine monitoring shall continue from permit issuance and extend throughout the compliance period and any extension thereof. Groundwater samples must be collected in accordance with the Groundwater Monitoring Schedule in Volume VII, Tables E.7.1.-1, E.7.2-1, E.7.3.-1, and E.7.4-1of the Approved Permit Application.

IVD.G.2 The Permittee shall monitor surface water quality at the sampling locations in the Engineered Ditch Stream and Fourmile Branch as listed in Table IVD-A of this Permit. Analysis must be for tritium concentration, at a minimum. The results of surface water sampling in the Southwest Plume Area shall be used to monitor the effect of the interim and final measures on the local hydrogeology and to monitor discharge to Fourmile Branch.

IVD.G.3 Annually, the Permittee shall collect samples from a minimum of twenty percent of the POC monitoring wells identified in Table IVD-A to be analyzed for those constituents identified on Volume VII, Tables E.6.1-1, E.6.2-1, E.6.3-1, and E.6.4-1of the Approved Permit Application. The specific POC wells selected for this expanded analysis will be those with the highest contaminant concentrations. Concentration of tritium, gross alpha, gross beta, total radium, strontium-90 and lead must be considered in making this selection. At least forty-five (45) days prior to sampling, the Permittee shall submit rationale and a specific proposal to the Department for review and approval detailing which POC wells are to be sampled. POC wells from each monitored aquifer unit must be represented.

IVD.G.4 Semi-annually, the Permittee shall utilize data collected during the previous two quarters to evaluate the water quality, groundwater surface elevation, recharge, and any other significant hydrogeologic information. This information must be reported to the Department annually as required by permit condition IVD.K.3 - Annual Report.

IVD.H. GROUNDWATER ELEVATION

Semi-annually, the Permittee shall measure and record the groundwater elevation in all wells listed in Volume VII, Table E.1.1-1 of the Approved Permit Application. Data shall be collected within each of the four groundwater plume areas such that all groundwater elevation measurements shall be completed within a thirty (30) day time period. The Permittee shall use the water level data to evaluate the direction and rate of groundwater flow and determine whether the requirements for locating monitoring wells continue to be satisfied. If the Permittee determines that the conditions are no longer satisfied, the Permittee must submit a proposal to the Department within thirty (30) days to modify the monitoring system. If the modification is significant, the Permittee shall be required to submit an application for permit modification.

IVD.I. STATISTICS

Pursuant to R.61-79.264.97(h) and R.61-79.264.97(i), an appropriate statistical procedure must be proposed as outlined in Volume VII, Section E.5 of the Approved Permit Application prior to the termination of groundwater corrective action. The proposed statistical method must compare compliance point data to the concentration limits in the GWPS. Until such time that an appropriate statistical method has been approved by the Department, the effectiveness of the corrective action program shall be evaluated semi-annually using graphical analysis of time versus concentration trends in strategic monitoring wells. These trend analyses shall be submitted in the corrective action groundwater monitoring reports required by Permit Condition IVD.K - Recordkeeping And Reporting.

IVD.J. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Permittee shall design, implement, and maintain a groundwater corrective action program as required under R.61-79.264.100 and R.61-79.264.101.

The Permittee shall review remedial technologies available for tritiated groundwater to determine whether a different method(s) may aid in achieving the clean-up goals. The Permittee shall screen the available technologies for implementability, achievability, economic feasibility and overall effectiveness. The Permittee shall provide a brief description of each method which includes an evaluation of its technical and economic feasibility. If a different technology is identified, the Permittee must propose a permit modification to incorporate the identified technology. This review shall be conducted every five years and a summary report is due in accordance with the schedule specified in Appendix D – Additional Compliance Dates of this Permit.

IVD.J.1 Corrective Action at the Point of Compliance

The Permittee shall design, implement, and maintain a corrective action program that prevents hazardous constituents from exceeding the GWPS as specified in Permit Condition IVD.B (Groundwater Protection Standard) at the POC.

IVD.J.2 Corrective Action Beyond the Point of Compliance

The Permittee must conduct a corrective action program to remove and treat any hazardous constituents that exceed the GWPS as specified in Permit Condition IVD.B (Groundwater Protection Standard) in groundwater between the compliance point and the downgradient property boundary, and beyond the property boundary where necessary to protect human health and the environment in accordance with R.61-79.264.100(e).

IVD.J.3 Maintenance of the Corrective Action System

The Permittee shall ensure that the groundwater corrective action system (i.e. groundwater recovery components and ancillary treatment equipment) is maintained to operate as specified in the approved Corrective Action Plan (CAP), Volume VII, Section E.8 of the Approved Permit Application.

IVD.J.4 Corrective Action System

Groundwater corrective action shall be implemented in accordance with the approved CAP. The approved CAP is located in Volume VII, Section E.8 of the Approved Permit Application.

IVD.J.5 Continuation of Corrective Action

The Permittee must continue corrective action during the compliance period to the extent necessary to ensure that the GWPS is not exceeded. In accordance with R.61-79.264.100(f), the compliance period is automatically extended, if necessary, until the GWPS has not been exceeded for three (3) consecutive years.

IVD.J.6 Modification of the Corrective Action System

If the Permittee determines that the corrective action program no longer satisfies the requirements of R.61-79.264.100, within ninety (90) days of such a determination, the Permittee must submit a permit modification request pursuant to R.61-79.270.42 to make any appropriate changes to the corrective action system.

IVD.K. RECORDKEEPING AND REPORTING

IVD.K.1 Operating Record

The Permittee shall enter all monitoring, testing, analytical, and corrective action data obtained pursuant to the Permit Conditions contained in Module IV (PostClosure Care Groundwater Requirements) into the operating record as required by R.61-79.264.73(b)(6). Groundwater analytical and elevation data in an electronic spreadsheet file for each semi-annual sampling event shall accompany reports on the groundwater monitoring system and groundwater and surface water (seepline) quality as described in condition IVD.K.2 (Annual Report) of this permit.

IVD.K.2 Additional Notification

If the Permittee determines pursuant to Permit Condition IVD.B that a GWPS concentration limit has been exceeded at the point of compliance, then the Permittee shall notify the Department within seven (7) days of receipt of analytical data.

IVD.K.3 Annual Report

On or before August 31 of each year, the Permittee shall submit one printed copy and one electronic PDF copy of a detailed annual report describing the effectiveness of the corrective action program for the previous calendar year. This report shall include, at a minimum, all of the elements required for the following:

IVD.K.3(a) Detailed narrative evaluating and discussing the effectiveness of the corrective action system. This should include a discussion of time trend analyses to date for the past year plus the zone of capture and drawdown for the corrective action system. All portions of the groundwater contaminant plume located outside the zone of capture of the recovery system must be identified. Improvements for achieving capture of all portions of the plume that exceed the GWPS (Table IVD-B – Groundwater Protection Standard) must be discussed. Proposals for modification of the corrective action system must be submitted under separate cover;

IVD.K.3(b) Hydrographs for all point of compliance wells and strategic plume assessment wells (Table IVD-A - Monitoring Well System) depicting groundwater elevations through time. Nested wells may be included on the same hydrograph;

IVD.K.3(c) Time versus concentration plots for a representative number of plume assessment wells identified in Table IVD-A (Monitoring Well System). These plots shall depict the concentration of tritium and trichloroethylene and any other specific parameters that may be pertinent to monitoring the effectiveness of the corrective action system;

IVD.K.3(d) Isoconcentration maps depicting tritium and trichloroethylene for each hydrologic unit and each annual sampling event. All plume assessment, background and recovery wells listed in Table IVD-A (Monitoring Well System) to the appropriate table caption text) shall be depicted. Surface water sampling locations shall be depicted on the isoconcentration maps. Maps shall include the vicinity of the F-Area HWMF, H-Area HWMF and the Mixed Waste Management Facility; and the Burial Ground Complex. Large scale maps should be used;

IVD.K.3(e) Potentiometric maps depicting groundwater flow directions for each hydrogeologic unit based on gradients for each annual sampling event shall be submitted. Potentiometric maps shall include all plume assessment, background, and recovery wells identified in Table IVD-A (Monitoring Well System). An evaluation of any significant changes in gradients or flow direction shall be included;

IVD.K.3(f) An evaluation of water quality data and water elevation data for significant changes. This evaluation should be conducted on the point of compliance wells (Table IVD-A - Monitoring Well System) and a representative number of plume assessment wells;

IVD.K.3(g) Hydrogeologic cross sections for each annual sampling event during the reporting period depicting the distribution of tritium and trichloroethethylene and any other specific parameter that may be pertinent for monitoring the effectiveness of the corrective action system. At least one cross section should be oriented perpendicular through the point of compliance wells and include the background groundwater monitoring well;

IVD.K.3(h) Determination of the extent and severity of groundwater contamination to include an evaluation and discussion of all water quality and water elevation data. This may be delineated on the large scale isoconcentration maps and cross sections;

IVD.K.3(i) Recharge data (monthly and cumulative inches of rainfall) during the reporting period. Monthly precipitation values shall be plotted through time at an appropriate scale to facilitate comparison with well hydrographs;

IVD.K.3(j) A table depicting all constituents from R.61-79.264 Appendix IX detected in groundwater samples in the previous 10 years. This table should include, at minimum, well identification, date of sample collection, parameter detected, date of resample and analytical results;

IVD.K.3(k) A table listing all production, groundwater recovery, and groundwater monitoring wells, along with pertinent construction details that have been installed since the submittal of the 2023 Approved Permit Application. This table must also list all wells installed, abandoned, resurveyed, or otherwise modified during the year. A map(s) should be included depicting the locations of the wells listed on this table;

IVD.K.3(l) Groundwater elevation data collected during the reporting period in table form. Groundwater quality data in table form for all constituents sampled during the reporting period. Copies of the chain of custody, field records and laboratory data sheets, to include the date of extraction and date of analysis for each sample, shall be made available upon request;

IVD.K.3(m) Tabulated volumetric data and flow rates for the corrective action system (monthly and cumulative);

IVD.K.3(n) Dates and explanations of any corrective action system down time exceeding 72 hours due to mechanical or equipment failure; Description of any minor modifications or repairs to the groundwater monitoring and corrective action systems;

IVD.K.3(o) Discussion of proposed and/or implemented modifications to the system.

IVD.L. DUTY OF PERMITTEE

The Permittee shall assure that the groundwater monitoring and corrective action programs are in compliance with the requirements of R.61-79.264 Subpart F throughout the postclosure periods.

IVD.L.1 Permit Modification

If the Permittee at any time determines that the corrective action program required by this Permit no longer satisfies the requirements of R.61-79.264.100 and R.61-79.264.101 for releases of hazardous constituents listed in Table IVD-B (Groundwater Protection Standard) that originate from the regulated unit, the Permittee must within ninety (90) days submit an application for a permit modification to make any appropriate changes in the program, as required under R.61-79.264.100(h).

IVD.L.2 Termination of Corrective Action

If the GWPS is met in accordance with R.61-79.264.100 and R.61-79.264.101, the Permittee may submit an application for a permit modification pursuant to R.61-79.270.42 to terminate the corrective action program and establish a groundwater compliance monitoring program.

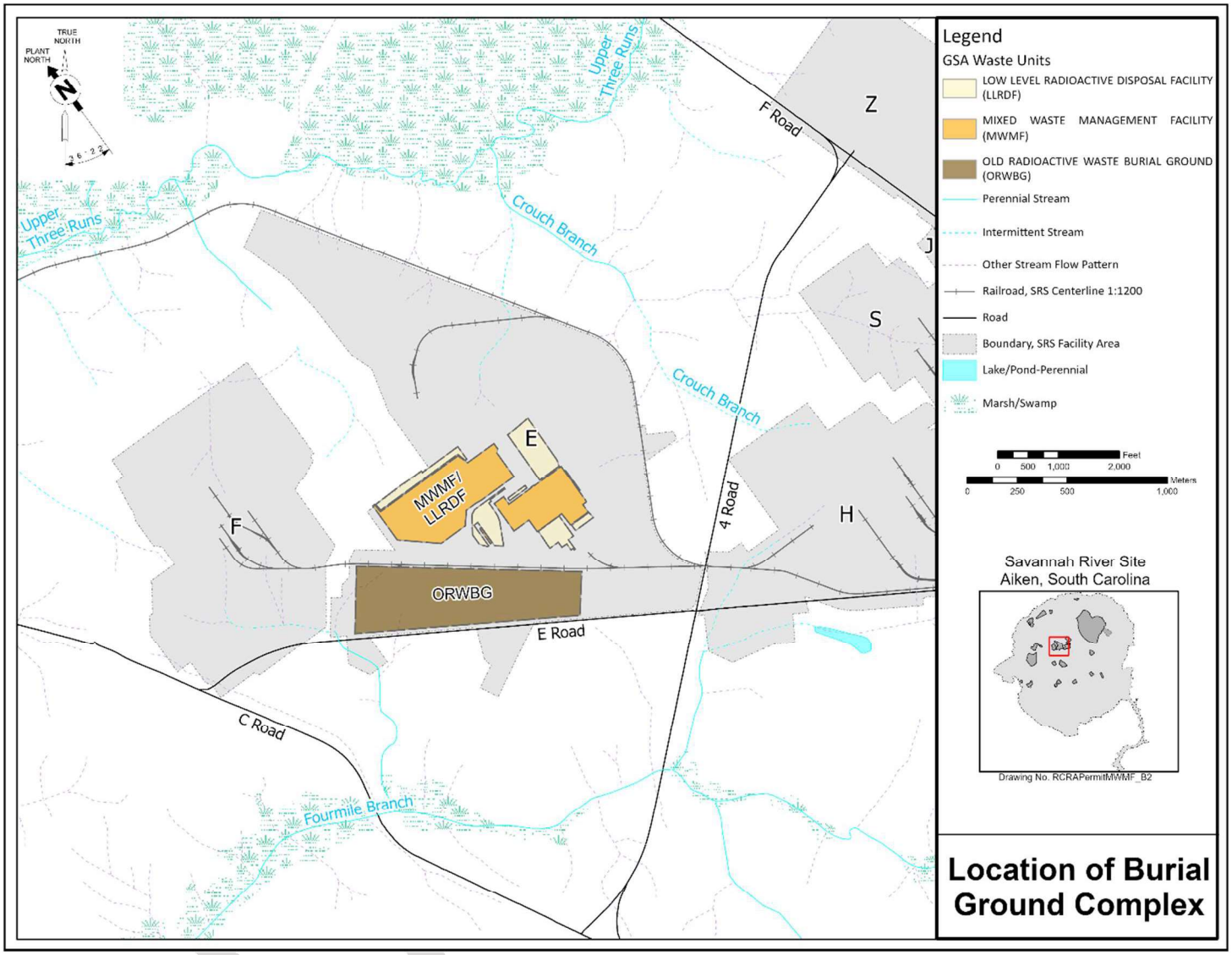
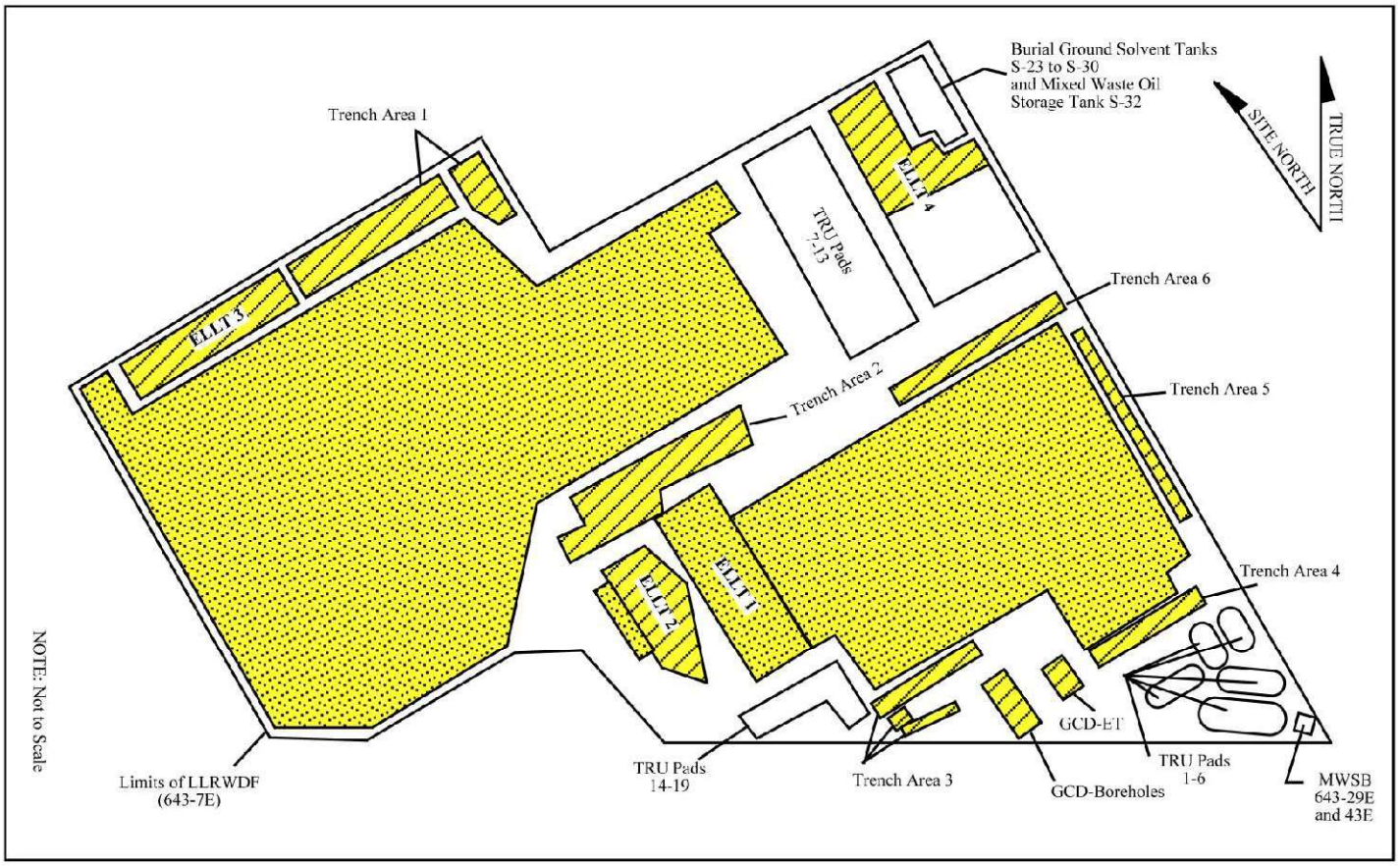


Figure IVD-1 Waste Management Area, Mixed Waste Management Facility



Legend:

Areas Displayed in Yellow are Considered the MWMF for RCRA Purposes

Surface Capped Portions of the Initial MWMF Trenches (643-28E)

Additional Solvent Rag Portions of LLRWDF Considered Part of the MWMF for RCRA Purposes

Figure IVD-2 Unit Identification Mixed Waste Management Facility

Table IVD-A

Monitoring Well System

Mixed Waste Management Facility

Point of Compliance Wells	SWP Area	BGO-27C, BGO-27D, BGO-28D, BGO-30C, BGO-30D, BGO-31C, BGO-31D, BGO-32D, BGO-33C, BGO-33D
	NWP Area	BGO-10A(R), BGO-10C, BGO-10D(R), BGO-11D(R), BGO-12A(X), BGO-12C(X), BGO-12D(R), BGO-13D(R), BGO-14A(R), BGO-14C(R), BGO-14DR, BGO-15D BGO-26A, BGO-26D
	NEP Area	BGO-03A, BGO-03C, BGO-03D(R), BGO-04D, BGO-05C, BGO-05D, BGO-06A, BGO-06B, BGO-06C, BGO-06D BGO-07D, BGO-08A(R), BGO-08C, BGO-08D, BGO-09D BGO-10A(R), BGO-10C, BGO-10D(R)
	SEP Area	BGO-34D, BGO-35C, BGO-35D, BGO-36D, BGO-37C, BGO-37D, BGO-38D, BGO-39A, BGO-39C, BGO-39D
Background Monitoring Wells		BGO-01D, BGO-02D, HSB-85A, HSB-85B, HSB-85C

Plume Assessment Wells	SWP Area	BGO-29A, BGO-29C, BGO-29D, BGO-45A, BGO-45B, BGO-45C, BGO-45D, BGO-46B, BGO-46C, BGO-46D, BGO-47A, BGO-47C, BGO-47D, BGO-48C, BGO-48D, BGO-50A, BGO-50C, BGO-50D BSW-01C, BSW-01D, BSW-02CR, BSW-02D, BSW-03C, BSW-03D, BSW-04C, BSW-04D, BSW-05C, BSW-05D, BSW-06C, BSW-06D, BSW-07C, BSW-07D, BSW-08C, BSW-08D FSS-01D, FSS-02D, FSS-03C, FSS-03D, FSS-04D, HSB-142C, HSB-142D, HSB-143C, HSB-143D, HSB-151C, HSB-151D(R) SWP-01C, SWP-02C, SWP-03D, SWP-05C, SWP-05D, SWP-06C, SWP-06D
	NWP Area	BGO-10B, BGO-16A(R), BGO-16B, BGO-16D, BGO-17D(R), BGO-18A, BGO-18D, BGO-19D(R), BGO-40D, BGO-41A, BGO-42C, BGO-43AA, BGO-43A, BGO-43C(R), BGO-43D, BGO-53A, BGO-53B, BGO-53C, BGO-53D FCB-2CRR, FCB-2DR, NWP-1B, NWP-1D, NWP-2D, NWP-3C, NWP-101D, NWP-202C, FAB 2MC, FAB 2
	NEP Area	BGO-10B, BGO-20AA, BGO-20A, BGO-20B, BGO-20C, BGO-20D, BGO-21D, BGO-22D(X), BGO-23D, BGO-44AA, BGO-44A, BGO-44B, BGO-44C, BGO-44D, BGO-51A, BGO-51AA, BGO-52B, BGO-52C BGX-01A, BGX-01C, BGX-01D, BGX-02B, BGX-02D, BGX-03D, BGX-04A, BGX-04C, BGX-04D, BGX-05D, BGX-06DR, BGX-07D, BGX-09D, BGX-10D, BGX-11D, BGX-13D HMD-01D, HMD-02D, HMD-03D, HMD-04B, HMD-04D, NEP-01DR, NEP-02D, NEP-03D, NEP-04D

	SEP Area	BGO-20AA, BGO-20A, BGO-20B, BGO-20C, BGO-20D, BGO-21D, BGO-22D(X), BGO-49A, BGO-49C, BGO-49D BGO-51A, BGO-51AA, BGO-52B, BGO-52C, BGO-52D, BSE-01C, BSE-01D, BSE-02C(R), BSE-02D(R), BSE-03CR, BSE-03D HIW-5MC1, HIW 5MC2, HSB-66D(R), HSB-119C, HSB-120C, HSB-154D, HSB-155C SEP 001MD, SEP 002B, SEP 002D, SEP 003CL, SEP 003CU
Wetland Piezometers		FHB-004D, FHB-4A, FHB-4B, FSP-072A, FSP-072B HSP-097A, HSP-097B
Surface Water Sampling Points		CBS-010, CBS-020, CBS-030, CBS-BF1, UTR-155, UTR-090, UTR-130, UTR-140, UTR-BF1 ED-01, FHP-001A, FHP-001, FM-3A, FM-2B, FMC002H, FMC002HD, OFD-01, OFD-02

Table IVD-B

GROUNDWATER PROTECTION STANDARD

Mixed Waste Management Facility

Constituent	CAS No.	Concentration Limit[1], ug/l
1,1-dichloroethylene	75-35-4	7
cis 1,2-dichloroethylene	156-59-2	70
trans 1,2-dichloroethylene	150-60-5	100
1,2-dichloroethylene (total)	540-59-0	
1,2-dichloropropane	78-87-5	5
1,2,4-trichlorobenzene	120-82-1	70
Antimony	7440-36-0	6
Arsenic, total recoverable	7440-38-2	10
Barium, total recoverable	7440-39-3	2000
Benzene	71-43-2	5
Beryllium	7440-41-7	4
Carbon disulfide	75-15-0	810[2]
Carbon tetrachloride	56-23-5	5
Chlorobenzene	108-90-7	100
Chloroform	67-66-3	80
Chromium, total recoverable	7440-47-3	100
Cobalt, total recoverable	7440-48-4	6[2]
Dichlorodifluoromethane	75-71-8	200[2]
Lead, total recoverable	7439-92-1	15
Mercury	7439-97-6	2
Nickel, total recoverable	7440-02-0	390
Selenium, total recoverable	7782-49-2	50
Silver, total recoverable	7440-22-4	94[2]
Tetrachloroethylene	127-18-4	5
Thallium	7440-28-0	2
Trichloroethylene	79-01-6	5
Trichlorofluoromethane	75-69-4	5200[2]
Vanadium, total recoverable	7440-62-2	86[2]
Chloroethene (vinyl chloride)	75-01-4	2
1,1-dichloroethane	75-34-3	2.8[2]

Constituent	CAS No.	Concentration Limit[1], ug/l
1,1,1-trichloroethane	71-55-6	200
1,2-dichloroethane	107-06-2	5
1,4-dioxane	123-91-1	6.1[3]
Copper, total recoverable	7440-50-8	1300
Tin	7440-31-5	12000[2]
Toluene	108-88-3	1000
Vinyl acetate	108-05-4	410[2]
Xylenes (total)	1330-20-7	10000
Zinc, total recoverable	7440-66-6	6000[2]
Gross Alpha	Not Applicable	15 pCi/L
Nonvolatile Beta	Not Applicable	4 mrem/yr
Carbon-14	14762-75-5	Sum of beta dose <4 mrem/yr AND <50 pCi/L
Iodine-129	15046-84-1	Sum of beta dose <4 mrem/yr AND <50 pCi/L
Radium, total alpha emitting	Not Applicable	5 pCi/L
Radium-226	13982-63-3	5 pCi/L
Strontium-90	10098-97-2	8 pCi/L
Tritium	10028-17-8	20,000 pCi/L
Uranium-233/234	Not Applicable	Sum of alphas <15 pCi/L
Uranium-235	15117-96-1	Sum of alphas <15 pCi/L
Uranium-238	7440-61-1	Sum of alphas <15 pCi/L

[1] Maximum Contaminant Level (MCL) as established pursuant to U.S. EPA National Primary Drinking Water Regulations, June 2024, unless otherwise noted.

[2] U.S. EPA Regional Screening Levels (RSL) for Tap Water, May 2022

[3] U.S. EPA Regional Screening Levels (RSL) for Tap Water, May 2010

Module IV

SECTION F Sanitary Landfill

The conditions of this module describe groundwater monitoring and corrective action programs for the Sanitary Landfill identified and described in condition IIIF.B - PostClosure Procedures and Use of Property. The groundwater monitoring portion of the Permit describes the location, number, and depths of groundwater monitoring wells; identifies which wells are upgradient and downgradient; establishes a list of hazardous constituents and concentration limits which must be achieved through corrective action; defines the length of the compliance period; specifies the sampling and analysis protocols for the groundwater corrective action monitoring program, the statistical evaluations to be conducted, and the procedures for modifying the Permit if changes to the groundwater corrective action monitoring program are necessary. The groundwater corrective action portion of the permit consists of a description of the overall strategy for corrective action and routine evaluation of the effectiveness of the groundwater remedial system.

IVF.A. POINT OF COMPLIANCE

The Point of Compliance (POC) is a vertical surface located at the hydraulically downgradient limit of the Waste Management Area (WMA) that extends down to the base of the uppermost aquifer underlying the regulated units. The WMA, as delineated in Figure E.1-1 of Vol XXIII, Section E.1 of the Approved Permit Application as well as Figure IVF-1 of this permit, includes the Main Section and the Southern Expansion of the Sanitary Landfill which is a RCRA hazardous waste management unit. In map view, the POC is represented in Figure E.1-2 of Vol XXIII, Section E.1 of the Approved Permit Application through appropriately designated wells listed in Table IVF-A (Monitoring Well System) of this Permit Module. Vertically, the POC extends downward through the Steed Pond Aquifer to the top of the Crouch Branch Confining Unit, which is identified as the base of the uppermost aquifer in Volume, XXIII, Section E.2.3 of the Approved Permit Application. [R.61-79.264.95]

IVF.B. GROUNDWATER PROTECTION STANDARD

The Permittee shall ensure that the Groundwater Protection Standard (GWPS), as required under R.61-79.264.92, is being met or that remedial actions are being taken to reduce contaminant levels to meet standards. The GWPS shall consist of the hazardous constituents and their corresponding concentration limits listed in Table IVF-B (Groundwater Protection Standard), as established under R.61-79.264.93 and R.61-79.264.94.

IVF.C. COMPLIANCE PERIOD

The Permittee shall comply with the applicable requirements of R.61-79.264 Subpart F for the duration of the compliance period. The compliance period is equal to twenty three (23) years. The compliance period for all units began on 10/26/1997 and ended on 06/22/2020. If the Permittee is engaged in corrective action at the end of the compliance period as specified above, the compliance period will be extended until the Permittee can demonstrate that the GWPS has not been exceeded for a period of three (3) consecutive years. [R.61-79.264.96]

IVF.D. WELL LOCATION, INSTALLATION, AND CONSTRUCTION

The Permittee shall design, install and/or maintain a groundwater monitoring system to comply with applicable requirements of R.61-79.264 Subpart F and as specified below.

IVF.D.1 Point of Compliance Well System

The appropriately designated monitoring wells listed in Table IVF-A (Monitoring Well System) will be used to monitor groundwater quality at the POC. These monitoring wells constitute the POC monitoring well system.

IVF.D.2 Background Monitoring Wells

The appropriately designated monitoring wells listed in Table IVF-A (Monitoring Well System) will be used to monitor background groundwater quality. These monitoring wells constitute the background monitoring well system.

IVF.D.3 Plume Definition Wells

The appropriately designated monitoring wells listed in Table IVF-A (Monitoring Well System) shall be used to monitor the contaminant plume movement and to assess the effectiveness of the corrective action program.

IVF.D.4 Additional Wells

The Permittee shall install additional wells as necessary to maintain compliance with R.61-79.264 Subpart F requirements. A proposal for the design, location and installation of any additional well(s) shall be submitted to the Department for approval at least 45 days prior to planned installation. Written approval must be obtained prior to installation of any monitoring well.

IVF.D.5 **Well Design, Installation and Maintenance**

The Permittee shall ensure that all wells are designed, installed, and maintained such that groundwater samples are representative of the true water quality. Additionally, the wells shall be designed, installed and monitored in such a manner to prevent interconnection between different hydrologic units. Failure of any well(s) to meet the standards described herein shall not interfere with the groundwater monitoring or corrective action programs.

IVF.D.6 **Well Construction Details**

The Permittee shall report the surveyed elevation of monitoring well(s) to the nearest 0.01 foot within forty-five (45) days of installation along with as-built drawings and lithologic logs. The Permittee shall also report the total well depth, screened interval, elevation of the top of casing, ground surface and protective casing.

IVF.D.7 **Well Redevelopment**

The Permittee will monitor turbidity each time a monitoring well is sampled. If a stable turbidity measurement of less than or equal to 15 NTU cannot be achieved during the well purge, then the monitoring well must be assessed to determine if redevelopment is required to improve the well quality. The findings of the turbidity assessment shall be incorporated into the next groundwater corrective action report.

IVF.D.8 **Well Abandonment**

The Permittee shall properly abandon any well(s) not meeting the standard of Permit Condition IVF.D.5- Well Design, Installation and Maintenance. A proposal for specific well abandonment procedures shall be submitted to the Department for approval at least thirty (30) days prior to beginning abandonment procedures.

IVF.E. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining and analyzing groundwater samples from the groundwater monitoring wells described in Permit Condition IVF.D - Well Location, Installation, And Construction to provide a reliable indication of groundwater quality as required under R.61-79.264.97(d) and (e).

IVF.E.1 Sampling Procedures

Groundwater samples shall be collected, preserved, and shipped in accordance with the procedures specified in Volume XXIII, Section E.8.4.2 of the Approved Permit Application.

IVF.E.2 Sampling Frequency

The Permittee shall ensure that the frequency of sample collection and the wells to be sampled are in accordance with Volume XXIII, Table E.8-3 of the Approved Permit Application. The Permittee shall monitor groundwater quality throughout the compliance period to demonstrate conformance with the GWPS.

IVF.E.3 Chain of Custody

Groundwater samples shall be tracked and controlled using the chain-of-custody procedure specified in Vol XXIII, Section E.8.4.2.5 of the Approved Permit Application.

IVF.E.4 Analysis

Samples shall be analyzed according to Volume I. Section E.1.2 of the Approved Permit Application or the most current final version of EPA Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846), using whichever procedure is more recent at the time of analysis. For those constituents that have established Maximum Contaminant Levels (MCL) or Regional Screening Levels (RSL), the analytical method chosen must be capable of achieving a Practical Quantitation Limit (PQL) below the established MCL or RSL. For those constituents which do not have an established MCL or RSL, the analytical method must achieve the lowest reasonably achievable PQL based on instrumentation and analytical method.

IVF.E.5 Annual Appendix IX Analyses

Annually, the Permittee shall collect and analyze groundwater samples from the historically most contaminated point of compliance well(s) as established in Volume XXIII, Table E.1-1 of the Approved Permit Application. These samples will be analyzed for all constituents contained in R.61-79.264 Appendix IX (Groundwater Monitoring List) in order to determine whether additional hazardous constituents are present in the uppermost aquifer. Effective in 2010, polychlorinated biphenyls (PCBs) and dioxins/furans are exempt from Appendix IX annual sampling until the end of compliance period at which time all Appendix IX constituents shall be sampled.

IVF.E.5(a) If R.61-79.264 Appendix IX constituents are detected that are not listed in the GWPS, then the Permittee may resample within one (1) month to confirm their presence. If the Permittee chooses not to resample, the original detections will be considered valid detections. If the presence of hazardous constituents that are not listed in the GWPS is confirmed by resampling, or the Permittee chooses not to resample, then the Permittee shall report the concentrations of these constituents to the Department in writing within seven (7) days after receipt of analytical data. The Permittee must immediately incorporate these new constituents within the groundwater monitoring program.

IVF.E.5(b) For each R.61-79.264 Appendix IX constituent identified at the point of compliance, the Permittee shall determine whether the concentration detected is elevated with respect to background. If the concentration detected at the point of compliance is determined to be statistically significant with respect to background, the new constituent will be added to the GWPS. Within ninety (90) days of completing the required statistical evaluation, the Permittee shall submit an application for a permit modification to incorporate the new constituents, along with their concentration limits, into the GWPS of Permit Condition IVF.B - Groundwater Protection Standard.

IVF.E.6 **Additional Characterization**

The Permittee shall complete additional groundwater characterization activities specified in Appendix D – Additional Compliance Dates of this Permit according to the schedule contained therein.

IVF.E.7 **Management of Contaminated Media**

The Permittee shall treat, store and/or dispose of all contaminated surface water and groundwater generated as a result of monitoring programs in accordance with all applicable federal, state and local requirements and the current approved Investigation-Derived Waste Management Plan, WSRC-RP-94-1227.

IVF.F. BACKGROUND GROUNDWATER QUALITY

The Permittee shall establish background groundwater quality in accordance with R.61-79.264.97 and as approved by the Department. Groundwater samples will be collected and analyzed for the constituents listed in Volume XXIII, Table E.5.2 of the Approved Permit Application and the results reported to the Department in accordance with Permit Conditions IVF.E - Sampling And Analysis Procedures and IVF.J - Recordkeeping And Reporting.

IVF.G. GROUNDWATER ELEVATION

On a schedule established in the Approved Permit Application, the Permittee shall measure and record the groundwater elevation in all active monitoring wells listed in Volume XXIII, Table E.1-1 of the Approved Permit Application. Within thirty (30) days of completing these measurements, the Permittee shall use the water level data to evaluate the direction and rate of groundwater flow and determine whether the requirements for locating monitoring wells continue to be satisfied. If the Permittee determines that the conditions are no longer satisfied, the Permittee must submit a proposal to the Department within thirty (30) days to modify the monitoring system. If the modification is significant, the Permittee shall be required to submit an application for permit modification.

IVF.H. STATISTICS

Pursuant to R.61-79.264.97(h) and R.61-79.264.97(i), an appropriate statistical procedure must be proposed as outlined in Volume XXIII, Section E.8.4.3 of the Approved Permit Application prior to the termination of groundwater corrective action. The proposed statistical method must compare compliance point data to the concentration limits in the GWPS. Until such time that an appropriate statistical method has been approved by the Department, the effectiveness of the corrective action program shall be evaluated semi-annually using graphical analysis of time versus concentration trends in strategic monitoring wells. These trend analyses shall be submitted in the corrective action groundwater monitoring reports required by Permit Condition IVF.J - Recordkeeping And Reporting.

IVF.I. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Permittee shall design, implement, and maintain a groundwater corrective action program as required under R.61-79.264.100 and R.61-79.264.101.

IVF.I.1 Corrective Action at the Point of Compliance

The Permittee shall design, implement, and maintain a corrective action program that prevents hazardous constituents from exceeding the GWPS or approved ACL/MZCL as specified in Permit Condition IVF.B (Groundwater Protection Standard) at the POC.

IVF.I.2 Corrective Action Beyond the Point of Compliance

The Permittee must conduct a corrective action program to remove and treat any hazardous constituents that exceed the GWPS or approved ACL/MZCL as specified in Permit Condition IVF.B (Groundwater Protection Standard) in

groundwater between the compliance point and the downgradient property boundary, and beyond the property boundary where necessary to protect human health and the environment in accordance with R.61-79.264.100(e).

IVF.I.3 Maintenance of the Corrective Action System

There is no ongoing corrective action system at this time.

IVF.I.4 Corrective Action System

There is no ongoing corrective action system at this time. Corrective action may be necessary in the future. Please see Appendix D – Additional Compliance Dates of this Permit.

IVF.I.5 Continuation of Corrective Action

The Permittee must continue corrective action during the compliance period to the extent necessary to ensure that the GWPS is not exceeded. In accordance with R.61-79.264.100(f), the compliance period is automatically extended, if necessary, until the GWPS has not been exceeded for three (3) consecutive years.

IVF.I.6 Modification of the Corrective Action System

If the Permittee determines that the corrective action program no longer satisfies the requirements of R.61-79.264.100, within ninety (90) days of such a determination, the Permittee must submit a permit modification request pursuant to R.61-79.270.42 to make any appropriate changes to the corrective action system.

IVF.J. RECORDKEEPING AND REPORTING

IVF.J.1 Operating Record

The Permittee shall enter all monitoring, testing, analytical, and corrective action data obtained pursuant to the Permit Conditions contained in Module IV (PostClosure Care Groundwater Requirements) into the operating record as required by R.61-79.264.73(b)(6). Groundwater analytical and elevation data in an electronic spreadsheet file for each semi-annual sampling event shall accompany reports on the groundwater monitoring system and groundwater and surface water quality as described in condition IVF.J.3 - Annual Report.

IVF.J.2 Additional Notification

If the Permittee determines pursuant to Permit Condition IVF.B that a GWPS concentration limit has been exceeded at the point of compliance, then the

Permittee shall notify the Department within seven (7) days of receipt of analytical data**.**

IVF.J.3 **Annual Report**

On or before March 1 of each year, the Permittee shall submit one printed copy and one electronic PDF copy of a detailed annual report describing the effectiveness of the corrective action program for the previous calendar year. This report shall include, at a minimum, all of the elements required for the following:

IVF.J.3(a) Hydrographs for all point of compliance wells and plume definition wells, including the 1,4 dioxane wells (Table IVF-A– Monitoring Well System) depicting groundwater elevations through time. Nested wells may be included on the same hydrograph;

IVF.J.3(b) Time versus concentration plots for Corrective Action ACL/MZ constituents for all background, point of compliance and appropriate plume definition wells identified in Table IVF-A (Monitoring Well System). These plots shall depict the concentration of total volatile organic compounds and any other specific parameter that may be pertinent to monitoring the effectiveness of the corrective action system;

IVF.J.3(c) Isoconcentration maps depicting the distributions of pertinent parameters. All plume definition, including 1, 4 dioxane plume definition, background and recovery wells listed Table IVF-A (Monitoring Well System) shall be depicted. Surface water sampling locations shall be depicted on the isoconcentration maps. Large scale maps should be used;

IVF.J.3(d) Potentiometric maps depicting groundwater flow directions for each hydrogeologic unit based on gradients for each semi-annual period shall be submitted. Potentiometric maps shall include all plume definition, background, and recovery wells identified in Table IVF-A (Monitoring Well System). An evaluation of any significant changes in gradients or flow direction shall be included;

IVF.J.3(e) An evaluation of water quality data and water elevation data for significant changes. This evaluation should be conducted on the point of compliance wells (Table IVF-A – Monitoring Well System) and a representative number of plume definition wells;

IVF.J.3(f) Hydrogeologic cross sections for each sampling event during the reporting period the July 1 through December 31 semi-annual groundwater monitoring period depicting the distribution of pertinent groundwater contaminants and any other specific parameter that may be pertinent for monitoring the effectiveness of the corrective action system. At least one cross section should be oriented perpendicular through the point of compliance wells and include the background groundwater monitoring well.

IVF.J.3(g) Determination of the extent and severity of groundwater contamination to include an evaluation and discussion of all water quality and water elevation data. This may be delineated on the large scale isoconcentration maps and cross sections;

IVF.J.3(h) Recharge data (monthly and cumulative inches of rainfall) during the reporting period. Monthly precipitation values shall be plotted through time at an appropriate scale to facilitate comparison with well hydrographs;

IVF.J.3(i) A table depicting all constituents from R.61-79.264 Appendix IX detected in groundwater samples in the previous 10 years. This table should include, at minimum, well identification, date of sample collection, parameter detected, date of resample and analytical results;

IVF.J.3(j) A table listing all production, groundwater recovery, and groundwater monitoring wells, along with pertinent construction details that have been installed since the submittal of the 2023 Approved Permit Application. This table must also list all wells installed, abandoned, resurveyed, or otherwise modified during the year. A map(s) should be included depicting the locations of the wells listed on this table.

IVF.J.3(k) Groundwater elevation data collected during the reporting period in table form. Groundwater quality data in table form for all constituents sampled during the reporting period. Copies of the chain of custody, field records and laboratory data sheets, to include the date of extraction and date of analysis for each sample, shall be made available upon request.

IVF.K. DUTY OF PERMITTEE

The Permittee shall assure that the groundwater monitoring and corrective action programs are in compliance with the requirements of R.61-79.264 Subpart F throughout the operating, closure, and postclosure periods.

IVF.K.1 Permit Modification

If the Permittee at any time determines that the corrective action program required by this Permit no longer satisfies the requirements of R.61-79.264.100 and R.61-79.264.101 for releases of hazardous constituents listed in Table -IVF-B (Groundwater Protection Standards) that originate from the regulated unit, the Permittee must within ninety (90) days submit an application for a permit modification to make any appropriate changes in the program, as required under R.61-79.264.100(h).

IVF.K.2 Termination of Corrective Action

If the GWPS is met in accordance with R.61-79.264.100 and R.61-79.264.101, the Permittee may submit an application for a permit modification pursuant to R.61-79.270.42 to terminate the corrective action program and establish a groundwater compliance monitoring program.

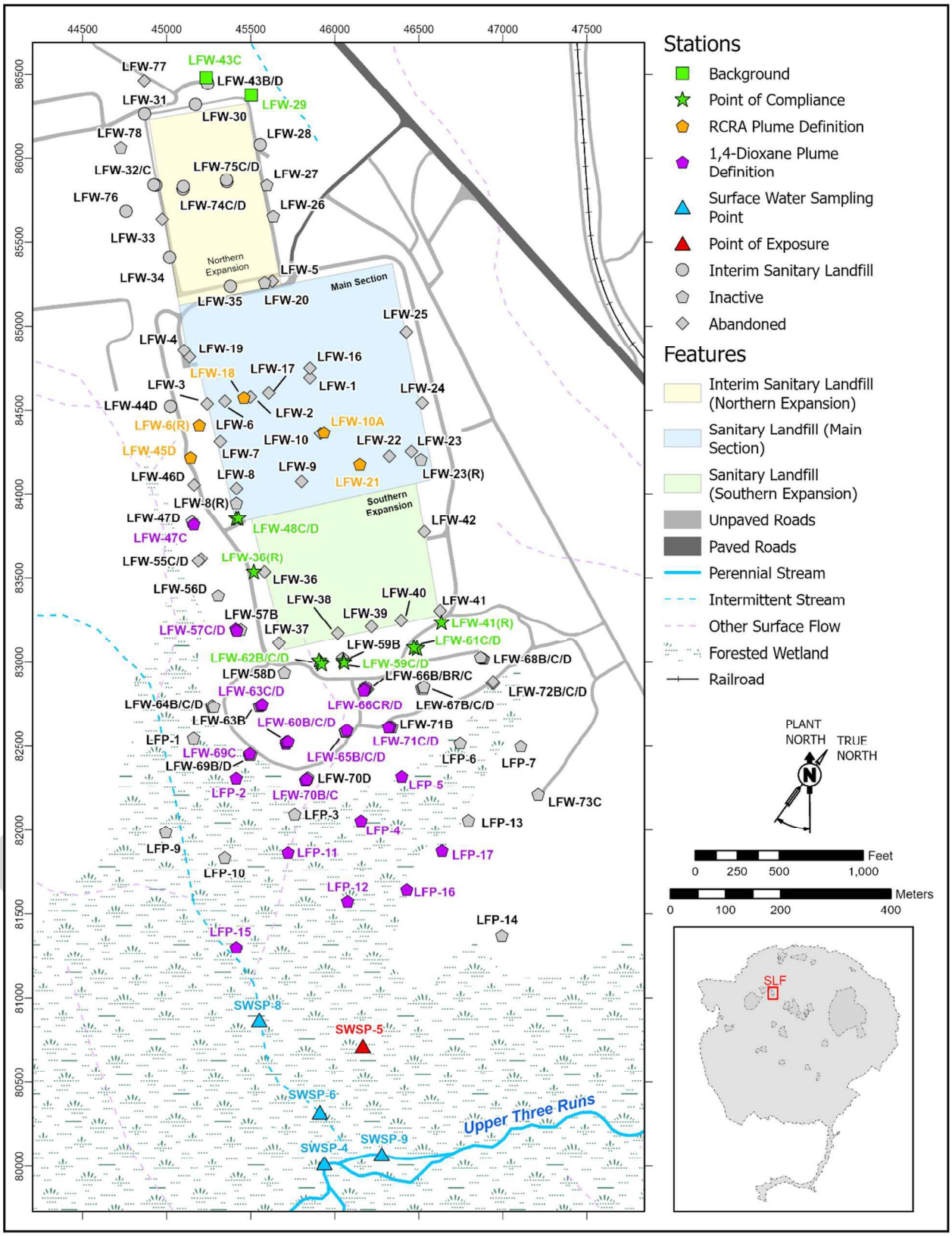


Figure IVF-1 Sanitary Landfill, Savannah River Site

Table IVF-A

Monitoring Well System

Sanitary Landfill

Point of Compliance Wells	LFW-36R, LFW-41R, LFW-48C, LFW-48D, LFW-59C, LFW-59D, LFW-61C, LFW-61D, LFW-62B, LFW-62C, LFW-62D
Point of Exposure	SWSP-5
Background Monitoring Wells	LFW-29, LFW-43C
Plume Definition Wells	LFW-6R, LFW-10A, LFW-18, LFW-21, LFW-45D
1,4 Dioxane Plume Definition Wells	LFW-47C, LFW-57C, LFW-57D, LFW-60B, LFW-60C, LFW-60D, LFW-63C, LFW-63D, LFW-65D, LFW-66CR, LFW-66D, LFW-69C, LFW-70B, LFW-70C, LFW-71C, LFW-71D, LFP-2WP, LFP-4WP, LFP- 5WP, LFP-11WP, LFP-12WP, LFP-15WP, LFP-16WP, LFP-17WP
1,4 Dioxane Surface Water Sampling Points	SWSP-4, SWSP-6, SWSP-8, SWSP-9

Table IVF-B

GROUNDWATER PROTECTION STANDARD

Sanitary Landfill

Constituent	CAS No.	Concentration Limit[1], ug/l
Corrective Action ACL/MZ Constituents		
Mercury	7439-97-6	2
Cobalt, total recoverable	7440-48-4	6[2]
1,1-dichloroethane	75-34-3	2.8[2]
1,1-dichloroethylene	75-35-4	7
1,4-dioxane	123-91-1	6.1[3]
Benzene	71-43-2	5
		21[4]
Chloroethene (vinyl chloride)	75-01-4	2
		12[4]
cis 1,2-dichloroethylene	156-59-2	70
		287[4]
Dichloromethane (methylene chloride)	75-09-2	5
		21[4]
Tetrachloroethylene	127-18-4	5
		21[4]
Trichloroethylene	79-01-6	5
		21[4]
Tritium	10028-17-8	20,000 pCi/L
Compliance Monitoring Constituents		
Arsenic, total recoverable	7440-38-2	10
Barium, total recoverable	7440-39-3	2000
Cadmium, total recoverable	7440-43-9	5
Chromium, total recoverable	7440-47-3	100
Copper, total recoverable	7440-50-8	1300
Lead, total recoverable	7439-92-1	15
Nickel, total recoverable	7440-02-0	390
Selenium, total recoverable	7782-49-2	50
Silver, total recoverable	7440-22-4	94[2]
Vanadium, total recoverable	7440-62-2	86[2]
Zinc, total recoverable	7440-66-6	6000[2]

Constituent	CAS No.	Concentration Limit[1], ug/l
Compliance Monitoring Constituents (Continued)		
1,1,1-trichlorethane	71-55-6	200
1,2-dichlorbenzene	95-50-1	600
1,2-dichloroethane	107-06-2	5
1,2-dichloropropane	78-87-5	5
1,3-dichlorobenzene	541-73-1	PQL
1,4-dichlorobenzene	106-46-7	75
2-hexanone	591-78-6	38[2]
2,4-dichlorophenoxyacetic acid (2,4-D)	94-75-7	70
2,4,5-TP (silvex)	93-72-1	50
Acetone	67-64-1	18000[2]
Acetonitrile	75-05-8	130[2]
Chlorobenzene	108-90-7	100
Chloroethane	75-00-3	8300[2]
Chloroform	67-66-3	80
Chloromethane (methyl chloride)	74-87-3	190[2]
Dichlorodifluoromethane	75-71-8	200[2]
Ethyl benzene	100-41-4	700
Lindane	58-89-9	0.2
Methyl ethyl ketone	78-93-3	5600[2]
Methyl isobutyl ketone	108-10-1	6300[2]
Phenol	108-95-2	5800[2]
Styrene	100-42-5	100
Toluene	108-88-3	1000
Trans-1,2-dichloroethylene	156-60-5	100
Trichlorofluoromethane	75-69-4	5200[2]
Xylene (total)	1330-20-7	1000
Fluoride	16984-48-8	4000
Nitrate-nitrite as nitrogen	Not Applicable	10000
Combined Ra226/228	7440-14-4	5 pCi/L
Gross Alpha	Not Applicable	15 pCi/L
Water Quality Monitoring Constituents		
Aluminum	7429-90-5	Not Applicable
Iron, total recoverable	7439-89-6	Not Applicable
Manganese, total recoverable	7439-96-5	Not Applicable

Constituent	CAS No.	Concentration Limit[1], ug/l
[1]	Maximum Contaminant Level (MCL) as established pursuant to U.S. EPA National Primary Drinking Water Regulations, June 2024, unless otherwise noted.	
[2]	U.S. EPA Regional Screening Levels (RSL) for Tap Water, May 2022	
[3]	U.S. EPA Regional Screening Levels (RSL) for Tap Water, May 2010	
[4]	ACL established pursuant to R.61-79.264(b)	

Module V. CONTAINERS

SECTION B Mixed Waste Storage Buildings

The Mixed Waste Storage Buildings (MWSBs) are located within the Solid Waste Management Facility (SWMF) and consist of two buildings, Building 643-29E and Building 643-43E. Buildings 643-29E and 643-43E may be used to store and/or treat hazardous, mixed, non-hazardous radioactive, polychlorinated biphenyls (PCBs), Transuranic (TRU), Mixed TRU, and non-hazardous wastes in containers.

The MWSBs are pre-engineered buildings with sheet metal roofing and partial sheet metal siding. The floor of each building is a concrete pad equipped with a sump and surrounded by 4-inch high curbing capable of containing at least 10 percent of the allowable maximum volume of waste containing free liquids.

Building 643-29E may store up to 78,091 gallons of waste (26,330 gallons of waste with free liquids) and Building 643-43E may store up to 280,051 gallons of waste (144,880 gallons of waste with free liquids). Both buildings may store toxic, corrosive, reactive, ignitable, listed hazardous waste and mixed waste.

A complete description of the Mixed Waste Storage Buildings can be found in Volume VIII of the Approved Permit Application.

VB.A. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

VB.A.1 Permitted Waste

The Permittee may store and treat the following wastes in containers at the facility, subject to the terms of this Permit and as follows:

Container Storage Area(s)	Description of Hazardous Wastes	EPA Hazardous Waste Number	Maximum Volume	Maximum Number and Type of Containers	Maximum Treatment Volume (ft^3/day)
Building 643-29E	See Section C.1 of the Approved Permit Application	See Table C-1 of Volume VIII of the Approved Permit Application.	78,091 gallons	116 – 90 ft^3 boxes (non free liquids) 478 – 55 gal drums (free liquids)	Absorption 500 pH adjustment 200 Unit Total 700
Building 643-43E	See Section C.1 of the Approved Permit Application	See Table C-1 of Volume VIII of the Approved Permit Application.	280,051 gallons	416 – 90 ft^3 boxes (non free liquids) 2,634 – 55 gal drums (free-liquids)	

VB.A.2 **Prohibited Waste**

The Permittee is prohibited from storing and/or treating hazardous waste that is not identified in Permit Condition VB.A.1 - Permitted Waste

VB.B. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit and the requirements of R.61-79.264 Subpart I. [R.61-79.264.171]

VB.C. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired. [R.61-79.264.172]

VB.D. MANAGEMENT OF CONTAINERS

The Permittee shall keep all containers closed during storage, except when it is necessary to add or remove waste, and shall not open, handle, or store containers in a manner that may rupture the container or cause it to leak. [R.61-79.264.173]

VB.E. CONTAINMENT SYSTEMS

The Permittee shall maintain the containment system in accordance with R.61-79.264.175 and Volume VIII, Section D of the Approved Permit Application.

VB.F. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the container area at least weekly, not to exceed any nine-day calendar interval, in accordance with the Inspection Schedule included in Volume VIII, Section F of the Approved Permit Application, to detect leaking containers and deterioration of containers and the containment system caused by corrosion and other factors. [R.61-79.264.174]

VB.G. RECORDKEEPING

The Permittee shall place the results of all waste analyses and trial tests and any other documentation showing compliance with the requirements of Permit Conditions VB.I. - Special Container Provisions for Ignitable or Reactive Waste and VB.J. - Special Container Provisions for Incompatible Waste and R.61-79.264.17(a) & (b) and R.61-79.264.177 in the facility operating record. [R.61-79.264.73]

VB.H. CLOSURE

At closure of the container area, the Permittee shall remove all hazardous waste and hazardous waste residues from the containment system and surrounding areas, in accordance with the procedures in the approved Closure Plan contained in Volume VIII, Section I of the Approved Permit Application and R.61-79.264.112 and R.61-79.264.178.

VB.I. SPECIAL CONTAINER PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

VB.I.1 Ignitability or Reactive Waste Setback

The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line. [R.61-79.264.176]

VB.I.2 **Ignitability or Reactive Waste Precautions**

The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Volume VIII, Section F.5 of the Approved Permit Application. [R.61-79.264.17(a) and R.61-79.264.176]

VB.J. SPECIAL CONTAINER PROVISIONS FOR INCOMPATIBLE WASTE

VB.J.1 **Placement in Same Container**

The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container unless R.61-79.264.17(b) is complied with and the procedures specified in Volume VIII, Sections C, D and F of the Approved Permit Application are followed. [R.61-79.264.177(a)]

VB.J.2 **Placement in Unwashed Container**

The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material. [R.61-79.264.177(b)]

VB.J.3 **Separation of Containers**

The Permittee shall separate containers of incompatible wastes as required by R.61-79.264.177(c) and described in Volume VIII, Sections C, D, and F of the Approved Permit Application.

VB.K. COMPLIANCE SCHEDULE

The Permittee shall submit revised application pages and associated topographic map of the Approved Permit Application to correct the information regarding the proximity of sewer lines to the Mixed Waste Storage Buildings and other minor administrative (Class I) corrections. This application revision shall be submitted within 60 days from the effective date of this permit.

Module VIII. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS & AREAS OF CONCERN

VIII.A. APPLICABILITY

The objective of the corrective action program at a hazardous waste management facility is to evaluate the nature and extent of releases of hazardous waste and/or constituents, and if necessary, implement corrective measures to protect human health and the environment. The Permittee is required to implement corrective action in accordance with R.61-79.264.101 and the conditions of this Permit. The Permittee shall follow applicable guidance, including but not limited to the RCRA Corrective Action Plan, EPA 520-R-94-004, dated May 1994 (most recent version).

The Permit Conditions of this Module apply to:

VIII.A.1 SWMUs and AOCs Identified by the RCRA Facility Investigation (RFI)

The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix C of the Federal Facility Agreement (FFA), which requires a RCRA Facility Investigation (RFI), any subsequent investigations, or other means, as listed in Appendix VIII-A.

VIII.A.2 SWMUs and AOCs Identified as No Further Action (NFA) At This Time

The SWMUs and AOCs identified in Appendix G.2 of the FFA, which require no further investigation under this permit at this time.

VIII.A.3 SWMUs and AOCs That Require Confirmatory Sampling

The SWMUs and AOCs identified in Appendix G.1 of the FFA, which require confirmatory sampling.

VIII.A.4 Additional SWMUs or AOCs

Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means. As used in this part of the Permit, the terms “discover”, “discovery”, or “discovered” refer to the date on which the Permittee or a Department representative either, (1) visually observes evidence of a new SWMU or AOC, (2) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment.

VIII.A.5 Contamination Beyond Facility Boundary

The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. [R.61-79.264.100, R.61-79.264.101]

VIII.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

VIII.B.1 Notification

The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional AOCs and/or SWMUs as discovered under Permit Condition VIII.A.4 - Additional SWMUs or AOCs. The notification shall include, at a minimum, a unique identification, the location of the SWMU or AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.).

VIII.B.2 Assessment Report

The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification, an Assessment Report (AR) for each SWMU or AOC identified under Permit Condition VIII.B.1 - Notification. At a minimum, the AR shall provide the following information:

VIII.B.2(a) The unique identification for the SWMU or AOC.

VIII.B.2(b) Location of unit(s) on a topographic map of appropriate scale such as required under R.61-79.270.14(b)(19).

VIII.B.2(c) Designation of type and function of unit(s).

VIII.B.2(d) General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

VIII.B.2(e) Dates that the unit(s) was (were) operated.

VIII.B.2(f) Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents

contained in the wastes.

VIII.B.2(g) All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater, soil, air, surface water, and/or sediment data).

VIII.B.3 Department Determination

The Department or the Permittee shall determine the need for further investigations at the SWMUs or AOCs covered in the AR. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Permit Conditions VIII.D.5 - Department Determination and/or VIII.E - RCRA Facility Investigation (RFI). If the Department determines that further investigation of a SWMU or AOC is required, the Permit will be modified in accordance with R.61-79.270 Subpart D.

VIII.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs or AOCs

VIII.C.1 Notification

The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents at previously identified SWMUs or AOCs during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Permit Condition VIII.A.1 - SWMUs and AOCs Identified by the RCRA Facility Investigation (RFI): VIII.A.2 - SWMUs and AOCs Identified as No Further Action (NFA) At This Time, VIII.A.3 - SWMUs and AOCs That Require Confirmatory Sampling or Permit Condition VIII.A.4 - Additional SWMUs or AOCs. The notification shall include all available information pertaining to the nature of the release (e.g. media affected, hazardous constituents released, magnitude of release, etc.).

VIII.C.2 Plan for Investigation

If the Department or the Permittee determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Permit Condition VIII.D - Confirmatory Sampling (CS) or VIII.E - RCRA Facility Investigation (RFI).

VIII.D. CONFIRMATORY SAMPLING (CS)

VIII.D.1 CS Workplan

The Permittee shall prepare and submit a Confirmatory Sampling (CS) Workplan to the Department within forty-five (45) calendar days of notification by the Department. The CS Workplan must determine any releases from SWMUs or AOCs identified in Permit Conditions VIII.A.1 - SWMUs and AOCs Identified by the RCRA Facility Investigation (RFI) and VIII.A.4 -Additional SWMUs or AOCs or as required by Permit Condition VIII.B.3 - Department Determination or VIII.C.2 - Plan for Investigation. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to determine whether a release has occurred. It should also address applicable requirements and affected media.

VIII.D.2 Approval Required

The CS Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the CS Workplan in the letter approving the CS Workplan or within sixty (60) days if a time frame is not provided. If the Department disapproves the CS Workplan, the Department shall: (1) notify the Permittee in writing of the CS Workplan's deficiencies and specify a due date for submission of a revised CS Workplan; (2) revise the CS Workplan and notify the Permittee of the revisions, or; (3) conditionally approve the CS Workplan and notify the Permittee of the conditions.

VIII.D.3 Implementation

The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.

VIII.D.4 CS Report

The Permittee shall prepare and submit to the Department in accordance with the schedule in the approved CS Workplan a Confirmatory Sampling (CS) Report for SWMUs or AOCs listed in Permit Conditions VIII.A.1 -SWMUs and AOCs Identified by the RCRA Facility Investigation (RFI), VIII.A.3 - SWMUs and AOCs That Require Confirmatory Sampling, and VIII.A.4 - Additional SWMUs or AOCs or as required by Permit Condition VIII.B.3 - Department Determination or VIII.C.2 - Plan for Investigation that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data, and an analysis and summary of the data that supports the above determination.

VIII.D.5 Department Determination

Based on the results of the CS Report, the Department shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Permit Condition VIII.E - RCRA Facility Investigation (RFI). The Department shall notify the Permittee of any no further action decision.

VIII.E. RCRA FACILITY INVESTIGATION (RFI)

VIII.E.1 RFI Workplan

The Permittee shall prepare and submit to the Department within ninety (90) days of notification by the Department a RCRA Facility Investigation (RFI) Workplan(s) for those units identified in Permit Condition VIII.A - Applicability. This Workplan shall be developed to meet the requirements of Permit Condition VIII.E.3 - Required Contents.

VIII.E.2 RFI Workplan for Newly Identified SWMUs and AOCs

The Permittee shall prepare and submit to the Department within ninety (90) calendar days of notification by the Department, a RFI Workplan for those units identified under Permit Conditions VIII.B.3 - Department Determination, VIII.C.2 - Plan for Investigation, or VIII.D.5 - Department Determination. The RFI Workplan(s) shall be developed to meet the requirements of Permit Condition VIII.E.3 - Required Contents.

VIII.E.3 Required Contents

The RFI Workplan(s) shall meet the requirements of Appendix B - RCRA Facility Investigation (RFI) Workplan Outline. The Permittee shall provide sufficient written justification for any omissions or deviations from any requirements of Appendix B - RCRA Facility Investigation (RFI) Workplan Outline. Such omissions or deviations are subject to the approval of the Department.

The RFI Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to air, land, surface water, and groundwater. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (groundwater, surface water, sediment, soil, air or subsurface gas) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Department.

In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with R.61-79.264.101(c).

VIII.E.4 Department Approval

The RFI Workplan(s) must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Department disapproves the RFI Workplan(s), the Department shall: (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan; (2) revise the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan, or; (3) conditionally approve the RFI Workplan and notify the Permittee of the conditions.

VIII.E.5 RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s). The Permittee shall notify the Department at least twenty (20) days prior to any sampling activity.

VIII.E.6 RFI Progress Reports

If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Department with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Department in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

VIII.E.6(a) A description of the portion of the RFI completed;

VIII.E.6(b) Summaries of findings;

VIII.E.6(c) Summaries of any deviations from the approved RFI Workplan during the reporting period;

VIII.E.6(d) Summaries of all contacts with local community public interest groups or Federal or State government;

VIII.E.6(e) Summaries of any problems encountered during the reporting period;

VIII.E.6(f) Actions taken to rectify problems;

VIII.E.6(g) Changes in relevant personnel;

VIII.E.6(h) Projected work for the next reporting period.

VIII.E.6(i) Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

VIII.E.7 RFI Report

The Permittee shall prepare and submit to the Department a RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Workplan(s) submitted under Permit Condition VIII.E.1 - RFI Workplan or Permit Condition VIII.E.2 - RFI Workplan for Newly Identified SWMUs and AOCs. The RFI Report(s) shall be submitted to the Department for review in accordance with the schedule in the approved RFI Workplan(s). Any revised RFI Report(s) shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study (CMS), if necessary.

The RFI Report(s) shall propose a groundwater monitoring and reporting schedule for those SWMUs and/or AOCs at which groundwater contamination has been detected. Routine monitoring will be continued at these units until a remedy selection decision is made by the Department.

VIII.E.8 Department Notification

The Department will review the RFI Report(s) and shall notify the Permittee of the need for further investigation, if necessary; and if appropriate, the need for a CMS to meet the requirements of Permit Condition VIII.G - Corrective Measures Study and R.61-79.264.101.

VIII.F. INTERIM MEASURES (IM)

VIII.F.1 IM Workplan

VIII.F.1(a) Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC that poses a current or potential threat to human health or the environment. The Permittee may submit an IM Workplan for approval prior to notification by the Department. The IM Workplan shall be submitted within thirty (30)

calendar days of notification by the Department and shall include the elements listed in Permit Condition VIII.F.1(b). Interim measures may be conducted concurrently with investigation required under the terms of this Permit. The Permittee shall comply with the reporting requirements of Permit Condition VIII.F.3 - IM Reports.

VIII.F.1(b) The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

VIII.F.1(c) The IM Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Department disapproves the IM Workplan, the Department shall: (1) notify the Permittee in writing of the IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan; (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan, or; (3) conditionally approve the IM Workplan and notify the Permittee of the conditions.

VIII.F.2 IM Implementation

VIII.F.2(a) The Permittee shall implement interim measures in accordance with the approved IM Workplan.

VIII.F.2(b) The Permittee shall give notice to the Department prior to any changes, reductions or additions to the IM Workplan.

VIII.F.2(c) Final approval of corrective action required under R.61-79.264.101 which is achieved through interim measures shall be in accordance with R.61-79.270.41 and Permit Condition VIII.H - Remedy Approval And Permit Modification as a permit modification.

VIII.F.3 IM Reports

VIII.F.3(a) If the time required for completion of interim measures is greater than one year, the Permittee shall provide the Department with progress reports at intervals specified in the approved workplan. The Progress Reports shall contain the following information at a minimum:

VIII.F.3(a)(i) A description of the portion of the interim measures completed;

VIII.F.3(a)(ii) Summaries of findings;

VIII.F.3(a)(iii) Summaries of any deviations from the IM Workplan during the reporting period;

VIII.F.3(a)(iv) Summaries of any problems encountered during the reporting period; and

VIII.F.3(a)(v) Projected work for the next reporting period;

VIII.F.3(a)(vi) Copies of laboratory/monitoring data.

VIII.F.3(b) The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Permit Condition VIII.F - Interim Measures (IM) an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

VIII.F.3(b)(i) A description of interim measures implemented;

VIII.F.3(b)(ii) Summaries of results;

VIII.F.3(b)(iii) Summaries of all problems encountered;

VIII.F.3(b)(iv) Summaries of accomplishments and/or effectiveness of interim measures; and

VIII.F.3(b)(v) Copies of all relevant laboratory/monitoring data, etc. in accordance with Permit Condition I.F.9 - Monitoring and Records.

VIII.G. CORRECTIVE MEASURES STUDY

VIII.G.1 Corrective Measures Study (CMS) Workplan

VIII.G.1(a) The Permittee shall prepare and submit a CMS Workplan for those units requiring a CMS within ninety (90) calendar days of notification by the Department that a CMS is required. This CMS Workplan shall be developed to meet the requirements of Permit Condition VIII.G.1(b). The CMS may be performed concurrent with the RFI if the Department determines that sufficient investigative details are available to allow concurrent action.

VIII.G.1(b) The CMS Workplan shall meet the requirements of APPENDIX C - CORRECTIVE MEASURE STUDY (CMS) OUTLINE, at a minimum. The CMS Workplan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient written justification and documentation for any unit deleted from

the CMS Workplan. Such deletion of a unit is subject to the approval of the Department. The CMS shall be conducted in accordance with the approved CMS Workplan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C - Corrective Measure Study (CMS) Outline. Such omissions or deviations are subject to the approval of the Department. The scope of the CMS Workplan shall include all investigations necessary to ensure compliance with R.61-79.264.101, R.61-79.264.552, R.61-79.264.553 and R.61-79.270.32(b)(2). The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Permit Condition VIII.A.5 - Contamination Beyond Facility Boundary.

VIII.G.1(c) The Department will either approve or disapprove the CMS Workplan. If the Department disapproves the CMS Workplan, the Department shall; (1) notify the Permittee in writing of the CMS Workplan's deficiencies and specify a due date for submittal of a revised CMS Workplan; (2) revise the CMS Workplan and notify the Permittee of the revisions, or; (3) conditionally approve the CMS Workplan and notify the Permittee of the conditions.

VIII.G.2 Corrective Measures Study Implementation

The Permittee shall implement the Corrective Measures Study according to the schedules specified in the CMS Workplan, or no later than fifteen (15) calendar days after the Permittee has received written approval from the Department for the CMS Workplan. The CMS shall be conducted in accordance with the approved CMS Workplan.

VIII.G.3 CMS Report

VIII.G.3(a) The Permittee shall prepare and submit to the Department a CMS Report for the study conducted pursuant to the approved CMS Workplan. The CMS Report shall be submitted to the Department in accordance with the schedule in the approved CMS Workplan. Any revised CMS Report(s) shall be submitted to the Department within thirty (30) days of receipt of the Department's comments. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Workplan. The CMS Report must contain adequate information to support the Department's decision on the recommended remedy, described under Permit Condition VIII.H - Remedy Approval and Permit Modification.

VIII.G.3(b) If the Department determines that the CMS Report does not fully satisfy the

information requirements specified under Permit Condition VIII.G.3(a), the Department may disapprove the CMS Report. If the Department disapproves the CMS Report, the Department shall notify the Permittee in writing of the deficiencies in the CMS Report and specify a due date for submittal of a revised CMS Report. The Department will notify the Permittee of any no further action decision.

VIII.G.3(c) As specified under Permit Condition VIII.G.3(b) based on preliminary results and the CMS Report, the Department may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

VIII.H. REMEDY APPROVAL AND PERMIT MODIFICATION

VIII.H.1 Remedy Selection

The Department shall select a remedy from the remedial alternatives evaluated in the CMS. The selection will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance. The selected remedy may include any interim measures implemented to date.

VIII.H.2 Statement of Basis

Upon approval of the CMS Report or other Department decision [i.e. NFA], the Permittee shall prepare a draft Statement of Basis that provides a summary and justification of the selected remedy. The Statement of Basis should be written following *EPA guidance "Guidance on RCRA Corrective Action Decision Documents: The Statement of Basis, Final Decision and Response to Comments," February 1991, EPA/540/G-91/011*, (or most recent version) or other Department approved guidance, and should include information on the proposed remedy, facility background, exposure pathways, cleanup goals, the scope of the corrective action, the remedial alternatives considered, an evaluation of those alternatives, and public participation. The Statement of Basis shall be submitted to the Department in draft form within the time frame specified in the letter from the Department that notifies the Permittee that the CMS Report is approved or within thirty (30) days if a time frame is not provided. The Department shall notify the Permittee of deficiencies and specify a due date for submittal of a revised Statement of Basis or revise and finalize the Statement of Basis.

VIII.H.3 Land Use Controls

For SWMUs or AOCs listed in Appendix C of the FFA, when corrective measures incorporate land use controls as part of the selected remedy, the Land Use Control

Assurance Plan in APPENDIX E - LAND USE CONTROL MANAGEMENT PLAN will be followed.

VIII.H.4 Permit Modification

Pursuant to R.61-79.270.41, a permit modification will be initiated by the Department after recommendation of a remedy under Permit Condition VIII.H.1 - Remedy Selection. This modification will serve to incorporate a final remedy into this Permit.

VIII.I. CORRECTIVE MEASURES IMPLEMENTATION (CMI)

VIII.I.1 CMI Workplan

Within thirty (30) days of the effective date of the permit modification for the remedy selection, unless otherwise agreed by the Department, the Permittee shall prepare and submit a Corrective Measures Implementation (CMI) Workplan for the SWMUs or AOCs Requiring Corrective Action with Land Use Controls (LUCs) listed in Appendix VIII-A. At a minimum, this workplan shall include the following:

VIII.I.1(a) A description of the conceptual design, technical features (e.g. Plans and Specifications) and a Construction Plan for the selected remedy(ies) to achieve media cleanup standards protective of human health and the environment, controlling the source(s) of release, and complying with standards for the management of wastes and any remedial residues.

VIII.I.1(b) A proposed schedule that takes into account all phases of the CMI. The schedule should also include the submittal of documents to support the CMI (e.g. Operation and Maintenance Plan, Construction Completion Report, etc.) as described in Permit Conditions VIII.I.2 - Operation and Maintenance Plan and VIII.I.4 - Construction Completion Report.

VIII.I.1(c) Requirements for removal and decontamination of units, equipment, devices or structures that will be used to implement the remedy(ies).

VIII.I.2 Operation and Maintenance Plan

An Operation and Maintenance Plan (O&MP) shall be submitted to the Department in accordance with the schedule required by Permit Condition VIII.I.1(b). The O&MP, at a minimum, shall include the following:

VIII.I.2(a) A system description, startup procedures, operation and maintenance procedures and schedule of inspection and maintenance;

VIII.I.2(b) Waste management practices, sampling and analysis required for operation and contingency procedures;

VIII.I.2(c) A description of the Corrective Measure(s) completion criteria and the method to be used to show when the criteria are met; and

VIII.I.2(d) For remedies with Land Use Controls, the Operation and Maintenance Plan should include the requirements of Permit Condition VIII.I.5 - Remedy with Land Use Controls.

VIII.I.3 Department Approval

All Plans required for the CMI phase, required by Permit Condition VIII.I - Corrective Measures Implementation (CMI) must be approved, in writing, by the Department prior to implementation, in accordance with Permit Condition VIII.K.1 - Submittal Requirements.

VIII.I.4 Construction Completion Report

A Construction Completion Report (CCR) shall be submitted to the Department, in accordance with the schedule required by Permit Condition VIII.I.1(b) that demonstrates the completion of the remedy construction in accordance with approved plans and specifications. The CCR shall be submitted when all operational tests have been completed. Any necessary documentation required by the Department shall be included in this report.

VIII.I.5 Remedy with Land Use Controls

The SWMUs and AOCs for which land use controls are selected as an integral part of the final remedy are listed in Appendix VIII-A. When corrective measures incorporate land use controls as part of the selected remedy, the following information should be provided:

VIII.I.5(a) The name, address and phone number of the person to contact about the SWMU or AOC;

VIII.I.5(b) Any necessary security provisions consistent with R.61-79.264.117(b) to prevent unauthorized entry and/or use of the waste unit;

VIII.I.5(c) A description of measures to protect the integrity of any installed engineering control(s) and associated features considered as part of the selected remedy, for the period that has to be maintained;

VIII.I.5(d) Planned maintenance and monitoring activities, and frequencies to ensure the security provisions are maintained;

VIII.I.5(e) An inspection checklist describing the land use control elements to be inspected, the frequency of inspection, and the potential problems that could be encountered. The checklist shall contain an area where the

inspector may enter his/her name, the date of inspection, and the date upon which any problems encountered are remediated;

VIII.I.5(f) Procedure(s) to follow when a determination is made that the land use control(s) are not effective and require modification;

VIII.I.5(g) The mechanism by which a notification will be recorded on the deed for the facility property, or some other instrument which is normally examined during title search, that will in perpetuity notify any potential future purchaser of the property, that the property had been used for waste management and disposal activities and that restrictions exist precluding a residential use of the land. The need for a deed restriction may be reevaluated upon the transfer of ownership or control; and

VIII.I.5(h) The mechanism by which other pertinent agencies (State or Federal) will be given notice of restrictions placed on the use of the property, that is affecting or may affect in the future, areas under the control of other State or Federal agencies.

VIII.I.5(i) The above information is outlined in detail in Appendix E - Land Use Control Management Plan.

VIII.I.6 CMI Progress Reports

If the time frame required to complete corrective measures implementation is greater than one hundred and eighty (180) days, the Permittee shall provide the Department with semi-annual Corrective Measures Implementation Progress Reports (180 day intervals) beginning from the date the CMI Workplan is approved by the Department, until the Remedy Completion Report is approved by the Department. The time frame stated is effective unless otherwise agreed to by the Department. The CMI Progress Reports shall contain at least the following information:

VIII.I.6(a) A description of the portion of the CMI Workplan completed (e.g. sampling events, operations, volumes removed/treated, wastes generated, etc.);

VIII.I.6(b) A summary of system performance/compliance and progress toward achieving cleanup goals;

VIII.I.6(c) A summary of any deviations from the approved CMI Workplans during the reporting period;

VIII.I.6(d) Summaries of all contacts with local community and public interest groups or State and Federal Government;

VIII.I.6(e) A summary of any problems or potential problems encountered during the reporting period;

VIII.I.6(f) A summary of actions taken to rectify the problems;

VIII.I.6(g) Any changes in relevant personnel; and

VIII.I.6(h) Projected work for the next reporting period.

VIII.I.7 Remedy Completion Report

VIII.I.7(a) Within ninety (90) days of completion of CMI phase, unless otherwise agreed by the Department, the Permittee shall submit a Remedy Completion Report (RCR), including certification of completion of the corrective measures activities. The RCR shall summarize the activities and results from the entire period of Corrective Measures Implementation. The RCR shall also demonstrate compliance with all media cleanup goals and meet the corrective measures completion criteria in accordance with Permit Condition VIII.I.2(c). Approval by the Department of the final RCR constitutes remedy completion.

VIII.I.7(b) For corrective measures involving the cleanup of groundwater, the Permittee must demonstrate that the concentrations of the constituents of concern remain at or below cleanup levels for three (3) consecutive years after the corrective measures have been terminated. The time frame stated is effective unless otherwise agreed to by the Department.

VIII.J. MODIFICATION OF THE CORRECTIVE ACTION COMPLIANCE SCHEDULE

VIII.J.1 Initiation

If at any time the Department determines that modification of the Corrective Action Compliance Schedule is necessary, the Department may initiate a modification to the Compliance Schedule (Appendix VIII-B), in accordance with the applicable provisions of R.61-79.270.

VIII.J.2 Permittee Requested Modification

The Permittee may request a permit modification in accordance with R.61-79.270 to change the Compliance Schedule.

VIII.K. WORKPLAN AND REPORT REQUIREMENTS

VIII.K.1 Submittal Requirements

All reports submitted to the Department should be in one printed copy and in one searchable electronic format.

VIII.K.2 Signatory Requirements

All reports shall be signed and certified in accordance with R.61-79.270.11.

VIII.K.3 Department Approval

All workplans, reports and schedules shall be subject to approval by the Department prior to implementation to assure that such workplans, reports and schedules are consistent with the requirements of this Permit and with applicable regulations and guidance. The Permittee shall revise all submittals and schedules as specified by the Department. Upon approval, the Permittee shall implement all workplans and schedules as written.

VIII.K.4 Extensions for Submittals

All workplans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.

VIII.K.5 Amendment of the Workplan(s)

If the Permittee at any time determines that the Assessment Report information required under Permit Condition VIII.B.2 - Assessment Report, the CS Workplan under Permit Condition VIII.D - Confirmatory Sampling (CS), or RFI Workplan(s) required under Permit Condition VIII.E - RCRA Facility Investigation (RFI), no longer satisfy the requirements of R.61-79.264.101 or this Permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended Assessment Report and/or Workplan(s) to the Department within ninety (90) calendar days of such determination.

VIII.L. APPROVAL/DISAPPROVAL OF SUBMITTALS

The Department will review the workplans, reports, schedules, and other documents ("submittals") which require the Department's approval in accordance with the conditions of this Permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis thereof.

Appendix VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
D-Area Burning/Rubble Pits (431-D and 431-1D)	The D-Area Burning/Rubble Pits shall be maintained by the Permittee under institutional controls as documented in the approved (Rev1.3;8/28/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the D-Area Burning/Rubble Pits.
F-Area Burning /Rubble Pits (231-F, 231-1F and 231-2F)	The F-Area Burning/Rubble Pits shall be maintained by the Permittee under the institutional controls as documented in the approved (Rev.1.2;8/29/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the F-Area Burning/Rubble Pits.
Silverton Road Waste Site (731-3A)	The Silverton Road Waste Site shall be maintained by the Permittee under the institutional controls as documented in the approved (Rev.1.2;8/29/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the Silverton Road Waste Site.
Grace Road Site (631-22G)	The Grace Road Site requires no further action by the Permittee as documented in the approved (Rev.1;8/29/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the Grace Road Site.
Gunsite 113 Access Road (631-24G)	The Gunsite 113 Access Road requires no further action by the Permittee as documented in the approved (Rev.1;8/29/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the Gunsite 113 Access Road.
Gunsite 720 Rubble Pit (631-16G)	The Gunsite 720 Rubble Pit requires no further action by the Permittee as documented in the approved (Rev.1;8/29/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the Gunsite 720 Rubble Pit.
Old F-Area Seepage Basin (904-49G)	The Old F-Area Seepage Basin shall be remediated by the Permittee as documented in the approved (Rev.1.1;3/97) Statement of Basis/Proposed Plan and the effective Record of Decision for the Old F-Area Seepage Basin.
Central Shops Burning/Rubble Pit (631-6G)	The Central Shops Burning/Rubble Pit shall be maintained as described in the approved (Rev.1;11/1/96) Statement of Basis/Proposed Plan and the effective Record of Decision for the Central Shops Burning/Rubble Pit.

Appendix VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
L-Area Oil & Chemical Basin and L-Area Acid/Caustic Basin (904-83G and 904-77G)	The L-Area Oil & Chemical Basin shall be remediated and maintained under institutional control; the associated pipeline shall be grouted, excavated in sections and placed in the basin for stabilization; and no action is required for the L-Area Acid/Caustic Basin, its associated pipeline, the soils surrounding the L-Area Oil Chemical Basin and the soils surrounding its associated pipeline by the Permittee as documented in the approved (Rev.1;4/1/97) Statement of Basis/Proposed Plan and the effective Record of Decision for the Larea Oil & Chemical Basin and the L-Area Acid/Caustic Basin.
Fire Department Hose Training Facility (904-113G)	The Fire Department Hose Training Facility requires no action by the Permittee as documented in the approved (Rev.1;11/17/97) Statement of Basis/Proposed Plan and the effective Record of Decision for the Fire Department Hose Training Facility.
F-Area Retention Basin Operable Unit (281-3F)	The F-Area Retention Basin Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1.2;1/16/98) and the effective Record of Decision for the F-Area Retention Basin Operable Unit.
Motor Shops Seepage Basin (716-A)	The Motor Shops Seepage Basin requires no further action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.0;12/97) and the effective Record of Decision for the Motor Shops Seepage Basin.
D-Area Oil Seepage Basin (DAOSB) (631-G)	The D-Area Oil Seepage Basin requires no further action for the soils and remediation with institutional controls of the groundwater by the Permittee as documented in the approved (Rev.1.2;4/24/98) Statement of Basis/Proposed Plan and the effective Record of Decision for the D-Area Oil Seepage Basin.
C-, F-, & P-Area Coal Pile Runoff Basins (189-C,289-F, & 189-P)	The C-, F-, and P-Area Coal Pile Runoff Basins require no further action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.0;11/97) and the effective Record of Decision for the C-, F-, K-, and P-Area Coal Pile Runoff Basins.

Appendix VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
K-Area Coal Pile Runoff Basin (189-K)	The K-Area Coal Pile Runoff Basin requires groundwater monitoring and reporting by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.0;11/97) and the effective Record of Decision for the C-, F-, K-, and P-Area Coal Pile Runoff Basins. The Permittee shall submit a groundwater corrective measures implementation plan within (90) days after notification from the Department that corrective action is necessary. Such notification will follow the second consecutive exceedance of MCL by any analyte in the groundwater monitoring program. Groundwater monitoring and reporting will continue until the Department approves a request for cessation of the monitoring program.
Savannah River Laboratory (SRL) Seepage Basins (904-53G1,-53G2, -54G and -55G)	The Savannah River Laboratory Seepage Basins shall be remediated and maintained under institutional control by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1.1;1/18/99) and the effective Record of Decision for the Savannah River Laboratory Seepage Basins.
Ford Building Waste Unit (643-11G)	The Ford Building Waste Unit requires no further action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1;10/29/98) and the effective Record of Decision for the Ford Building Waste Unit.
K-Area Burning/Rubble Pit (131K-K) and Rubble Pile (631-20G) Operable Unit	The K-Area Burning/Rubble Pit and Rubble Pile Operable Unit shall be remediated and maintained under institutional control by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1.2;1/28/00) and the effective Record of Decision.
West of SREL "Georgia Fields" (631-19G) Site	The West of SREL "Georgia Fields" Site requires no action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1.0;3/15/00) and the effective Record of Decision for the West of SREL "Georgia Fields" Site.
Ford Building Seepage Basin (904-91G)	The Ford Building Seepage Basin shall be remediated and maintained under institutional control by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 0;1/11/01) and the effective Record of Decision for the Ford Building Seepage Basin.

Appendix VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
Old Solvent Tanks (650-01E - 22E)	The Old Solvent Tanks located in the Old Radioactive Waste Burial Ground shall be remediated by the Permittee as documented in the approved Statement of Basis/Interim Action Proposed Plan (Rev. 1.1; approved March 26, 2001) and the effective Interim Record of Decision for the Old Solvent Tanks located in the Old Radioactive Waste Burial Ground.
M-Area West, 631-21G	The M-Area West (631-21G) Operable Unit requires no further action by the Permittee as documented in the approved Statement of Basis, Proposed Plan (Rev 1; June 1995) and the effective Record of Decision (Rev 0; August 1995) for the operable unit.
Burma Road Rubble Pit, 231-4F	The Burma Road Rubble Pit (231-4F) Operable Unit requires no further action by the Permittee as documented in the approved Statement of Basis, Proposed Plan (Rev 1; November 1995) and the effective Record of Decision (Rev 1; April 1996) for the Burma Road Rubble Pit Operable Unit and subsequent Explanation of Significant Difference (Rev 1; March 1999).
Miscellaneous Chemical Basin/ Metals Burning Pit (731-4A, -5A)	The Miscellaneous Chemical Basin/Metals Burning Pit source unit shall be remediated via soil excavation, offsite disposal, clean backfill, then maintained under institutional control and the vadose zone unit shall be remediated by soil vapor extraction by the Permittee as documented in the approved Interim Action Proposed Plan (Revision.1, January 1999) and the effective Interim Record of Decision for the Miscellaneous Chemical Basin/Metals Burning Pit (Revision.1.1, December 1999). This unit combined with below; see final operable unit remedy below.
A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A)	The A-Area Burning/Rubble Pits and Rubble Pit source unit shall be remediated via a one-foot thick soil cover, then maintained under institutional control by the Permittee as documented in the approved Interim Action Proposed Plan (Revision.1.1, November 1999) and the effective Interim Record of Decision for the A-Area Burning/Rubble Pits and Rubble Pit (Revision.1, April 2000). This unit combined with above; see final operable unit remedy below.

Appendix VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
A-Area Burning/Rubble Pits (731-A, -1A) and Rubble Pit (731-2A) (ABRP) and the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A, -5A) (MCB/MBP) Operable Unit	The A-Area Burning/Rubble Pits and Rubble Pit is divided into the following subunits: Burning/Rubble Pits, Rubble Pit, Potential Pit, Depressional Area, Ash Scatter Area/Ditch, A-Area Ash Pile 788-2A, and the Trench Area. The Miscellaneous Chemical Basin/Metals Burning Pit source unit is divided into two subunits: Miscellaneous Chemical Basin and the Metals Burning Pit. No action was required at the Burning/Rubble Pits; Potential Pit; Depressional Area; and Ash Scatter Area/Ditch. A soil cover was placed over the Rubble Pit and shall be placed over the A-Area Ash Pile 788-2A. The Trench Area and the Miscellaneous Chemical Basin vadose zone shall be remediated via soil vapor extraction. The surface soil at the Miscellaneous Chemical Basin and the Metals Burning Pit was excavated, disposed offsite, and backfilled. The ABRP/MCB/MBP OU shall also be maintained under institutional controls by the Permittee. These remedial actions are documented in the approved Statement of Basis/Proposed Plan (Revision 1.1, April 2006) and the effective Record of Decision for the A-Area Burning/Rubble Pits and Rubble Pit and Miscellaneous Chemical Basin/Metals Burning Pit.
Central Shops Sewage Sludge Lagoon (080-24G)	The Central Shops Sewage Sludge Lagoon requires No Action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 0; 7/31/01) and the effective Record of Decision for the Central Shops Sewage Sludge Lagoon.
General Separations Area Consolidation Unit (NBN)	The General Separations Area Consolidation Unit (NBN), consisting of the Old Radioactive Waste Burial Ground (643-E), the H-Area Retention Basin (281-3H), the HP-52 Ponds (NBN) and Warner's Pond (685-23G) Operable Unit shall be remediated and maintained under institutional control by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1; 6/3/02) and the effective Record of Decision for the General Separations Area Consolidation Unit (NBN). The H-Area Inactive Process Sewer Line will be remediated under an approved RCRA Closure Plan.

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
L-Area Burning/Rubble Pit (131-L), Gas Cylinder Disposal Facility (131-2L) and L-Area Rubble Pile (131-3L)	The L-Area Burning/Rubble Pit and Gas Cylinder Disposal Facility sub-units of the Operable Unit require no further action; the groundwater and the L-Area Ruble Pile sub-unit shall be remediated and maintained under institutional control by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1.1;7/01) and the effective Record of Decision for the L-Area Burning/Rubble Pit, Gas Cylinder Disposal Facility and the L-Area Rubble Pile. The Permittee will notify US EPA and SCDHEC* of a confirmed exceedance of the maximum concentration limit (MCL) for carbon tetrachloride in a compliance boundary well and within 90 days of the confirmed exceedance, submit a plan for corrective action.
P-Area Burning/Rubble Pit (131-P)	The P-Area Burning/Rubble Pit shall be remediated by soil vapor extraction, an engineered cover system, natural biodegradation and maintained under institutional controls while the groundwater requires continued monitoring, reporting and institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1; 2/8/02) and the effective Record of Decision for the P-Area Burning/Rubble Pit.
R-Area Acid/Caustic Basin (904-77G)	The R-Area Acid/Caustic Basin (904-77G) requires No Action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 0; 12/11/01) and the effective Record of Decision for the R-Area Acid/Caustic Basin.
A-Area Miscellaneous Rubble Pile Operable Unit (731-6A)	The A-Area Miscellaneous Rubble Pile source unit is divided into three subunits: Piles Area, Ash Area and Trenches Area. The Piles Area source unit shall be remediated via hot spot removal and disposal, the Ash Area source unit shall be remediated via institutional controls; and the Trenches Area source unit shall be remediated via active soil vapor extraction and a one-foot thick soil cover, then maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1;9/13/01) and the effective Record of Decision (Rev.1.3, 4/03) which includes the Explanation of Significant Changes for the A-Area Miscellaneous Rubble Pile Operable Unit.

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
L-Area Hot Shop (Including CML-003 Sandblast Area) Operable Unit	The L-Area Hot Shop Shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1.2; 10/10/02) and the effective Record of Decision for the L-Area Hot Shop (Including CML-003 Sandblast Area) Operable Unit.
Road A Chemical Basin (904-111G) Operable Unit	The Road A Chemical Basin Operable Unit requires no action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev.1;12/02) and the effective Record of Decision for the Road A Chemical Basin Operable Unit.
Central Shops Burning/Rubble Pits Operable Unit (631-1G and 631-3G)	The Central Shops Burning/Rubble Pits requires Institutional Controls (in conjunction with improved stormwater management) by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1.1; 1/23/03) and the effective Record of Decision for the Central Shops Burning/Rubble Pit.
TNX Area Operable Unit	The TNX Area Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1; 12/02) and the effective Record of Decision for the TNX Area Operable Unit.
SRL Oil Test Site (080-16G) Operable Unit	The SRL Oil Test Site requires no action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1; 12/03) and the effective Record of Decision for the SRL Oil Test Site.
R-Area Burning/Rubble Pits (131R and 131-1R) and Rubble Pile (631-25G)	The R-Area Burning/Rubble Pits shall be remediated and maintained under institutional controls and R-Area Rubble Pile shall be remediated by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1.1, 11/03) and the effective Record of Decision for the R-Area Burning/Rubble Pits and Rubble Pile.
D-Area Expanded Operable Unit	The D-Area Expanded Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1, 1/04) and the effective Record of Decision for the D-Area Expanded Operable Unit.

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
Heavy Equipment Wash Basin and Central Shops Burning/Rubble Pit (631-5G) Operable Unit	The Heavy Equipment Wash Basin Overflow Discharge Area and Central Shops Burning/Rubble Pit require no action and the Heavy Equipment Wash Basin shall be maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1.1; 2/04) and the effective Record of Decision for the Heavy Equipment Wash Basin and Central Shops Burning/Rubble Pit.
Chemical, Metals and Pesticides Pits (080- 170G, -171G, -180G, -181G, -182G, -183G and -190G) Operable Unit	The Chemicals, Metals and Pesticides Pits Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1; 8/04) and the effective Record of Decision for the Chemicals, Metals, and Pesticides Pits Operable Unit.
T-Area Operable Unit	The T-Area Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1.1;5/05) and the effective Record of Decision for the T-Area Operable Unit.
K-Area Sludge Land Application Site (761-4G) and Par Pond Sludge Land Application Site (761-5G) Operable Unit	The K-Area Sludge Land Application Site and Par Pond Sludge Land Application Site Operable Unit requires No Action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1; 11/05) and the effective Record of Decision (rev.1; 3/06) for the K-Area Sludge Land Application Site and the Par Pond Sludge Land Application Site Operable Unit.
M-Area Inactive Process Sewer Lines Operable Unit (081-M)	The M-Area Inactive Process Sewer Lines (MIPSL) Operable Unit shall be remediated and maintained under institutional controls by the Permittee. Soil vapor extraction enhanced with soil fracturing shall be implemented and all manholes shall be grouted to prevent access. These remedial actions are documented in the approved Statement of Basis/Proposed Plan (rev.1.1; 4/06) and the effective Record of Decision for the M-Area Inactive Process Sewer Lines Operable Unit.

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
L-Area Southern Groundwater Operable Unit (NBN)	The L-Area Southern Groundwater (LASG) Operable Unit shall be remediated by Monitored Natural Attenuation with long-term monitoring of the ground and surface waters and maintained under institutional controls by the Permittee. This remedial action is documented in the approved Statement of Basis/Proposed Plan (rev. 1; 7/06) and the effective Record of Decision for the L-Area Southern Groundwater Operable Unit.
C-Area Burning/Rubble Pit (131-C) Operable Unit	The C-Area Burning/Rubble Pit (CBRP) Operable Unit shall be remediated and maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1; 7/07) and the effective Record of Decision for the C-Area Burning/Rubble Pit Operable Unit.
M-Area Operable Unit	The M Area Operable Unit (MAOU) shall be remediated via passive soil vapor extraction (SVE) in areas where volatile organic compounds (VOCs) are present in the vadose zone at concentrations that may impact groundwater above maximum contaminant levels (MCLs) at Building Slabs 313-M, 320-M, and 321-M. Passive SVE will also be implemented with the stockpiled soils (< 50 mg/kg) from the early actions at Building Slabs 320-M and 321-M. The SVE system at the early action location may include an infiltration/vapor barrier to enhance barometric pumping and to impede groundwater migration. The MAOU shall also be maintained under institutional controls, including grouting of the manholes, by the Permittee. These remedial actions are documented in the approved Statement of Basis/Proposed Plan (rev. 1, February 2008), the effective Record of Decision for the MAOU and the subsequent Explanation of Significant Difference (July 2009).

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
Early Construction and Operational Disposal Site (ECODS) L-1, N-2, P-2 and R-1A, -1B, - 1C Operable Unit (formerly Site Evaluation Areas)	The Early Construction and Operational Disposal Site (ECODS) L-1, N-2, P-2 and R-1A, -1B, -1C shall be maintained under institutional controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (Rev. 1.2, 05/09) and the effective Record of Decision (rev. 1, 3/2010) for the ECODS.
P Area Operable Unit	The P Area Operable Unit shall be maintained under land use controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1.1, 12/09) and the effective Record of Decision (rev.1, 4/2010) for the P Area Operable Unit.
Gunsite 218 Rubble Pile (631-23G)	The Gunsite 218 Rubble Pile requires no action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1; 12/09) and the effective Record of Decision (rev. 1, 5/10) for the Gunsite 218 Rubble Pile.
R-Area Operable Unit	The R-Area Operable Unit shall be remediated by Monitored Natural Attenuation and maintained under Land Use Controls by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1; May 2010) and the effective Record of Decision (rev. 1; December 2010) for the R-Area Operable Unit.
L-Area Northern Groundwater Operable Unit	The L-Area Northern Groundwater Operable Unit requires No Action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev.1; October 2010) and the effective Record of Decision (rev. 1;May 2011) for the L-Area Northern Groundwater Operable Unit.
Gunsite 012 Operable Unit	The Gunsite 012 Operable Unit includes three waste units: the Gunsite 012 Rubble Pile, the Rubble Pile Across from the Gunsite 012 and the Early Construction and Operational Disposal Site (ECODS) G-3. The Gunsite 012 Rubble Pile requires Land Use Controls, the Rubble Pile Across from the Gunsite 012 requires No Action and the ECODS G-3 requires No Action by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1.1; November 2010) and the effective Record of Decision (rev.1; March 2011) for the Gunsite 012 Operable Unit.

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
D-Area Operable Unit (DAOU)	The D-Area Operable Unit shall be maintained under a combination of No Action and Land Use Controls by the Permittee as documented in the approved: • Statement of Basis/Proposed Plan (Rev. 1.1, June 2010) • Early Action Record of Decision (Rev. 1.2, July 2011) for the D-Area Operable Unit • Early Action Statement of Basis/Proposed Plan (Revision 1, December 2019) (for 489-D Coal Pile Runoff Basin (Southern 75%), the 488-1D Ash Basin, 488-2D Ash Basin, and the 488-4D Ash Landfill subunits only) • Second Early Action Record of Decision (Revision 1, July 2020) (for 489-D Coal Pile Runoff Basin (Southern 75%), the 488-1D Ash Basin, 488-2D Ash Basin, and the 488-4D Ash Landfill subunits only)
B-Area Operable Unit (BAOU)	The ECODS B-3 & B-5 subunit of the B-Area Operable Unit Requires No Further Action and the Heavy Water Components Test Reactor subunit shall be maintained under Land Use Controls with Groundwater Monitoring by the Permittee as documented in the approved Statement of Basis/Proposed Plan (rev. 1; 6/12) and the effective Record of Decision for the B-Area Operable Unit (rev.1; 2/13).
C-Area Operable Unit (CAOU)	The C-Area Operable Unit shall be maintained under a combination of No Action and Land Use Controls by the Permittee as documented in the approved Early Action Statement of Basis/Proposed Plan (rev. 1, August 2014) and the effective Early Action Record of Decision (rev. 1, May 2015) for the C-Area Operable Unit.
Wetland Area at Dunbarton Bay (WADB) in Support of Steel Creek Integrator Operable Unit (IOU)	The Wetland Area at Dunbarton Bay shall be remediated by the Permittee by: partial excavation of ash and contaminated soil media; transportation of the waste offsite and implementing Land Use Controls as documented in the approved Statement of Basis/Proposed Plan (rev. 1; 9/13) and the effective Record of Decision for the Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (SRNS-RP-2013-00730 Rev. 1, April 2018) and the Explanation of Significant Difference for the Revision 1 Record of Decision (SRNS-RP-2022-00982, April 2023).

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION

Solid Waste Management Unit	Remedy Selection
G-Area Oil Seepage Basin (GOSB) (761-13G) Operable Unit	The Basin Interior subunit of the G-Area Oil Seepage Basin (GOSB) Operable Unit (OU) shall be remediated by dewatering, backfilling the basin to natural grade with clean soil, establishing a vegetative cover and managing the surface water. The remaining three subunits require no action. The Permittee shall remediate the GOSB as documented in the approved Statement of Basis/Proposed Plan (SRNS-RP-2018-00460 Rev. 1, October 2018) and the effective Record of Decision for the GOSB OU (SRNS – RP-2018-01050 Rev. 1, April 2019).
Early Construction and Operational Disposal Site N1 (NBN), Central Shops Scrap Lumber Pile (631-2G), and Building 690-N, Process Heat Exchanger Repair Facility (aka Ford Building) Operable Unit	The subunits shall be remediated under a combination of Land Use Controls, and Excavation and Disposal by the Permittee as documented in the approved Statement of Basis/Proposed Plan for the Early Construction and Operational Disposal Site (N-1) (NBN) Central Shops Scrap Lumber Pile (631-2G). and Building 690-N, Process Heat Exchanger Repair Facility (aka Ford Building) Operable Unit (SRNS-RP-2022-00202, Rev. 1, December 2022) and the effective Record of Decision for the Early Construction and Operational Disposal Site (N-1) (NBN) Central Shops Scrap Lumber Pile (631-2G). and Building 690-N, Process Heat Exchanger Repair Facility (aka Ford Building) Operable Unit) (SRNS-RP-2022-01284, Rev. 1, June 2023).

APPENDIX VIII-A

SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION – TANK FARM

Solid Waste Management Unit	Remedy Selection
F-Area Tank Farm (FTF) Waste Tanks 17 & 20	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Interim Action Statement of Basis/Proposed Plan (rev. 1; 5/12) and the effective Interim Action Record of Decision for the F-Area Tank Farm, Waste Tanks 17 and 20 (rev. 1; 1/13). An Explanation of Significant Difference will be issued to add additional tanks and ancillary structures as they are removed from service.
F-Area Tank Farm (FTF) Waste Tanks 18 & 19	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Explanation of Significant Difference for Incorporating Tanks 18 and 19 into the Rev. 1 Interim Action Record of Decision for the F-Area Tank Farm, Waste Tanks 17 and 20 (Rev.1.1; 7/13).
F-Area Tank Farm (FTF) Waste Tanks 5 & 6	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Explanation of Significant Difference for Incorporating Tanks 5 and 6 into the Rev. 1 Interim Action Record of Decision for the F-Area Tank Farm, Waste Tanks 17 and 20 (Rev.1; 6/14).

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SOLID WASTE MANAGEMENT UNIT REMEDY SELECTION – TANK FARM	
Solid Waste Management Unit	**Remedy Selection**
H-Area Tank Farm (HTF) Waste Tank 16	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Interim Action Statement of Basis/Proposed Plan (rev.1; 12/15) and the effective Interim Action Record of Decision for the H-Area Tank Farm, Waste Tank 16 (Rev.1, July 2016). An Explanation of Significant Difference will be issued to add additional tanks and ancillary structures as they are removed from service.
H-Area Tank Farm (HTF) Waste Tank 12	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Explanation of Significant Difference for Incorporating Tank 12 into the Rev. 1 Interim Action Record of Decision for the H-Area Tank Farm, Waste Tank 16 (Rev.0, December 2016).
F-Area Tank Farm (FTF) F-Area Diversion Box (FDB) 5 and 6	The liquid waste tanks and ancillary structures that have been removed from service under the Industrial Wastewater General Closure Plan and tank-system-specific Closure Modules shall be maintained by conducting annual visible engineered barrier inspections and maintenance as documented in the approved Explanation of Significant Difference for Incorporating F-Area Diversion Boxes 5 and 6 into the Rev. 1 Interim Action Record of Decision for the F-Area Tank Farm, Waste Tanks 17 and 20 (SRMC-CWDA-2023-00006, Redline Rev.1; June 2023).

* Under state law, the South Carolina Department of Health and Environmental Control (DHEC) became two separate agencies on July 1, 2024. The new agency regulating the environment is called the South Carolina Department of Environmental Services (SCDES).

Appendix VIII-B

Corrective Action Compliance Schedule

Permit Condition	Event	Due Date
VIII.B.1	Notification of Newly Identified SWMUs and AOCs	Within fifteen (15) days of discovery.
VIII.B.2	Assessment Report	Within ninety (90) days of notification
VIII.C.1	Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs	Within fifteen (15) days of discovery.
VIII.D.1	Confirmatory Sampling Workplan	Within forty-five (45) days of the effective date of this Permit.
VIII.D.3	Implementation of Confirmatory Sampling Workplan	In accordance with the Department's approval letter for the CS Workplan.
VIII.D.4	Confirmatory Sampling Report	In accordance with the approved CS Workplan.
VIII.E.1	RFI Workplan for SWMU(s) and AOC(s) Identified under Permit Condition VIII.A.1	Within ninety (90) days of the notification by the Department.
VIII.E.2	RFI Workplan for Newly Identified SWMU(s) and AOC(s)	Within ninety (90) days after receipt of notification by the Department of which SWMUs or AOCs require an RFI.

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Corrective Action Compliance Schedule

VIII.E.5	Implementation of RFI Workplan	In accordance with the Department- approved RFI Workplan.
VIII.E.5	Notification of Sampling Activities	At least twenty (20) days prior to any RFI sampling activity.
VIII.E.6	RFI Progress Reports	Quarterly, beginning ninety (90) days from the start date specified by the Department[1]
VIII.E.7	RFI Report	In accordance with the approved RFI Workplan.
VIII.E.7	Revised RFI Report	Within thirty (30) days of receipt of the Department's comments on the RFI Report.
VIII.F.1(a)	Interim Measures (IM) Workplan	Within thirty (30) days of notification by the Department.
VIII.F.2	Implementation of IM Workplan	In accordance with the Department - approved IM Workplan.
VIII.F.3(a)	Interim Measures Progress Reports	In accordance with the approved IM Workplan.[2]
VIII.F.3(b)	Interim Measures Report	Within ninety (90) days of completion.
VIII.G.1(a)	CMS Workplan	Within ninety (90) days of notification by the Department that a CMS is required.

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Corrective Action Compliance Schedule

VIII.G.2	Implementation of the CMS Workplan	Within fifteen (15) days after receipt of the Department's approval of the Workplan.
VIII.G.3(a)	CMS Report	In accordance with the schedule in the approved CMS Workplan.
VIII.G.3(a)	Revised CMS Report	Within thirty (30) days of receipt of the Department's comments on the CMS Report.
VIII.H.2	Statement of Basis	Within thirty (30) days of receipt of the Department's approval letter for the CMS Report.
VIII.I.1	CMI Workplan	Within thirty (30) days of the permit modification for remedy selection.
VIII.I.2	Operations and Maintenance Plan	In accordance with the schedule in the approved CMI Workplan.
VIII.I.4	Construction Completion Report	In accordance with the schedule in the approved CMI Workplan.
VIII.I.6	CMI Progress Reports	Semi-annually, beginning one hundred eighty (180) days after approval of the CMI Workplan.
VIII.I.7	Remedy Completion Report	Within ninety (90) days of completion of the selected remedy.

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Corrective Action Compliance Schedule		
VIII.K.5	Amendment of Assessment Report, CS Workplan, or RFI Workplan that no longer satisfies requirements of R.61-79.264.101 or this Permit	Within ninety (90) days of determination.
The above reports must be signed and certified in accordance with R.61-79.270.11. [1] Applies to workplan execution that requires more than one hundred eighty (180) days. [2] Applies to workplan execution that requires more than one (1) year.		

Module IX. WASTE MINIMIZATION

IX.A. GENERAL RESTRICTIONS

In the event that the Permittee treats, stores, or disposes of hazardous wastes onsite where such wastes were generated, then the Permittee must comply with R.61-79.264.73(b)(9), and Section 3005 (h) of RCRA (42 U.S.C. 6925(h)), and the Permittee must certify, no less than annually, that:

IX.A.1 Reduction of Hazardous Waste

The Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

IX.A.2 Method of Treatment, Storage or Disposal

The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee that minimizes the present and future threat to human health and the environment.

IX.B. RECORDING REQUIREMENTS

If Permit Condition IX.A - General Restrictions is applicable, then the Permittee shall maintain copies of this certification in the facility operating record as required by R.61-79.264.73(b)(9).

IX.C. WASTE MINIMIZATION OBJECTIVES

If Permit Condition IX.A - General Restrictions is applicable, the Waste Minimization program required under Permit Condition IX.A - General Restrictions must address the objectives listed on the following two pages (Waste Minimization Objectives).

The Waste Minimization Program should include the following elements:

I. Top Management Support

A. Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.

B. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

C. Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

II. Characterization of Waste Generation

A. Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

III. Periodic Waste Minimization Assessments

A. Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

B. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

C. Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.

D. Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

IV. Cost Allocation System

A. Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

B. Description of how departments are held accountable for the wastes they generate.

C. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

V. Technology Transfer

A. Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

VI. Program Evaluation

A. Description of types and amounts of hazardous waste reduced or recycled.

B. Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

C. Amendments to waste minimization plan and explanation.

D. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

E. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

References:

"Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/7 88/003, July 1988.

Module X. LAND DISPOSAL RESTRICTIONS

X.A. GENERAL RESTRICTIONS

R.61-79.268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage, or disposal unit. The Permittee shall maintain compliance with the requirements of R.61-79.268. Where the Permittee has applied for an extension, waiver or variance under R.61-79.268, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending a final decision for such application.

X.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

X.B.1 Restricted Waste Disposal Prohibition

A restricted waste identified in R.61-79.268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of R.61-79.268 Subparts C and/or D are met.

X.B.2 Storage Prohibition

The storage of hazardous wastes restricted from land disposal under R.61-79.268 is prohibited unless the requirements of R.61-79.268 Subpart E are met.

Module XI. SUBPART AA ORGANIC AIR EMISSIONS REQUIREMENTS

XI.A. INTRODUCTION AND APPLICABILITY

Phase I Organic Air Emission Standards (R.61-79.264 and R.61-79.265, Subparts AA and BB) apply to hazardous waste treatment, storage, and disposal facilities. Subpart AA contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight.

XI.B. PERMITTED AND PROHIBITED WASTE TANK IDENTIFICATION

XI.B.1 Vent Identification

The Permittee must comply with the Organic Air Emission Requirements of R.61-79.264 Subpart AA (for process vents) for the following identified process vents. The Permittee may vent emissions from the following identified process vents subject to the terms of this Permit as follows:

Vent Identification	Hazardous Waste Management Unit	Description of Hazardous Waste Stream
None as of July 2025		

XI.B.2 Prohibited Wastes

The Permittee is prohibited from managing hazardous waste that are not identified in Volume I, Section A of the Approved Permit Application.

XI.C. EMISSION CONTROL TECHNOLOGY

The Permittee shall maintain the total organic emissions from all process vents at the facility subject to R.61-79.264 Subpart AA below 3 lb/hr and 3.1 tons/yr. [R.61-79.264.1032(a)(1)]

XI.D. MONITORING AND INSPECTION SCHEDULES AND PROCEDURES

XI.D.1 Schedule and Procedure Submittal

A monitoring and inspection schedule and procedures shall be submitted to the Department within thirty (30) calendar days prior to the anticipated start-up of a new closed vent system subject to the requirements of R.61-79.264 Subpart AA. The Department must approve this monitoring and inspection schedule and

procedures prior to any continuous or intermittent operations.

XI.D.2 Compliance Documentation

The Permittee shall document compliance with Permit Conditions XI.B - Permitted And Prohibited Waste Tank Identification, XI.C - Emission Control Technology, XI.D - Monitoring And Inspection Schedules And Procedures, and XI.E - Recordkeeping And Reporting of this Module and place this documentation in the operating record for the facility. [R.61-79.264.1035]

XI.E. RECORDKEEPING AND REPORTING

XI.E.1 Compliance Documentation

The Permittee shall keep on-file up-to-date documentation of compliance with the process vent standards in R.61-79.264.1032. [R.61-79.1035(b)(2)]

XI.E.2 Data and Supporting Documentation

The Permittee shall keep on-file up-to-date information and data used to determine whether or not a process vent located at the facility is subject to the requirements of R.61- 79.264.1032 including supporting documentation as required by R.61-79.264.1034(d)(2) when application of the knowledge of the nature of the hazardous stream or the process by which it was produced is used.

XI.E.3 Semi-Annual Reporting

The Permittee shall report semiannually to the Department (beginning six (6) months from the effective date of the permit) the dates within each month during the reporting period when: 1) total organic emissions from all affected process vents subject to the requirements of R.61-79.264 Subpart AA exceeded 3 lbs/hr or 3.1 tons/yr or 2) a control device exceeded or operated outside the design specifications as defined in R.61-79.264.1035(c)(4) as indicated by the control device monitoring required by R.61-79.264.1033(f) and was not corrected within 24 hours. [R.61-79.264.1036(a)(2)]

Module XII. SUBPART BB ORGANIC AIR EMISSIONS REQUIREMENTS

XII.A. INTRODUCTION AND APPLICABILITY

Subpart BB contains emissions standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight. The Mixed Waste Storage Buildings are exempt since it manages equipment for less than 300 hours per year. No other facilities are subject to Subpart BB.

XII.B. GENERAL RESTRICTIONS

The Permittee must comply with the Organic Air Emissions Requirements of R.61-79.264 Subpart BB (for equipment leaks), as described in Section F of the respective volumes of the Approved Permit Application.

XII.C. PERMITTED AND PROHIBITED WASTE TANK IDENTIFICATION

The permittee may manage only those hazardous wastes identified in Volume I, Section A of the Approved Permit Application with the equipment covered by this regulation.

Module XIII. SUBPART CC ORGANIC AIR EMISSIONS REQUIREMENTS

XIII.A. APPLICABILITY

XIII.A.1 General Applicability

Subpart CC applies to all tanks, surface impoundments, containers and miscellaneous units, identified in this Permit, except as provided for in R.61-79.264.1 and R.61-79.264.1080(b).

XIII.A.2 Applicable Hazardous Waste Management Units

The Conditions of this Module apply to hazardous waste management units identified in Appendix XIII-A, for which required control equipment has been installed and is operational.

XIII.A.3 Exemptions

The hazardous waste management units identified in the table below are exempt from the RCRA Subpart CC standards as specifically cited.

RCRA Subpart CC Exempted Hazardous Waste Management Units	
Hazardous Waste Management Unit	**RCRA Subpart CC Regulation Cited**
Mixed Waste Storage Buildings 643-29E and 643-43E	R.61-79.264.1080(b)(6)

NOTE 1: A portion of the non-radioactive hazardous waste may be subject to Subpart CC. Refer to Section F.6.2 of Volume VIII of the Approved Permit Application for a detailed explanation of what is exempt.

XIII.B. EMISSION CONTROL TECHNOLOGY

The Permittee shall install and maintain all regulated units and associated emission control technology in accordance with the detailed plans, schedules, information and reports as needed.

XIII.C. GENERAL STANDARDS

The Permittee shall comply with the applicable requirements of R.61-79.264 Subpart CC, as described in Section F.6.2 of Volume VIII of the Approved Permit Application.

XIII.D. REPORTING REQUIREMENTS

XIII.D.1 Noncompliance Reporting Exempt Units

For each tank, container, surface impoundment or miscellaneous unit which manages hazardous waste that is exempted from using air emission controls, a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the Conditions of R.61-79.264.1082(c)(1) or (c)(2), as applicable. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

XIII.D.2 Noncompliance Reporting

For tanks listed in Condition XIII.A.2, which use air emission controls in accordance with the requirements R.61-79.264.1084(c), a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is managed in the tank in noncompliance with the Conditions specified in R.61-79.264.1084(c)(1) through (c)(4). The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

XIII.D.3 Reporting Requirements for Control Devices

For control devices used in accordance with the requirements of R.61-79.264.1087, a semiannual written report shall be submitted to the Department except as provided for in Condition XIII.D.4 of this Part. The report shall describe each occurrence during the previous 6-month period when a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in R.61-79.264.1035(c)(4) or when a flare is operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in R.61-79.264.1033(d). The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance.

XIII.D.4 Control Device Reporting Requirement Exception

A report to the Department in accordance with the requirements of Condition XIII.D.3 of this Part is not required for a 6-month period during which all control

devices subject to R.61-79.264, Subpart CC, are operated such that during no period of 24 hours or longer, did a control device operate continuously in noncompliance with the applicable operating values defined in R.61-79.264.1035(c)(4) of this part and no flare operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in R.61-79.264.1033(d).

XIII.D.5 Signature Requirements

All reports shall be signed and dated by the Permittee as per R.61-79.270.11(b).

XIII.E. NOTIFICATION OF NEW UNITS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject R.61-79.264, Subpart CC, or modifying an existing process, waste handling or tank or container such that the unit(s) will become subject to R.61-79.264 Subpart CC, the Permittee shall apply for a permit modification under R.61-79.270.42, and provide specific Part B application information required under R.61-79.270.14-17 and 270.27, as applicable, with the modification request.

Appendix XIII-A

METHODS OF COMPLIANCE WITH SUBPART CC STANDARDS

Tanks

1. These tanks shall comply with Level 1 controls which require tanks to have a fixed roof with no visible cracks, holes, gaps, or other spaces in accordance with R.61-79.264.1084(c). The tank shall be visually inspected for defects initially prior to the tank becoming subject to the requirements and at least once every year thereafter. [R.61-79.264.1084(c)].

2. These tanks are fixed-roof tanks equipped with an internal floating roof and shall comply with Tank Level 2 controls in accordance with R.61-79.264.1084(e). The internal floating roof shall be visually inspected for defects at least once every 12 months after initial fill unless complying with the alternative inspection procedures in R.61-79.264.1084(e)(3)(iii). [R.61-79.264.1084(d)(1)]

3. These tanks are equipped with an external floating roof and shall comply with Tank Level 2 controls in accordance with R.61-79.264.1084(f). The external floating roof seal gaps shall be measured in accordance with the procedures contained in R.61-79.264.1084(f)(3)(I) within 60 days and at least once every 5 years thereafter. The external floating roof shall be visually inspected for defects at least once every 12 months after initial fill. [R.61-79.264.1084(d)(2)]

4. These tanks are vented through a closed-vent system to a control device and shall comply with Tank Level 2 controls in accordance with R.61-79.264.1084(g). The tank shall be equipped with a fixed roof and closure devices which shall be visually inspected for defects initially and at least once every year. The closed-vent system and control device shall be inspected and monitored in accordance with 264.1087. [R.61-79.264.1084(d)(3)]

5. These tanks are pressure tanks which shall comply with Tank Level 2 controls in accordance with R.61-79.264.1084(h). [R.61- 79.264.1084(d)(4)]

6. These tanks are located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device and shall comply with Tank Level 2 controls in accordance with R.61-79.264.1084(l). The closed-vent system and control device shall be inspected and monitored in accordance with 264.1087. [R.61-79.264.1084(d)(5)]

7. These tanks have covers which have been specified as “unsafe to inspect and monitor” and shall comply with the requirements of R.61-79.264.1084(l)(1). [R.61-79.264.1084(f) & (g)]

Surface Impoundments

8. These surface impoundments shall have a floating membrane cover in accordance with R.61-79.264.1085(c). The floating membrane cover shall be visually inspected for defects initially and at least once each year. [R.61-79.264.1085(b)(1)]

9. These surface impoundments shall have a cover that is vented through a closed-vent system to a control device in accordance with R.61-79.264.1085(d). The surface impoundment cover and its closure devices shall be visually inspected for defects initially and at least once each year. The closed-vent system and control device shall be inspected and monitored in accordance with R.61-79.264.1087. [R.61-79.264.1085(b)(2)]

10. These surface impoundments have covers which have been designated as "unsafe to inspect and monitor" and shall comply with the requirements of R.61-79.264.1085(g). [R.61-79.264.1085(c) & (d)]

Containers

11. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and meet the applicable U.S. DOT regulations under the Container Level 1 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted at a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(i) & R.61-79.264.1086(c)(1)(i)]

12. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and are equipped with a cover and closure devices which form a continuous barrier over container openings. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted at a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(i) & R.61-79.264.1086(c)(1)(ii)]

13. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and are open-top containers in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(i) & R.61-79.264.1086(c)(1)(iii)]

14. These containers have a design capacity greater than 0.46 m^3, are not in light material service and meet the applicable U.S. DOT regulations under the Container Level 1 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted at a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(ii) & R.61-79.264.1086(c)(1)(i)]

15. These containers have a design capacity greater than 0.46 m^3, are not in light material service and are equipped with a cover and closure devices which form a continuous barrier over container openings. The container and its cover and closure devices shall be visually inspected

for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(ii) & R.61-79.264.1086(c)(1)(ii)]

16. These containers have a design capacity greater than 0.46 m^3, are not in light material service and are open-top containers in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(ii) & R.61-79.264.1086(c)(1)(iii)]

17. These containers have a design capacity greater than 0.46 m^3, are in light material service and meet the applicable U.S. DOT regulations under the Container Level 2 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted at a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(iii) & R.61-79.264.1086(d)(1)(i)]

18. These containers have a design capacity greater than 0.46 m^3, are in light material service and operate with no detectable organic emissions as defined in R.61-79.265.1081. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(iii) & R.61-79.264.1086(d)(1)(ii)]

19. These containers have a design capacity greater than 0.46 m^3, are in light material service and that have been demonstrated within the preceding 12 months to be vapor-tight using 40 C.F.R. Part 60, Appendix A, Method 27. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [R.61-79.264.1086(b)(1)(iii) & R.61-79.264.1086(d)(1)(iii)]

20. These containers have a design capacity greater than 0.1 m^3 that are used for treatment of a hazardous waste by a waste stabilization process and are vented directly through a closed-vent system to a control device in accordance with R.61-79.264.1086(e)(2)(ii). The closed-vent system and control devices shall be inspected and monitored as specified in R.61-79.264.1087. [R.61-79.264.1086(b)(2) & R.61-79.264.1086(e)(1)(i)]

21. These containers have a design capacity greater than 0.1 m^3 that are used for treatment of a hazardous waste by a waste stabilization process and are vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with R.61-

79.264.1086(e)(2)(**I**) & R.61-79.264.1086(ii). The closed-vent system and control devices shall be inspected and monitored as specified in R.61-79.264.1087. [R.61-79.264.1086(b)(2) & R.61-79.264.1086(e)(1)(ii)]

Table XIII-A		
Subpart CC Compliance Schedule		
Permit Condition	**Event**	**Due Date**
XIII.D.1	Written report of noncompliance of tanks, surface impoundments or containers with R.61-79 264.1082(c)(1) or R.61-79.264.1082(c)(2)	Within fifteen (15) calendar days of becoming aware of noncompliance
XIII.D.2	Written report of noncompliance of tanks with R.61-79.264.1084(c)(1) through R.61-79.264.1084(c)(4)	Within fifteen (15) calendar days of becoming aware of noncompliance
XIII.D.3	Semi-Annual Report for Use of Control Devices [R.61-79.264.1090(c)]	Semi-annually, beginning six (6) months from the effective date of the permit*

*Semi-annual report is not required if provisions of Condition XIII.D.4 are met.

APPENDIX A – PERMIT MODULE EXPIRATION DATES

Module(s)	Effective Date	Expiration Date
I - Standard Conditions	TBD	TBD
II – General Facility Conditions	TBD	TBD
IIIA – Postclosure Care M-Area and Metallurgical Laboratory HWMFs IVA – Postclosure Care Groundwater Requirements M-Area and Metallurgical Laboratory HWMFs	December 15, 2021	December 15, 2031
IIIB – Postclosure Care F-Area HWMF IVB – Postclosure Care Groundwater Requirements F-Area HWMF	December 15, 2021	December 15, 2030
IIIC – Postclosure Care H-Area HWMF IVC – Postclosure Care Groundwater Requirements F-Area HWMF	December 15, 2021	December 15, 2030
IIID – Postclosure Care Mixed Waste Management Facility HWMF IVD – Postclosure Care Groundwater Requirements Mixed Waste Management Facility HWMF	TBD	TBD
IIIF – Postclosure Care Sanitary Landfill HWMF IVF – Postclosure Care Groundwater Requirements Sanitary Landfill HWMF	TBD	TBD
IIIG – Postclosure Care Solvent Storage Tanks S33-S36 Facility	December 15, 2021	December 15, 2031
VB – Containers Mixed Wastes Storage Buildings	TBD	TBD
VC – Containers Transuranic Waste Pads 3-6, 14-19, & 26 Facility	February 14, 2016	February 14, 2026
VI – Consolidated Incineration Facility	February 2, 2001	October 5, 2000*

Module(s)	Effective Date	Expiration Date
VIII – Corrective Action for SWMUs and AOCs	TBD	TBD
IX – Waste Minimization	TBD	TBD
X – Land Disposal Restrictions	TBD	TBD
XI – Subpart AA Organic Air Emission Requirements	TBD	TBD
XII – Subpart BB Organic Air Emission Requirements	TBD	TBD
XIII – Subpart CC Organic Air Emission Requirements	TBD	TBD

*Remains effective due to timely submission of renewal RCRA Part B permit application. Facility no longer operating

APPENDIX B - RCRA FACILITY INVESTIGATION (RFI) WORKPLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this appendix and the RFI Guidance, EPA-530/SW-89-031. This workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan that will include a discussion of the technical approach, schedules, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with EPA Region 4 Quality System and Technical Procedures (most recent version). Any deviations from this reference must be requested by the applicant and approved by the Department. The Sampling and Analysis Plan must specifically discuss the following unless the SOP procedures are specifically referenced.

1. Sampling Strategy

a) Selecting appropriate sampling locations, depths, etc.;

b) Obtaining all necessary ancillary data;

c) Determining conditions under which sampling should be conducted;

d) Determining which media are to be sampled (e.g. groundwater, air, soil, sediment, subsurface gas);

e) Determining which parameters are to be measured and where;

f) Selecting the frequency of sampling and length of sampling period;

g) Selecting the types of samples (e.g. composites vs. grabs) and number of samples to be collected.

2. Sampling Procedures

a) Documenting field sampling operations and procedures, including:

(i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g. filters, preservatives, and absorbing reagents);

(ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

(iii) Documentation of specific sample preservation method;

(iv) Calibration of field instruments;

(v) Submission of field-biased blanks, where appropriate;

(vi) Potential interferences present at the facility;

(vii) Construction materials and techniques, associated with monitoring wells and piezometers;

(viii) Field equipment listing and sampling containers;

(ix) Sampling order; and

(x) Decontamination procedures.

b) Selecting appropriate sample containers;

c) Sampling preservation; and

d) Chain-of-custody, including:

(i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and

(ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis

Sample analysis shall be conducted in accordance with Test Methods for Evaluating Solid Waste:/, Physical/Chemical Methods (SW-846) (most recent version). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a) Chain-of-custody procedures, including:

   (i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

   (ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab tracking report sheets; and

   (iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b) Sample storage;

c) Sample preparation methods;

d) Analytical Procedures, including:

   (i) Scope and application of the procedure;

   (ii) Sample matrix;

   (iii) Potential interferences;

   (iv) Precision and accuracy of the methodology; and

   (v) Method detection limits.

e) Calibration procedures and frequency;

f) Data reduction, validation and reporting;

g) Internal quality control checks, laboratory performance and systems audits and frequency, including:

   (i) Method blank(s);

   (ii) Laboratory control sample(s);

   (iii) Calibration check sample(s);

   (iv) Replicate sample(s);

   (v) Matrix-spiked sample(s);

   (vi) "Blind" quality control sample(s);

   (vii) Control charts;

(viii) Surrogate samples;

(ix) Zero and span gases; and

(x) Reagent quality control checks.

h) External quality control checks by the Department, including:

(i) Spikes and blanks at sampling events for which the Department or its technical representative provides oversight; and

(ii) The equivalent of a CLP data package for samples split with the Department or for which the Department specifically requests the package.

i) Preventive maintenance procedures and schedules;

j) Corrective action (for laboratory problems); and

k) Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a) Unique sample or field measurement code;

b) Sampling or field measurement location and sample or measurement type;

c) Sampling or field measurement raw data;

d) Laboratory analysis ID number;

e) Property or component measures; and

f) Result of analysis (e.g. concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a) Unsorted (raw) data;

b) Results for each medium, or for each constituent monitored;

c) Data reduction for statistical analysis, as appropriate;

d) Sorting of data by potential stratification factors (e.g. location, soil layer, topography); and

e) Summary data

3. Graphical Displays

The following data shall be presented in graphical formats (e.g. bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a) Display sampling location and sampling grid:

b) Indicate boundaries of sampling area, and area where more data are required;

c) Display geographical extent of contamination;

d) Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and

e) Indicate features affecting inter media transport and show potential receptors.

II. RCRA Facility Investigation (RFI) Requirements

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in previously developed documents such as a RCRA Part B Permit Application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate but must be summarized in both the RFI Workplan and RFI Report.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as

they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a) A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:

(i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

(ii) Structural geology: description of local and regional structural features (e. g., folding, faulting, tilting, jointing, etc.);

(iii) Depositional history;

(iv) Regional and facility specific ground-water flow patterns; and

(v) Identification and characterization of areas and amounts of recharge and discharge.

b) An analysis of any topographic features that might influence the ground-water flow system.

c) Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i. e., the aquifers and any intervening saturated and unsaturated units), including:

(i) Hydraulic conductivity and porosity (total and effective);

(ii) Lithology, grain size, sorting, degree of cementation;

(iii) An interpretation of hydraulic interconnections between saturated zones; and

(iv) The attenuation capacity and mechanisms of the natural earth materials (e.g. ion exchange capacity, organic carbon content, mineral content etc.).

d) Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

(i) Water-level contour and/or potentiometric maps;

(ii) Hydrologic cross sections showing vertical gradients;

(iii) The flow system, including the vertical and horizontal components of flow; and

(iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

e) A description of man-made influences that may affect the hydrology of the site, identifying:

(i) Local water-supply and production wells with an approximate schedule of pumping; and

(ii) Man-made hydraulic structures (pipelines, french drains, ditches, etc.).

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a) Surface soil distribution;

b) Soil profile, including ASTM classification of soils;

c) Transects of soil stratigraphy;

d) Hydraulic conductivity (saturated and unsaturated);

e) Relative permeability;

f) Bulk density;

g) Porosity;

h) Soil sorption capacity;

i) Cation exchange capacity (CEC);

j) Soil organic content;

k) Soil pH;

l) Particle size distribution;

m) Depth of water table;

n) Moisture content;

o) Effect of stratification on unsaturated flow;

p) Infiltration;

q) Evapotranspiration;

r) Storage capacity;

s) Vertical flow rate; and

t) Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization may include, but not be limited to, the following activities and information:

a) Description of the temporal and permanent surface water bodies including:

(i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

(ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;

(iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e. 100 year event), discharge point(s), and general contents.

(iv) Drainage patterns; and

(v) Evapotranspiration.

b) Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c) Description of sediment characteristics including:

(i) Deposition area;

(ii) Thickness profile; and

(iii) Physical and chemical parameters (e.g. grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a) A description of the following parameters:

(i) Annual and monthly rainfall averages;

(ii) Monthly temperature averages and extremes;

(iii) Wind speed and direction;

(iv) Relative humidity/dew point;

(v) Atmospheric pressure;

(vi) Evaporation data;

(vii) Development of inversions; and

(viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence. (i.e. Hurricanes)

b) A description of topographic and man-made features which affect air flow and emission patterns, including:

(i) Ridges, hills or mountain areas;

(ii) Canyons or valleys;

(iii) Surface water bodies (e. g. rivers, lakes, bays, etc.); and

(iv) Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected, the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e. g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics:

a) Location of unit/disposal area;

b) Type of unit/disposal area;

c) Design features;

d) Operating practices (past and present)

e) Period of operation;

f) Age of unit/disposal area;

g) General physical conditions; and

h) Method used to close the unit/disposal area.

2. Waste Characteristics:

a) Type of wastes placed in the unit;

(i) Hazardous classification (e. g. flammable, reactive, corrosive, oxidizing or reducing agent);

(ii) Quantity; and

(iii) Chemical composition.

b) Physical and chemical characteristics such as;

(i) Physical form (solid, liquid, gas);

(ii) Physical description (e. g., powder, oily sludge);

(iii) Temperature;

(iv) pH;

(v) General chemical class (e. g., acid, base, solvent);

(vi) Molecular weight;

(vii) Density;

(viii) Boiling point;

(ix) Viscosity;

(x) Solubility in water;

(xi) Cohesiveness of the waste; and

(xii) Vapor pressure.

c) Migration and dispersal characteristics of the waste such as:

(i) Sorption capability;

(ii) Biodegradability, bioconcentration, biotransformation;

(iii) Photodegradation rates;

(iv) Hydrolysis rates; and

(v) Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on groundwater, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Groundwater Contamination

The Permittee shall conduct a groundwater investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a) A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from within the facility;

b) The horizontal and vertical direction of contamination movement;

c) The velocity of contaminant movement;

d) The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

e) An evaluation of factors influencing the plume movement; and

f) An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e. g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a) A description of the vertical and horizontal extent of contamination;

b) A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility,

speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c) Specific contaminant concentrations;

d) The velocity and direction of contaminant movement; and

e) An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility. The investigation may include, but not be limited to, the following information:

a) A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b) The horizontal and vertical direction of contaminant movement;

c) The contaminant velocity;

d) An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e) An extrapolation of future contaminant, movement; and

f) A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a) A description of the horizontal and vertical direction and velocity of contaminant movement;

b) The rate and amount of the release; and

c) The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of groundwater:
   a) Type of use (e. g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and
   b) Location of ground water users, to include withdrawal and discharge wells, within one mile of the impacted area.

   The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.
2. Current local uses and planned future uses of surface waters directly impacted by the facility:
   a) Domestic and municipal (e. g., potable and lawn/gardening watering);
   b) Recreational (e. g. swimming, fishing);
   c) Agricultural;
   d) Industrial; and
   e) Environmental (e. g., fish and wildlife propagation).
3. Human use of or access to the facility and adjacent lands, including but not limited to:
   a) Recreation;
   b) Hunting;
   c) Residential;
   d) Commercial; and
   e) Relationship between population locations and prevailing wind direction.
4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.
6. A general demographic profile of the people who use, or have access to, the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.
7. A description of any known or documented endangered or threatened species near the facility.

APPENDIX C - CORRECTIVE MEASURE STUDY (CMS) OUTLINE

The purpose of the CMS portion of the RCRA corrective action process is to identify and evaluate potential remedial alternatives for the releases of hazardous constituents that have been identified at the facility through the RFI or other investigations to need further evaluation. The scope and requirements of the CMS are balanced with the expeditious initiation of remedies and rapid restoration of contaminated media. The scope and requirements of the CMS should be focused to fit the complexity of the site-specific situation. It is anticipated that Permittee's with sites with complex environmental problems may need to evaluate a number of technologies and corrective measure alternatives. For other facilities, however, the evaluation of a single corrective measure alternative may be adequate. Therefore, a streamlined or focused approach to the CMS may be initiated. Information gathered during any stabilization or interim measures will be used to augment the CMS and in cases where corrective action goals are met, may be a substitute for the final CMS.

Regardless of whether a streamlined/focused or a detailed CMS is required, a CMS Workplan and CMS Report are generally required elements. The requirements for a full, detailed CMS are listed below. The Department has the flexibility not to require sections of the plan and/or report, where site-specific situations indicate that all requirements are not necessary. Additionally, the Department may require additional studies besides these discussed in order to support the CMS.

I. Corrective Measures Study (CMS) Workplan

A. Elements of the CMS Workplan

The Corrective Measures Study (CMS) Workplan shall include at a minimum the following elements:

1. A site-specific description of the overall purpose of the CMS;
2. A description of the corrective measure objectives, including proposed target media cleanup standards (e.g. promulgated federal and state standards) and preliminary points of compliance or a description of how a risk assessment will be performed (e.g. guidance documents);
3. A description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;
4. A description of the general approach to investigating and evaluating potential corrective measures;
5. A detailed description of any proposed pilot, laboratory and/or bench scale studies;
6. A proposed outline for the CMS Report including a description of how information will be presented;

7. A description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, project schedules, budget and personnel. Include a description of qualifications for personnel directing or performing the work;

8. A project schedule that specifies all significant steps in the process and when key documents (e.g. CMS Progress Reports, draft CMS Report) are to be submitted to the Department;

9. A detailed Public Involvement Plan.

II. Corrective Measures Study (CMS) Report

The detail of a CMS may vary based upon the complexity of the site, on-going Interim Measures, etc. However, the CMS Report may include the following elements:

A. Introduction/Purpose

The Permittee shall describe the purpose of the CMS Report and provide a summary description of the project.

B. Description of Current Situation

The Permittee shall submit a summary and an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measures alternative(s). The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures that have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

C. Establishment of Proposed Media Specific Cleanup Standards

The Permittee shall describe the proposed media cleanup standards and point of compliance. The standards must be background, promulgated federal and state standards or risk-derived standards. If media clean-up standards are not proposed, then the Department will unilaterally propose setting media clean-up standards to either background, promulgated federal and state standards or the most conservative risk-derived standards.

D. Identification, Screening and Development of Corrective Measure Technologies

1. Identification:

List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. Include a table that summarizes the available technologies.

The Permittee should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies.

2. Screening:

The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies that have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics that are used to screen inapplicable technologies are described in more detail below:

a) Site Characteristics: Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

b) Waste Characteristics: Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

c) Technology Limitations: During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

3. Corrective Measure Development:

   The Permittee shall assemble the technologies that pass the screening step into specific alternatives that have the potential to meet the corrective action objectives for each media. Options for addressing less complex sites could be relatively straightforward and may only require evaluation of a single or limited number of alternatives. Each alternative may consist of an individual technology or a combination used in sequence (i.e. treatment train). Different alternatives may be considered for separate areas of the facility, as appropriate. List and briefly describe each corrective measure alternative.

E. Evaluation of a Final Corrective Measure Alternative

For each remedy which warrants a more detailed evaluation (i.e. those that passed through the screening step), including those situations when only one remedy is being proposed, the Permittee shall provide detailed documentation of how the potential remedy will comply with each of the standards listed below. These standards reflect the major technical components of remedies including cleanup of releases, source control and management of wastes that are generated by remedial activities. The specific standards are as follows:

1. Protect human health and the environment.
2. Attain media cleanup standards set by the Department.
3. Control the source of releases to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.
4. Comply with applicable standards for management of wastes.
5. Other factors.

In evaluating the selected alternative or alternatives, the Permittee shall prepare and submit information that documents that the specific remedy will meet the standards listed above. The following guidance should be used in completing this evaluation.

6. Protect Human Health and the Environment

   Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes. Therefore, the Permittee shall provide a discussion of any short term remedies necessary to meet this standard, as well as discuss how the corrective measures alternative(s) meet this standard.

7. Attain Media Cleanup Standards

   Remedies will be required to attain media cleanup standards. As part of the necessary information for satisfying this requirement, the Permittee shall address whether the potential remedy will achieve the remediation objectives. An estimate of the time frame necessary to achieve the goals shall be included. Contingent remedies may be proposed if there is doubt if the initial remedy will be successful (e.g. contingent remedies to innovative technologies).

8. Control of Sources of Releases

   The Permittee shall address the issue of whether source control measures are necessary, and if so, the type of actions that would be appropriate. Any source control measure proposed should include a discussion on how well the method is anticipated to work given the particular situation at the facility and the known track record of the specific technology.

9. Comply With any Applicable Standards for Management of Wastes

   The Permittee shall include a discussion of how the specific waste management activities will be conducted in compliance with all applicable state and federal regulations (e.g. closure requirements, LDRs).

10. Other Factors

    Five general factors will be considered as appropriate by the Department in selecting/approving a remedy that meets the four standards listed above. These five decision factors include:

    a) Long-term reliability and effectiveness;
    b) Reduction in the toxicity, mobility or volume of wastes;
    c) Short-term effectiveness;
    d) Implementability; and
    e) Cost.

    Examples of the type of information to include are provided below:

    a) Long-term reliability and effectiveness: The Permittee may consider whether the technology, or combination of technologies, have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have any immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. In addition, each corrective measure alternative should be evaluated in terms of the projected useful life of the overall alternative and of its

component technologies. Useful life is defined as the length of time the level of effectiveness can be maintained.

b) Reduction in the toxicity, mobility or volume of wastes: As a general goal, remedies will be preferred that employ techniques that are capable of eliminating or substantially reducing the potential for the wastes in SWMUs and/or contaminated media at the facility to cause future environmental releases. Estimates of how the corrective measure alternative will reduce toxicity, mobility and or volume of the waste is required and may be accomplished through a comparison of initial site conditions to expected post-corrective measures conditions.

c) Short-term effectiveness: The Permittee shall evaluate each corrective measure alternative for short-term effectiveness. Possible factors to consider are fire, explosion, exposure to hazardous constituents and potential threats associated with the treatment, excavation, transportation and re-disposal or containment of the waste material.

d) Implementability: Information to consider when assessing implementability include:

(i) The administrative activities needed to implement the corrective measure alternative [e.g. permits, rights of way, etc.] and the length of time these activities will take;

(ii) The constructability, time for implementation, and time for beneficial results;

(iii) The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and

(iv) The availability of prospective technologies for each corrective measure alternative.

e) Cost: The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. The capital costs shall include, but are not limited to, costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, etc. The operation and maintenance costs shall include labor, training, sampling and analysis, maintenance materials, utilities, waste disposal and/or treatment, etc. Costs shall be calculated as the net present value of the capital and operation and maintenance costs.

F. Justification and Recommendation of the Corrective Measure or Measures

The Permittee shall justify and recommend in the CMS Report a corrective measure alternative for consideration by the Department. Such a recommendation should include a

description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above. In addition, this recommendation shall include summary tables that allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Department will select the corrective measure alternative or alternatives to be implemented based on the results presented in the CMS Report.

APPENDIX D – ADDITIONAL COMPLIANCE DATES

Permit Condition	Event	Due Date
I.F.17	Imminent Hazard Report	Oral notification within 24 hours. Written notification within fifteen (15) days.
IVD.E.6	MWMF: None at the time of permit issuance. The need to implement additional characterization to address other emerging contaminants may be necessary in the future.	Within six (6) months of notification from the Department that additional characterization is needed.
IVD.J	MWMF: Submit summary report on remedial technologies available for tritiated groundwater. This review may be included in the Annual Corrective Action Report.	Every 5 years on the permit effectiveness anniversary date.
IVF.E.6	SLF: None at the time of permit issuance.	Within six (6) months of notification from the Department that additional characterization is needed.
IVF.I.4	SLF: The need to implement corrective action to address 1,4-dioxane and other emerging contaminants may be necessary in the future.	Within six (6) months of notification from the Department that corrective action is needed.
VC.L	TRU Pads: Submittal of progress report describing the status of the mixed TRU waste storage program	These are submitted with the Site Treatment Plan Annual Update.
VC.M.5	TRU Pads: Notify the Department of the placement of additional processing equipment with the Solid Waste Management Facility and adjacent to the TRU Pads 3-6, 14-19 and 26	Within thirty (30) days of the placement of additional equipment.

IX.A	Waste Minimization Certification	If applicable, no less than annually from the effective date of this permit.
The submittals above must be signed and certified in accordance with R.61-79.270.11		

APPENDIX E - LAND USE CONTROL MANAGEMENT PLAN

Incorporated by reference, the Land Use Control Assurance Plan for the Savannah River Site, WSRC-RP-98-4125, Revision 1.1, originally dated August 1999, updated January 29, 2024, as approved and amended by all subsequent approved revisions.

APPENDIX F - FACILITY MAP