



U.S. DEPARTMENT
of **ENERGY**

Beneficial Use of Select Coal Ash and Coal Fines at SRS



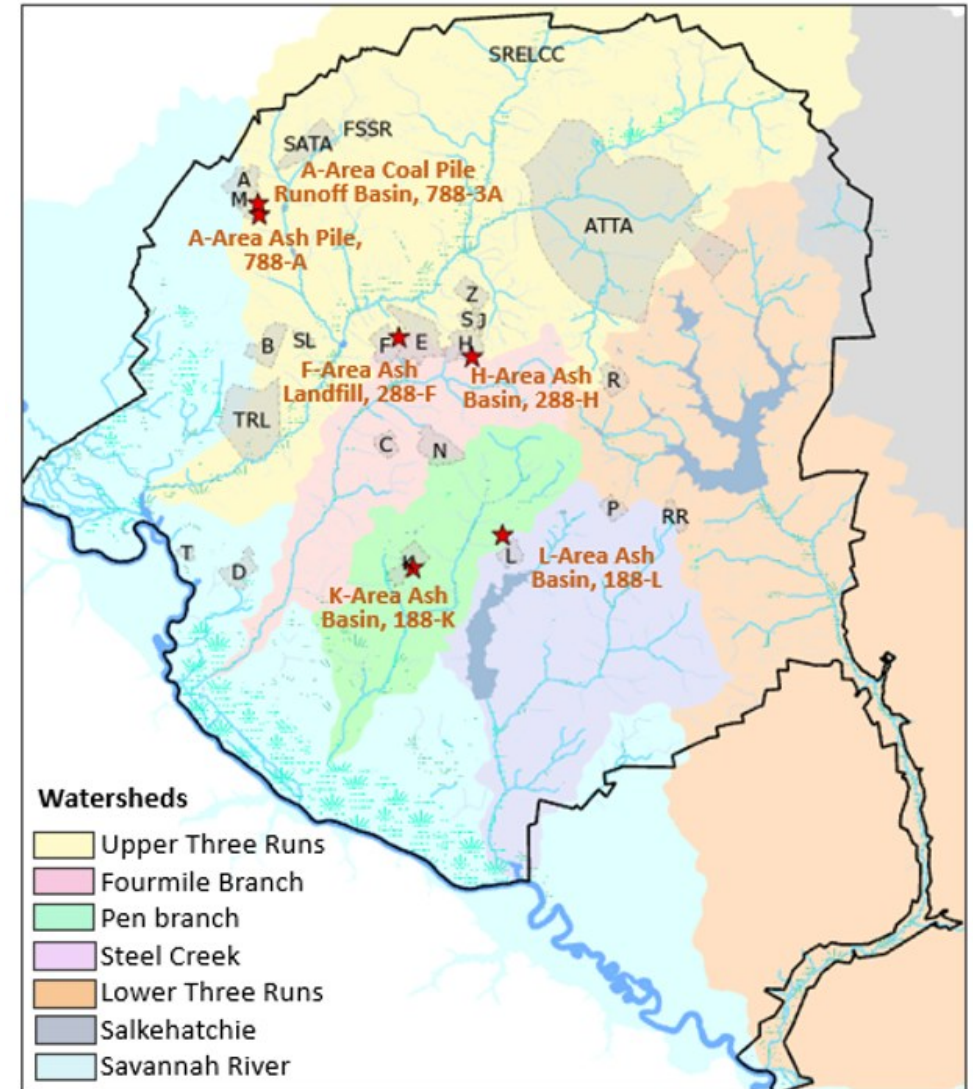
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*Savannah River Site Citizens Advisory Board Meeting
(September 22, 2026)*

Overview

- **Introduction**
 - History/Background
 - Six Ash Waste Units
- **Closure Process**
 - Resource Conservation and Recovery Act (RCRA) / Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
 - Current Status
- **Remedial Action Strategy**
 - Phased Approach
 - Clean Closure
- **Schedule**



What are Coal Ash/Coal Fines?

- **Coal combustion residuals (CCRs)**
 - waste product from the burning of coal in coal-fired power plants.
- **Coal ash is one of the largest types of industrial waste generated in the United States.**



History

- Early infrastructure development of SRS included the use of coal-fired powerhouses to generate steam and electricity. These powerhouses were located in each industrial/administrative area of the SRS.
- As a result of boiler operations coal ash/coal fines were produced as a waste product. The coal ash was either sluiced into a nearby ash basin or hauled to an ash pile.



Background

- **Completed remedial actions for SRS Coal Ash/Coal Fines waste unit closures**

Remediation	Waste Unit
Class II Soil Cover	• P-Area Ash Basin • R-Area Ash Basin
Class III Geosynthetic Cover	• D Area Ash Basins
Excavate and Haul	• Coal Pile Runoff Basins (C-, K-, L-, P- and F-Areas) • C-Area Ash Piles • Wetland Area Dubarton Bay (Phase 1)
Land Use Controls	• Wetland Area Dubarton Bay (Phase 2)

- **9 additional units have a presumed similar problem warranting action(s)**

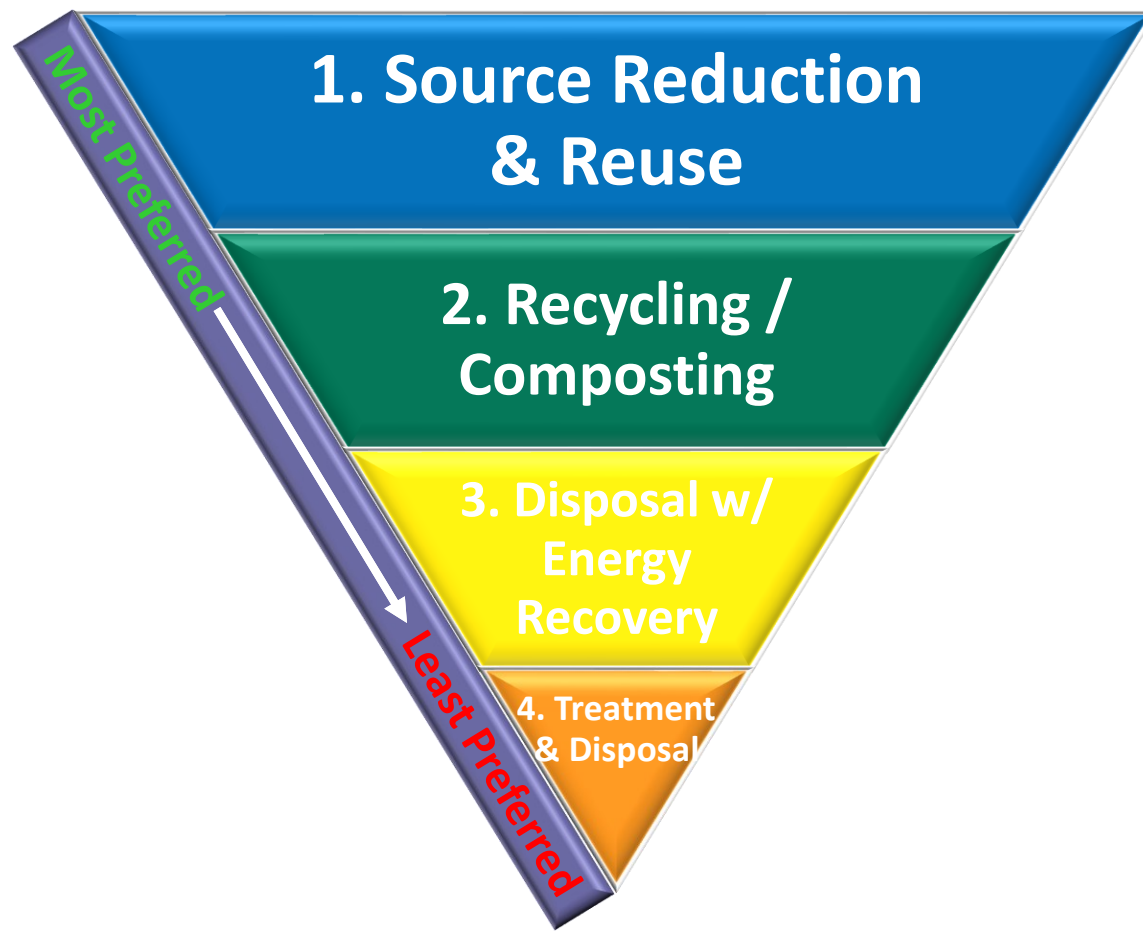
Background - *continued*

- In 2022, the United States Department of Energy proposed a wholistic remedial approach to the U.S. Environmental Protection Agency and South Carolina Department of Environmental Services for assessing the beneficial use of ash for remaining ash units at the SRS.
- The remedial approach was approved and allowed for the evaluation of Beneficial Use as an alternative for six ash related waste units.
 - *A-Area Ash Pile (AAP)*
 - *A-Area Coal Pile Runoff Basin (ACPRB)*
 - *F-Area Ash Landfill (FAL)*
 - *H-Area Ash Basin (HAB)*
 - *K-Area Ash Basin (KAB)*
 - *L-Area Ash Basin (LAB)*



Beneficial use is the recycling or reuse of coal ash in lieu of disposal

Preferred Waste Management Strategy



A-Area Ash Pile (AAP) and A-Area Coal Pile Runoff Basin (ACPRB)



- **AAP**

- Unit Area: ~1.6 acres
- Ash Extent: ~2.5 acres
- Ash Volume Estimate: ~70,000 cubic yards
- A-Area Ash Pile was created by the stockpiling of ash from the A-Area Powerhouse between 1952 and 1978.
- The ash pile is heavily vegetated with mature pines, hardwoods and a dense undergrowth.

- **ACPRB**

- Unit Area: ~2.6 acres
- Ash Volume Estimate: ~10,000 cubic yards
- Received runoff from the A-Area Powerhouse Coal Storage yard from 1978 until 2008.
- The basin is heavily vegetated with mature pines, hardwoods and a dense undergrowth.

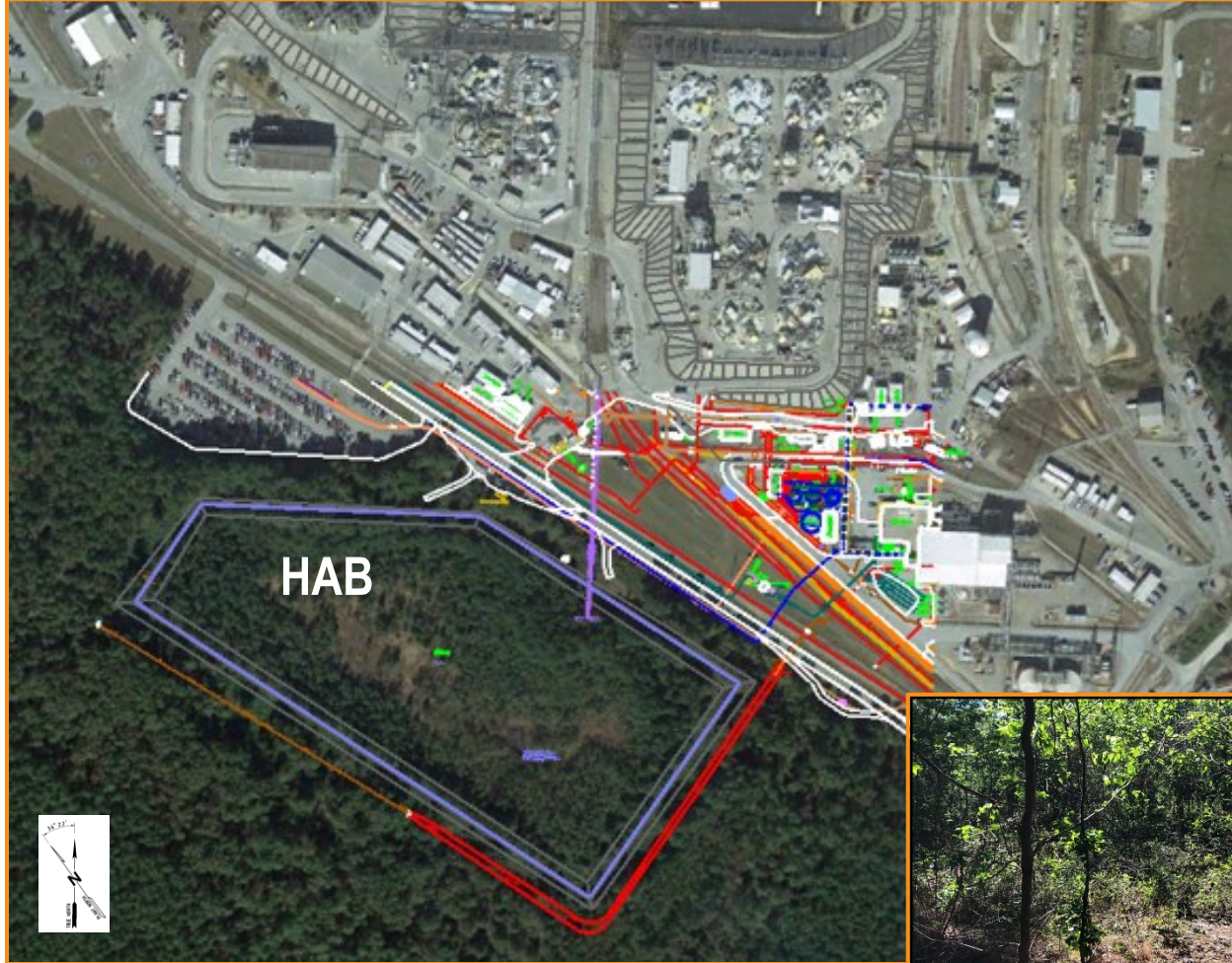
F-Area Ash Landfill (FAL)

- **FAL**

- Unit Area: ~7 acres
- Ash extent: ~18 acres
- Ash volume estimate: ~210,000 cubic yards
- FAL received ash from the A- and F-Area Powerhouses and H-Area Ash Basin.
- Operations began in 1954.
- FAL is an active SCDES Class II Permitted Solid Waste landfill.
- The basin is maintained to prevent woody vegetation, however, the area outside of the basin is heavily vegetated with dense undergrowth and mature trees.



H-Area Ash Basin (HAB)



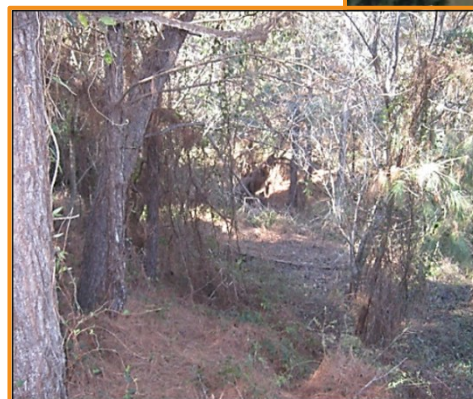
- **HAB**

- Unit Area: ~ 13 acres
- Ash Extent: ~31 acres
- Ash volume: ~260,000 cubic yards
- Ash was sluiced into this basin from 1950 to 1990 from the H-Area Powerhouse.
- The area is heavily vegetated with mature pines, hardwoods and a dense undergrowth.

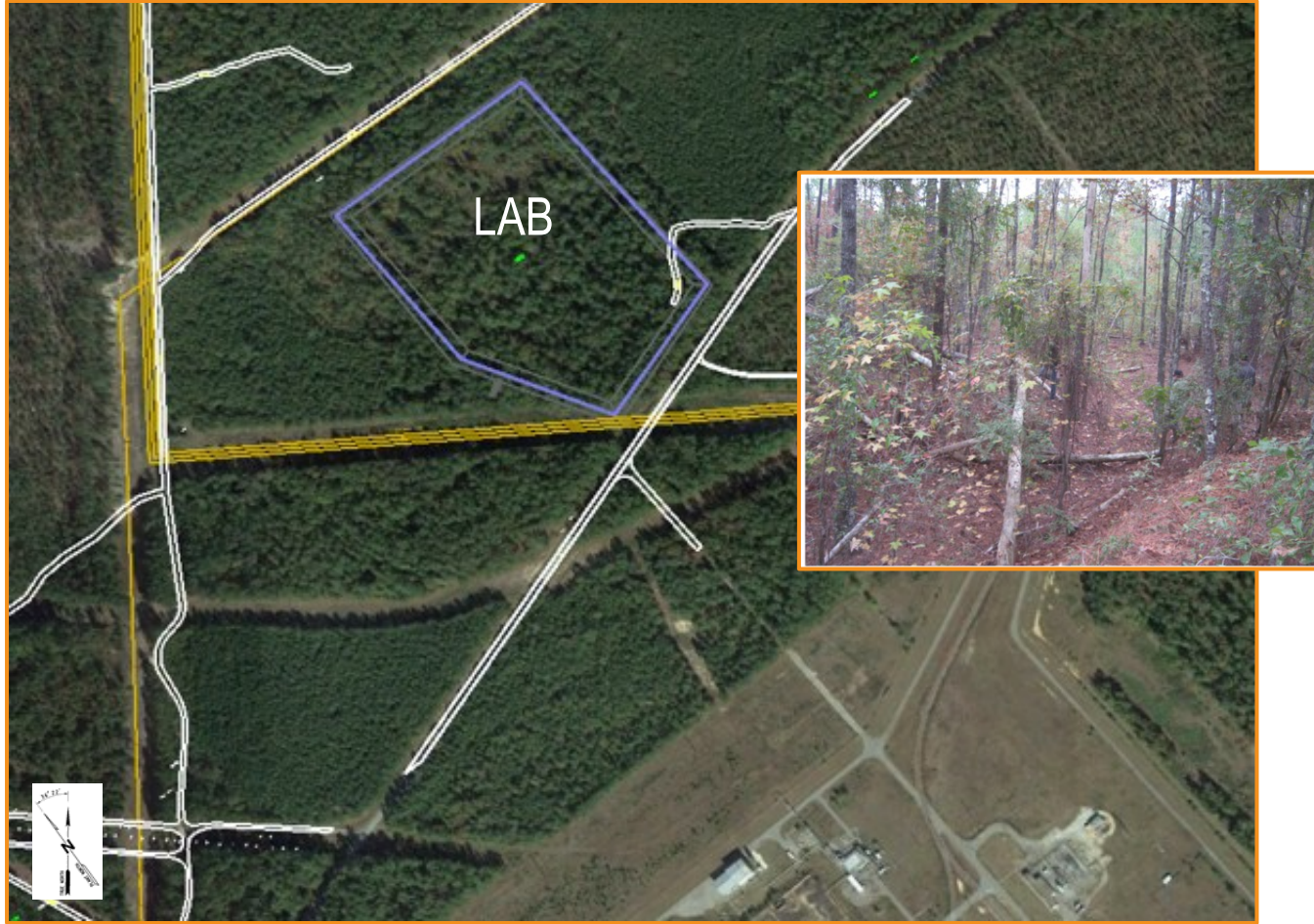
K-Area Ash Basin (KAB)

- KAB

- Unit Area : ~11 acres
- Ash Extent: ~15 acres
- Ash volume estimate: ~270,000 cubic yards
- Ash was sluiced into this basin from the K-Area Powerhouse from 1950 to 1991.
- The KAB is a heavily wooded area with mature pines, hardwoods and a thick underbrush.



L-Area Ash Basin (LAB)



- **LAB**

- Unit Area: ~18 acres
- Ash Extent: ~19 acres
- Volume ash estimate: ~320,000 cubic yards
- Ash was sluiced from L-Area Powerhouse from 1950 to 1968.
- The LAB is densely vegetated with mature pines, hardwoods and a thick underbrush.

Closure Process

- **SRS Superfund Site and cleanup is managed under the Federal Facility Agreement.**
 - RCRA/CERCLA Cleanup Process (DOE Lead Agency)
 - *Risk approach to cleanup based on site conditions (remoteness, depth to groundwater, etc)*
 - Core Team Decision (DOE, EPA, SCDES)
- **SCDES Regulations 61-107.19 - Solid Waste Management: Solid Waste Landfills and Structural Fill**
- **CCR Rules 40 CFR Part 257, Subpart D – Standards for the Disposal of Coal Combustion Residuals in landfills and Surface Impoundments**

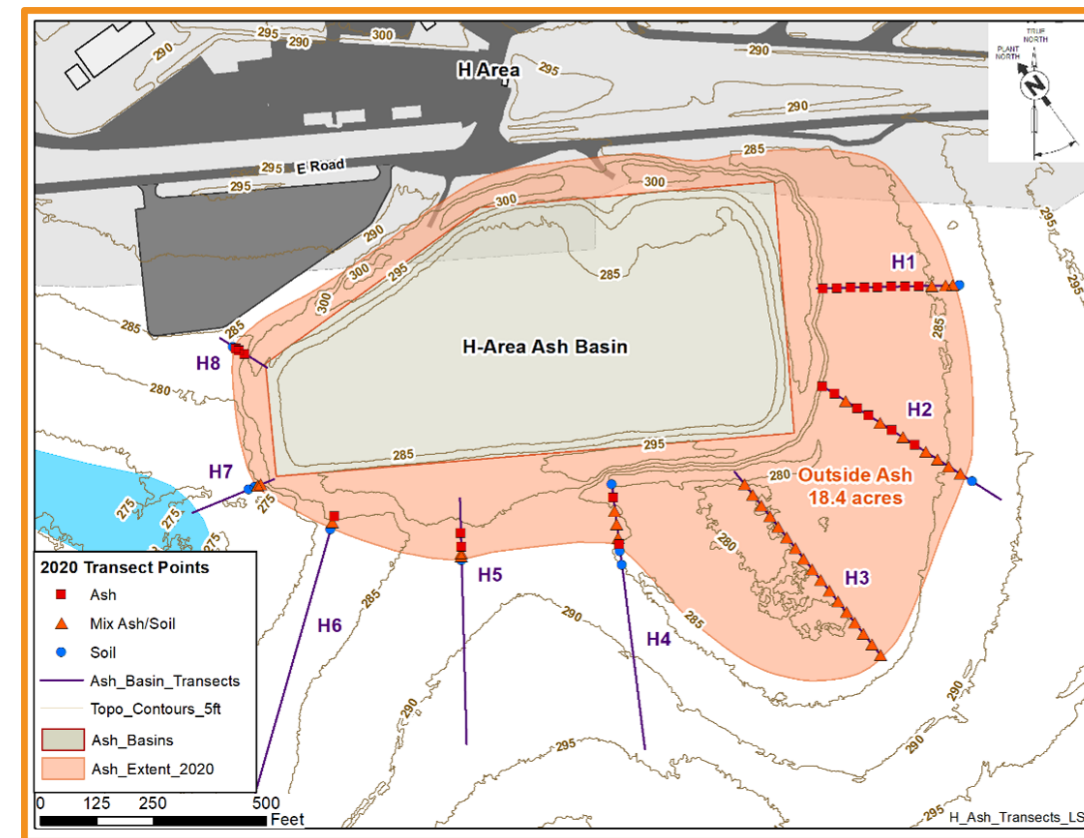
Closure Documentation

- **Documents**

- Remedial Investigation/Baseline Risk Assessment
- Corrective Measures Study/Feasibility Study
- Statement of Basis/Proposed Plan
- **Record of Decision (Current)**
- Land Use Control Implementation Plan/Remedial Action Plan
- Post Construction Report/Remedial Action Completion Report

Unit Characterization

Typical ash units have a migration of ash.



Ash is comparable from unit to unit.

Risk Assessment

- **Human Health (future resident and industrial worker) risk present in surface ash/soil exceeding 1×10^{-6}**
 - Arsenic
 - Naturally-occurring radionuclides
 - *potassium-40, thorium-232, uranium-238*
- **Contaminant migration (i.e., potential to migrate to groundwater within 1,000 years) concerns are present in the vadose zone at two of the ash units**
 - H-Area Ash Basin
 - *barium, uranium 233/34, uranium-235, uranium-238*
 - L-Area Ash Basin
 - *barium*



Remedial Alternatives

- **Based on the results of the risk assessment three alternatives were developed and evaluated for the six ash units.**
 - No Action
 - Land Use Controls (LUCs) with Beneficial Use
 - Class III Cover with LUCs
- **The remedial technologies were evaluated against the nine CERCLA criteria listed in the National Contingency Plan (NCP).**
 - LUCs with Beneficial Use and a Class III Cover with LUCs both satisfied the conditions set forth by the NCP
 - The cost for the Beneficial Use alternative was substantially lower (~\$40 mil vs ~\$60 mil)

Remedial Decision

- **Beneficial Use of CCR**

- Phase 1: Land Use Controls

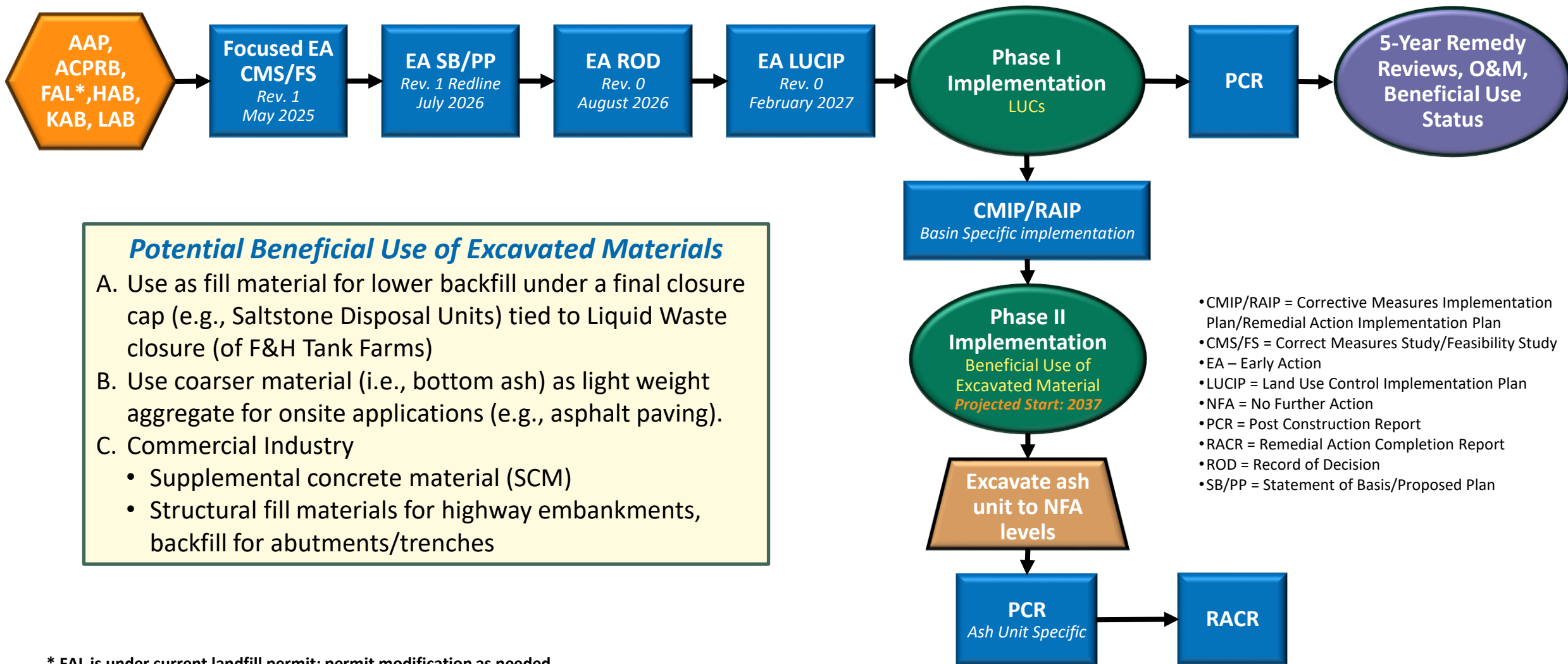
- *In place for all six ash units until beneficial use is completed*
 - *Limits access to the area to prevent direct exposure to contaminated media*
 - *Signage, deed restrictions, site use/site clearance*
 - *Successful implementation across SRS*
 - *Monitoring network for units with contaminant migration issues*
 - *Five-year remedy reviews until completion of Phase 2*

- Phase 2: Excavation and Beneficial Use of CCR

- *Clearing/grubbing*
 - *Excavation of all ash within and outside of unit boundaries*
 - *Confirmation sampling*
 - *Beneficial Use (preferred option: Saltstone Disposal Unit fill material)*
 - *Site Restoration*
 - *Clean closure*

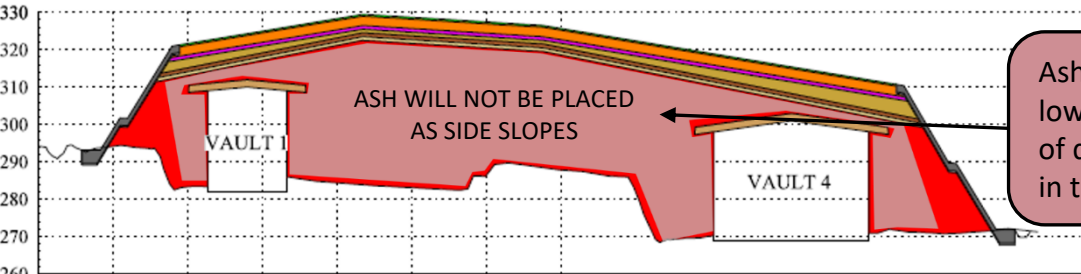
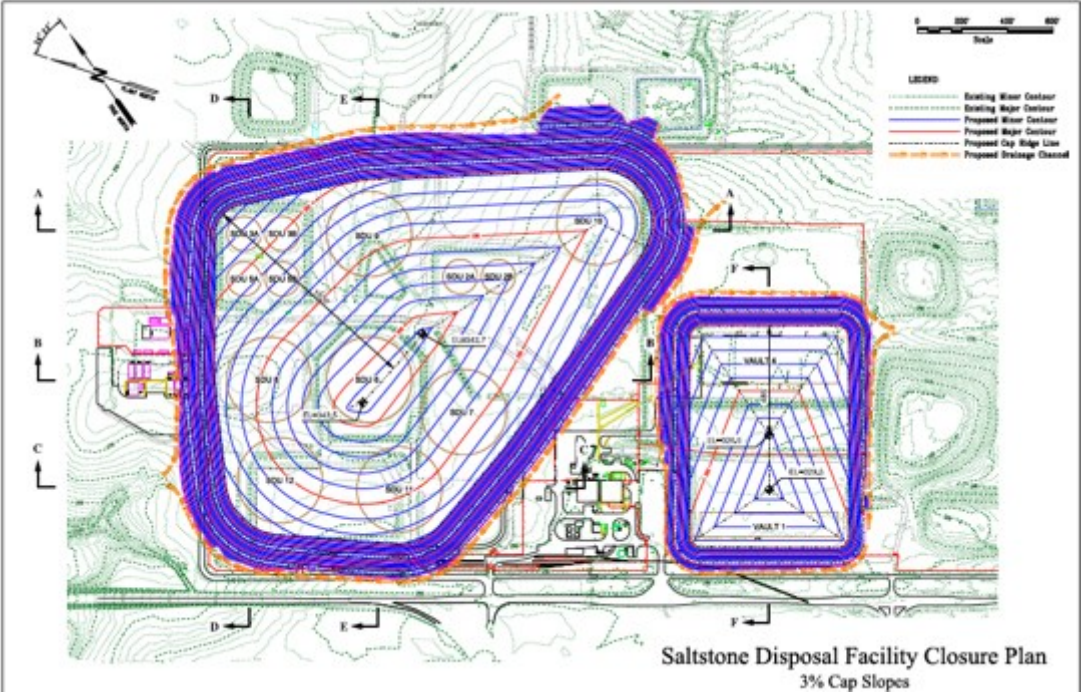


Remedial Approach



* FAL is under current landfill permit; permit modification as needed.

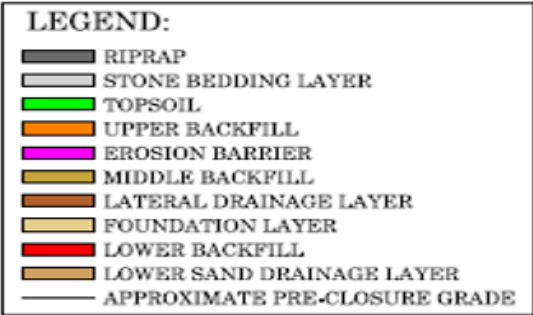
Preferred Beneficial Use Option Use of Ash as Lower Backfill for SDU – Conceptual Design



Section F-F

Ash shown as replacing lower backfill is for purposes of discussion & not currently in the conceptual design

Total Lower Backfill North 3% Cap	4,237,550 CY
Minus Tanks	-944,893 CY
Minus Structures Sand Layer	-88,505 CY
Net Total	3,204,152 CY
Total Lower Backfill South 3% Cap	1,002,109 CY
Minus Vaults	-197,681 CY
Minus Structures Sand Layer	-20,275 CY
Net Total	784,154 CY



Program Efficiencies

- Schedule efficiency (18 months per decision)
- Less regulatory documentation
- Significantly decreased design, engineering and construction costs
- Significant reduction in footprint of ash/coal fines waste units realized, resulting in less operations and maintenance costs
- Reduced need for borrow material
- Disposal cost avoidance



Schedule

Deliverable	Due Date
Submit Rev. 0, EA Record of Decision	August 11, 2026
Public Comment Period	September 16, 2026
Submit Rev. 0, EA Land Use Control Implementation Plan	February 3, 2027
Issuance of the EA Record of Decision	April 24, 2027
Remedial Action Start	February 23, 2028

Questions?





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