



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

D Area Ash Project

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Savannah River Site Citizens Advisory Board

Purpose

To satisfy the 2016 Citizen's Advisory Board's request for a presentation on the D Area Ash Project by providing an overview of the remediation activities.

Acronyms

FFA – Federal Facility Agreement

GCL – Geosynthetic Clay Layer

GDL – Geosynthetic Drainage Layer

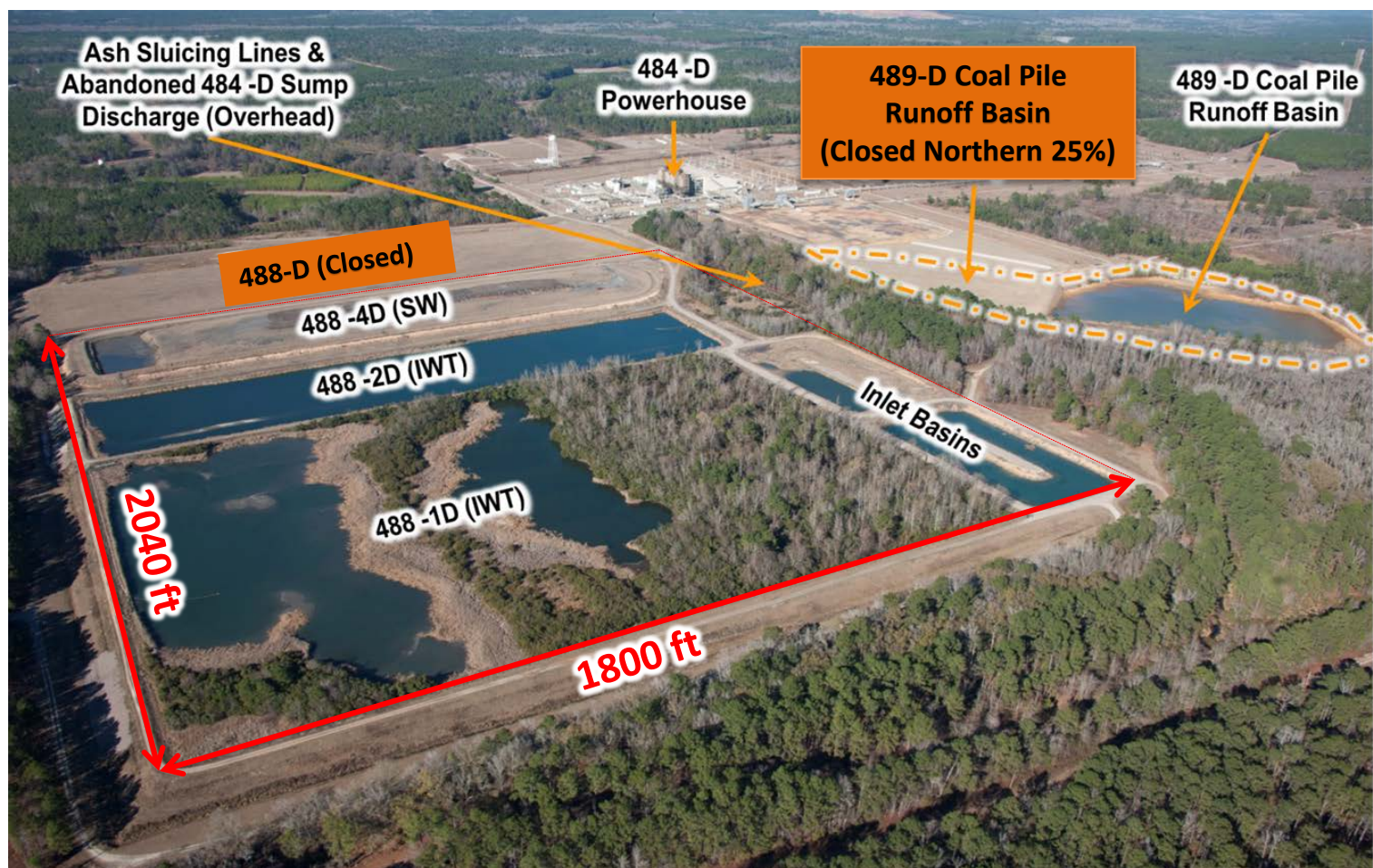
IWT – Industrial Waste Water Permit

SCDHEC – South Carolina Department of Health & Environmental Control

SW – Solid Waste Landfill Permit

USEPA – United States Environmental Protection Agency – Region 4

D Area Ash Basins & Landfill



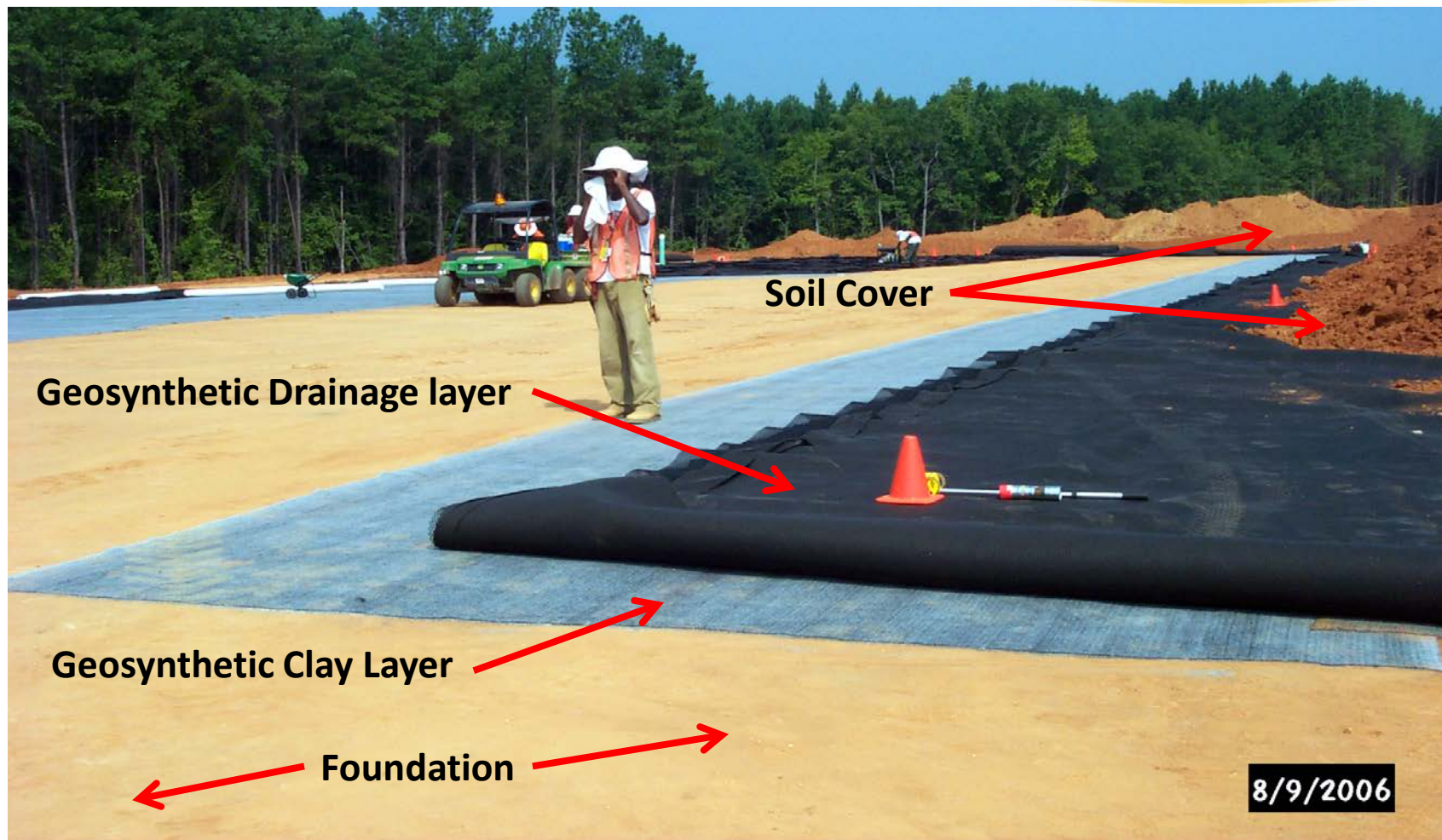
Background

- D Area Ash Basins (488-2D & -1D) & Landfill (488-4D) supported the operations of the powerhouse (shutdown April 2012):
 - Ash basins are permitted by Industrial Waste Water and Construction Permit (IWT)
 - Ash landfill is permitted under Class Two Solid Waste Landfill permit
 - Permits require closure 180 days after powerhouse shutdown
- D Area Coal Pile Runoff Basin (489-D) partially closed under American Recovery & Reinvestment Act (2011):
- In 2011, USEPA and SCDHEC agreed to close the basins & landfill under Federal Facility Agreement (FFA):
 - DOE led negotiations to allow closure flexibility to meet potential budget forecast
 - Allows closure to occur over 5 years vs 6 months

D Area Ash Project

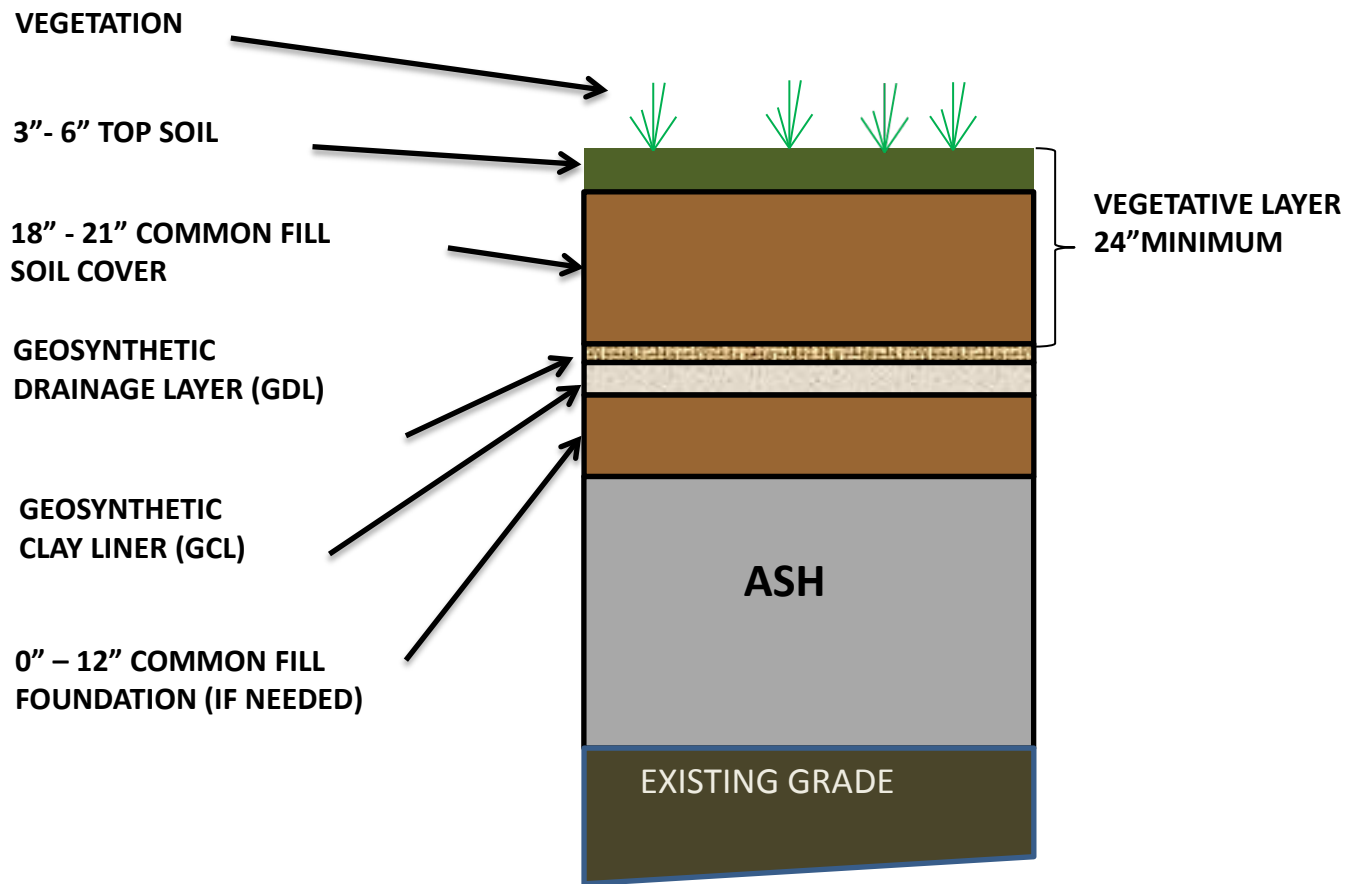
- **Closure of the landfill and basins will be implemented through a series of removal actions and early final actions to accommodate the FFA milestone schedule.**
- **D Area Ash Project includes:**
 - Dewatering and Closure of the 488-2D Ash Basin; to remain open as a detention structure
 - Geosynthetic Cap Installation over the 488-4D Ash Landfill
 - Geosynthetic Cap Installation over the east end of the 488-1D Ash Basin, the west end & inlet basins will be graded/sodded for erosion control
 - Closure of the remaining portion of the 489-D Coal Pile Runoff Basin to remain open as retention structure

D Area Ash Project



**Typical Installation of Geosynthetic Cover Bottom to Top:
Foundation, Geosynthetic Clay Layer and Geosynthetic Drainage layer, Soil Cover**

D Area Ash Project



Typical Cover System

D Area Ash Project

- Two Phase Project: Phase I includes the 488-2D Coal Ash Basin and the 488-4D Coal Ash Landfill. Phase II includes the 488-1D Coal Ash Basin and the 489-D Coal Pile Runoff Basin
- The Phase I contract was awarded to Envirocon on February 5, 2015. Mechanical completion of 488-4D was August 31, 2016 and mechanical completion of 488-2D was September 23, 2016.
- Physical completion of both facilities was December 20, 2016.
- The Phase II contract was awarded to Envirocon on March 31, 2016. Mechanical completion of 489-D is forecast for February 28, 2017 and 488-1D for February 28, 2018, respectively. Physical completion of both facilities is forecast for July 2019.
- Total Project Cost: \$74.2M

D Area Ash Project

- **FFA Removal Action Start Milestones**
 - September 2014 Removal Action start for 488-4D (10/1/2014 FFA date)
 - October 2014 Removal Action start for 488-2D (10/1/2015 FFA date)
 - September 10, 2015 Removal Action start for Coal Pile Runoff Basin (09/28/2015 FFA date)
 - August 24, 2016 Removal Action start for 488-1D (10/03/2016 FFA date)

D Area Ash Project

D Area Ash Project Material Requirements (current estimate)

- **Fill materials - 324,900 Cubic Yards**

Fill material to be brought into project site. Includes topsoil and fill material for covers and berms. Assuming 13 cubic yards per load (Tri Axle Dump) of loose materials, this equates to 29,990 truckloads.

- **Material to be Moved and/or Consolidated - 433,000 Cubic Yards**

Ash/Contaminated Soil to be consolidated and/or moved within the project site. Assuming 13 cubic yards per load (Tri Axle Dump) of loose material this equates to 39,970 truck loads. (Additional ash has been discovered in locations in and around the basin berms).

- **Geosynthetic Material - 41 Acres/1.8 Million Square Feet**

Includes the geosynthetic clay liner and geosynthetic drainage layer.

D Area Ash Project Phase I



D Area Ash Project Phase I



Excavation of ash from 488-2D and consolidation into 488-4D.

D Area Ash Project Phase I



D Area Ash Project Phase I



Installation of geosynthetics on 488-4D and placement of common fill in 488-2D.

D Area Ash Project Phase I



Installation of Geosynthetic Layers at 488-4D

D Area Ash Project Phase I Complete



D Area Ash Project Phase II



The **489-D Coal Pile Runoff Basin** collected rain water runoff from the coal storage area.



Treatment for pH and Total Suspended Solids before discharge into D Area Engineered Canal.

489-D Coal Pile Runoff Basin



September 2016

Coal fines and contaminated soil were excavated from **489-D**, sampled to confirm as non-hazardous and placed into the 488-1D to be covered by geosynthetics.

489-D Coal Pile Runoff Basin



November 2016

489-D Coal Pile Runoff Basin after excavation of coal fines and contaminated soil. Water management from recent rainfall has prevented grading and installation of sod. Discharge of water is ongoing.

D Area Ash Project Phase II



The 488-1D Coal Ash Basin prior to clearing and grubbing of vegetation.

D Area Ash Project Phase II



August 2016

488-1D Coal Ash Basin

D Area Ash Project Phase II



October 2016

488-1D Coal Ash Basin

D Area Ash Project



October 2016

D Area Ash Project



October 2016

D Area Borrow Pit – this area was developed for use as the borrow pit to supply fill material and almost all top soil for the D Area Ash Project.

Summary

- The D Area Ash Project has made good progress since construction start and is on schedule and within budget.
- The remediation efforts will meet CERCLA and South Carolina State Permit requirements for closure of all four facilities.
- Construction Complete is scheduled for 2019.

Questions?

