



Comprehensive Plan for the Accelerated Closure of the D-Area Operable Unit (DAOU)

SRNS-RP-2020-00319

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LIST OF ACRONYMS AND ABBREVIATIONS

AACEI	Association for the Advancement of Cost Engineering International
ACM	asbestos containing material
AM	Action Memorandum
ARAR	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BOA	basic order agreement
BRA	baseline risk assessment
BTEX	benzene, toluene, ethene, xylene
Ca(OH) ₂	calcium hydroxide
CAM	Control Account Manager
cm	centimeter
CRO	Community Reuse Organization
CSM	conceptual site model
CTL	construction management
D&D	Deactivation and Decommissioning
DA	Design Authority
DAOU	D-Area Operable Unit
DCPRB	D-Area Coal Pile Runoff Basin (489-D)
DCSA	D-Area Coal Storage Area (484-17D)
DPFR	Decommissioning Project Final Report
DEXOU	D-Area Expanded Operable Unit (consisting of the D-Area Rubble Pit (431-2D) and the D-Area Ash Basin (488-D))
DPSL	D-Area Process Sewer Lines
DWOF	D-Area Waste Oil Facility (484-10D)
E&T	project engineering and technology
EA	early action
EAROD	early action record of decision
EC&ACP	Environmental Compliance and Area Completion Projects
ECA	Environmental Compliance Authority
EE/CA	Engineering Evaluation/Cost Analysis
ERA	environmental risk assessment
FDE	Facility Decommissioning Evaluation
FFA	Federal Facility Agreement
FM	functional manager
FPE	Field Procurement Engineering
ft	feet
ft ²	square feet
in	inch
gal	gallon
GCO	Generator Certification Official
HHRA	human health risk assessment
HVAC	heating, ventilation, air conditioning
IWT	Industrial Wastewater Treatment
kg	kilogram

LIST OF ACRONYMS AND ABBREVIATIONS (*continued*)

L	liter
LUC	land use control
LUCIP	land use control implementation plan
m	meter
m ²	square meter
mg	milligram
NBN	no building number
PACM	presumed asbestos containing material
PBS	project baseline summary
PCB	polychlorinated biphenyls
PM	project manager
PTSM	principal threat source material
PWA	project work authorization
QA	quality assurance
RAIP	Remedial Action Implementation Plan
RAR	Removal Action Report
RACR	Remedial Action Completion Report
RCRA	Resource Conservation and Recovery Act
RCOC	refined constituent of concern
ROD	Record of Decision
RSER	Removal Site Evaluation Report
RSL	regional screening level
SCDHEC	South Carolina Department of Health and Environmental Control
SHPO	State Historic Preservation Offices
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site
SRS-CRO	SRS Community Reuse Organization
TAL	target analyte list
TCE	trichloroethylene
TCL	target compound list
TOC	total organic carbon
TSS	total suspended solid
USDOE	U.S. Department of Energy
USEPA	U.S. Environmental Protection Agency
WBS	work baseline structure
WM	waste management
WSRC	Westinghouse Savannah River Company

1.0 PROJECT OBJECTIVES / END-STATE / STRATEGY

The objective of this document is to present a proposed plan for the accelerated closure of the remaining portions the D-Area Operable Unit (DAOU). The plan identifies each waste unit and building/structure requiring action. It presents an integrated cleanup approach and a proposed schedule for remediation of the waste units and the deactivation and decommissioning (D&D) of the buildings/structures as funding becomes available. The total surface area being considered for remediation and D&D is 62 acres (Figure 1).

The end-state objectives for this proposed plan for accelerated closure of the DAOU include: 1) removal of 38 inactive D-Area buildings listed in Appendix K.1 in D Area (totaling over 166,330 ft²); and 2) final closure of the remaining four waste units in D Area (Figure 2). The four waste units are the D-Area Waste Oil Facility (484-10D) (DWOF), the D-Area Process Sewer Lines (NBN) (DPSLs), the Combined Spills from 483-D and Associated Areas (NBN), and the D-Area Coal Storage Area (484-17D) (Figure 1). Groundwater that has been impacted by D-Area operations is not included in this plan and is being addressed as part of the D-Area Groundwater (DAGW) Operable Unit (OU).

This integrated closure of D Area, as discussed in this plan, provides for a 20-year overall acceleration of the DAOU closure, which has a current Federal Facility Agreement (FFA) final ROD issue date of 2046 (FFA 1993) (Figure 3). This acceleration provides the following additional benefits:

- Reduced cost of long-term surveillance and maintenance of inactive facilities;
 - Decreased footprint in D Area as well as increased overall footprint reduction and skyline enhancement at the Savannah River Site (SRS) (Figure 2);
 - Improved access to implement the full extent of the DAGW treatability study and potential future DAGW actions;
 - Reduced uncertainty of contaminant source contributing to groundwater to allow for earlier completion of groundwater remedy; and
 - Potential recycling and reuse of valued building components and materials.
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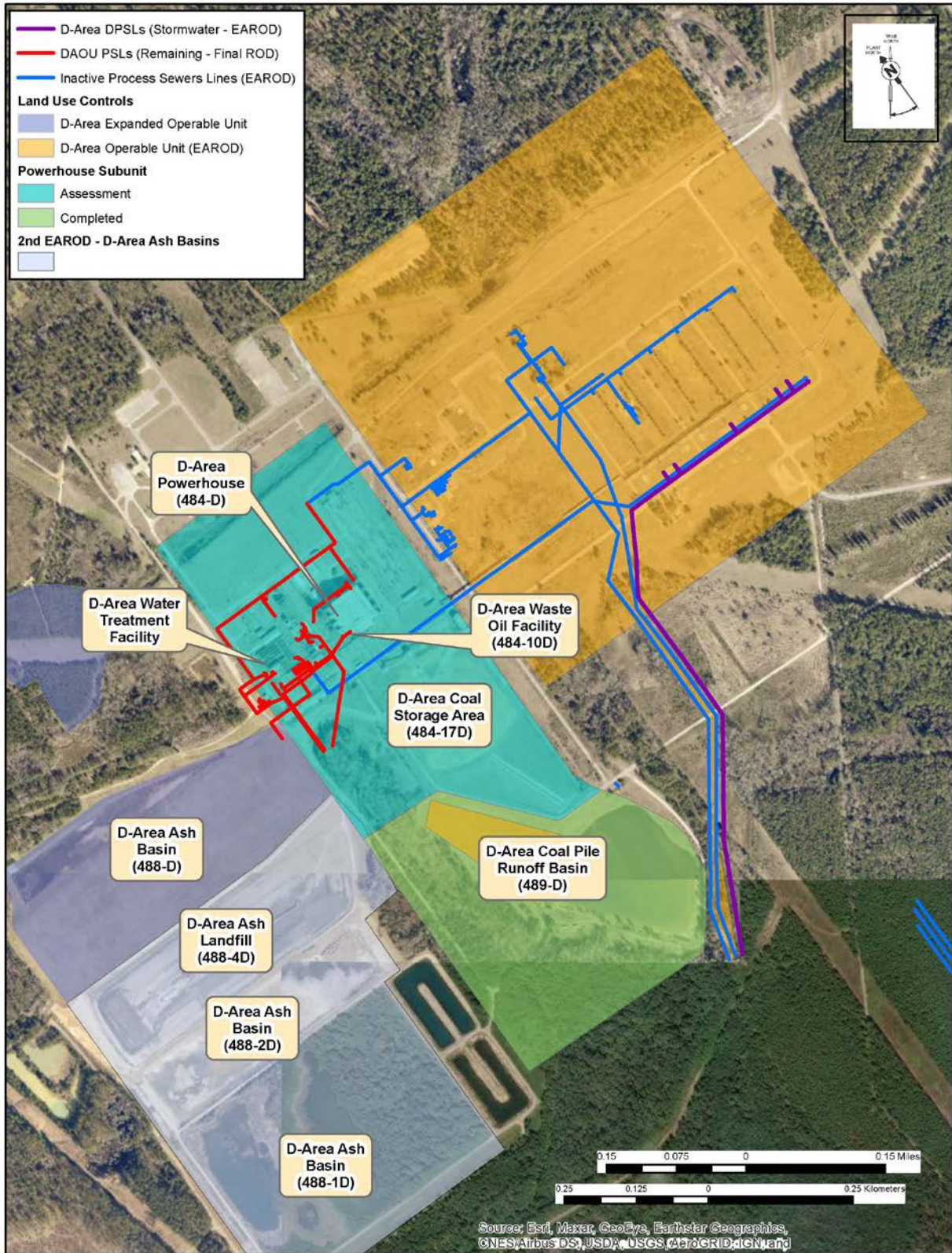


Figure 1. D-Area Operable Unit



Figure 2. D-Area Operable Unit – Before and After

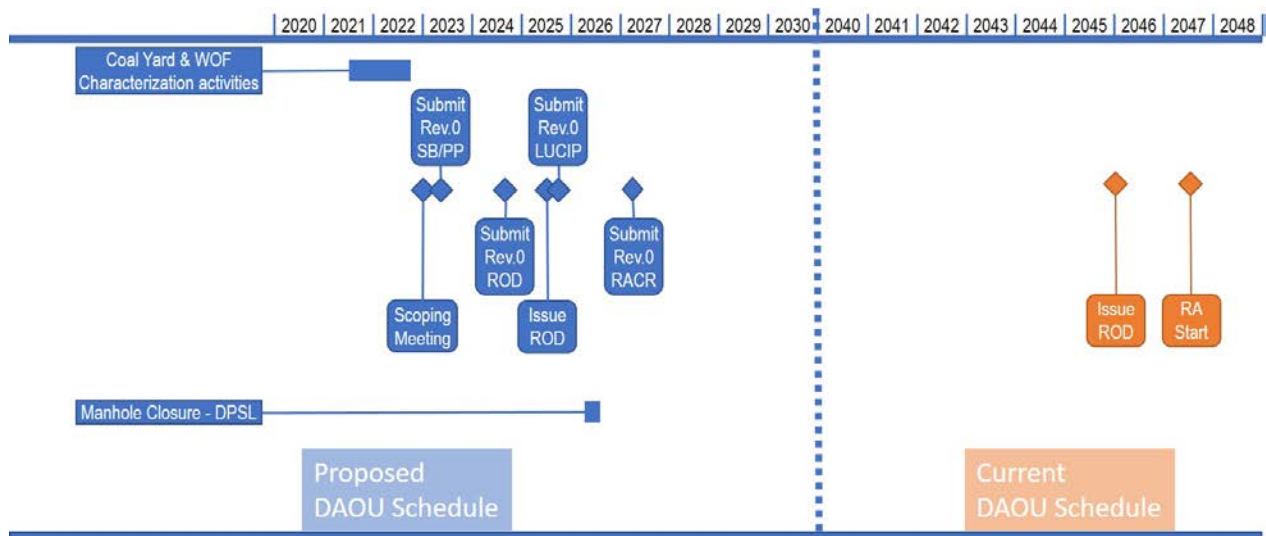


Figure 3. Current versus Proposed FFA schedule for DAOU

The proposed closure strategy involves the integration of facility D&D with waste unit closure. This strategy allows for an action-based execution of scope with minimal regulatory interface (Facility Decommissioning Evaluation [FDE]) approvals for D&D buildings/structures) until scoping of the SB/PP, which would then follow the typical Area Completion Projects documentation path. The proposed acceleration of the DAOU ROD from 2046 to 2025 is only possible after all D-Area facilities have been D&D and the slabs have been found to be consistent with LUCs. Figure 4 includes a summary of the execution strategy and likely remedies for the remaining waste unit.

D&D planning activities began in October 2019. Initial field D&D is slated to commence in 4th quarter fiscal year (FY) 2020 for only a limited number of buildings due to FY2020-FY2024 funding constraints and COVID-19 pandemic impacts. The schedule proposed reinitiates planning in October 2021 and continues through field work completion in FY2024. This timeline incorporates schedule optimization assumptions discussed in Section 7.0. With approval and implementation of this proposed approach, the projected ROD issuance date is by September 2025, which is a 20-year acceleration over the current FFA date of 2046. A simplified schedule for closure activities is shown in Figure 3. Construction activities will be managed per DOE site-level procedures and policies. DOE Order 413.3B requirements have been preliminarily evaluated and determined to be not applicable (Section 5.0). Therefore, impacts from DOE Order 413.3B are not



Figure 4. Likely or Anticipated Final Remedies for the Remaining DAOU Subunits

incorporated into the project execution strategy. SRNS will optimize and accelerate the execution of the work using mentor/protégé small business agreements, BOA subcontractors, the SRS Community Reuse Organization (SRS-CRO), and Site forces to meet the project goals.

2.0 BACKGROUND AND CURRENT STATUS/CONDITIONS

D Area consists of three main facility areas: the D-Area Heavy Water Facility (i.e., Bubble Towers), the Moderator Processing Facility, and the 484-D Powerhouse. These facilities began operation in the early 1950s. The Bubble Towers ceased operations in January 1982, the Moderator Processing Facility remained operational until the late 1990s, and the 484-D Powerhouse and its support facilities ceased operations in April 2012.

The D-Area Heavy Water Facility produced heavy water (deuterium oxide). The heavy water production process extracted naturally occurring deuterium oxide from Savannah River water using a series of cascade columns, or bubble tower, and hydrogen sulfide gas. D&D of the bubble towers was completed in 1994. The heavy water produced by the bubble towers required further processing prior to use as a moderator in the SRS reactors. Additional enrichment was performed at the Moderator Processing Facility which consisted of the Concentrator Building (420-D), the Rework Handling Facility (420-2D), the Finishing Building (421-D), the Moderator Handling and Storage Building (421-2D), the Drum Storage Facility (421-4D), and the Control Laboratory (772-D). D&D of the buildings associated with moderator processing was completed in 2006.

In 2011, the U.S Department of Energy (USDOE) issued an early action record of decision (EAROD) that documented and integrated the outcomes of previously completed removal actions and selected the final action (LUCs) to prevent unrestricted use for the Bubble Tower Subunit, Moderator Processing Subunit, D-Area Coal Pile Runoff Basin (489-D) (DCPRB) (Northern 25%),

D-Area Asbestos Pit (including restrictions against land disturbance), D-Area Waste Oil Facility (484-10D) (DWOFF) soil removal, and D-Area Process Sewer Lines as Abandoned (DPSLs) inside the area fence (SRNS 2011). The 2011 EAROD documented that there were no problems warranting action for the 904-50G Outfall, electrical transformers, and miscellaneous buildings.

In 2013, the USDOE, U.S. Environmental Protection Agency (USEPA) (Region 4), and South Carolina Department of Health and Environmental Control (SCDHEC) agreed to add the D-Area Ash Basin (488-1D), D-Area Ash Basin (488-2D), and D-Area Ash Landfill (488-4D) to the *Federal Facility Agreement for the Savannah River Site* (FFA 1993) (FFA) as subunits of the DAOU. The ash basins were permitted and operated under the SCDHEC Industrial Wastewater Treatment (IWT) regulations (Permit #7295), and the ash landfill was permitted and operated under a Class Two Solid Waste Landfill Permit (Permit #025800-1602). Three separate Removal Site Evaluation Report (RSER)/Engineering Evaluation/Cost Analysis (EE/CA) documents and Action Memorandum (AM) were submitted to perform the cleanup. These RSER/EE/CAs satisfy the substantive technical objectives of the closure plan requirements for these units. The applicable IWT operating permits have been terminated upon approval of the respective Removal Action Reports (RARs). The Solid Waste Landfill permit has been certified closed and shall be managed consistent with the post-closure phase of the SCDHEC permit as defined in the Applicable or Relevant and Appropriate Requirements (ARARs) until the remedial action specified in the *Second Early Action Record of Decision Alternative Selection of the D-Area Operable Unit (U)* (SRNS 2020k) is implemented.

Because of the extensive scope for the Second EAROD, cost, and duration, these removal actions were divided into two major phases. Phase 1 included the 488-2D Ash Basin and the 488-4D Ash Landfill. Phase 2 included the 488-1D Ash Basin and the DCPRB (Southern 75%) (Figure 1).

Summary tables of all D&D buildings/structures and waste units included in this proposed plan for accelerated closure of the DAOU are included in Appendix A. The administrative paths for all D-Area waste units and D&D facilities are identified in Appendix B.

3.0 SCOPE OF WORK

This section provides a brief description of the four waste units, proposed sampling that will be required to address data gaps, and any assumptions associated with each of the waste units. The

D&D scope is summarized in Section 3.5. Summary tables containing additional information and a photograph or figure for each of the D&D buildings and the waste units are included in Appendix A.

The following D-Area buildings are not included in this closure: Primary Substation (High Volt 115/13.8) (451-D) and the Telecommunications Building (702-D). These two structures are still being used for utility purposes.

3.1 DAOU Waste Units

3.1.1 DAOU Waste Unit Descriptions

3.1.1.1 D-Area Waste Oil Facility (484-10D)

The D-Area Waste Oil Facility (484-10D) (DWOFF) (environmental media) is located just south of the D-Area Powerhouse (484-D) (Figure 5). Table A-25 (Appendix A) provides summary information on the DWOFF (environmental media). Soils are the environmental media of concern at this unit.

The D-Area Oil Shed Building (484-10D), which is included in the D&D scope, was placed in operation in 1953 as a temporary storage area for used oil before it was burned in the D-Area boilers. Used oil consisting of engine lubricant, pump oil, kerosene, fuel oil, diesel oil, transformer oil, and gearbox oil was brought to the facility in tank trucks or drums and transferred to storage tanks. Table A-19 (Appendix A) includes additional information on the structure. The below discussion pertains to the environmental media (soils) associated with the DWOFF only.

3.1.1.2 D-Area Process Sewer Lines (DPSLs)

The D-Area Process Sewer Lines (DPSLs) were constructed in 1952 to carry wastewater from various heavy water processing facilities within D Area to a drainage ditch (904-50G) south of the DCPRB and to the D-001 Outfall Subunit (Figure 6). Table A-26 (Appendix A) provides summary information on the DPSLs. The wastewater was principally contaminated with tritium and hydrogen sulfide. The DPSLs traverse approximately 7,925 linear m (26,000 linear ft) of the DAOU. They are comprised of vitrified clay pipe and reinforced concrete piping ranging in diameter from 15.24 to 60.96 cm (6 to 24 in).

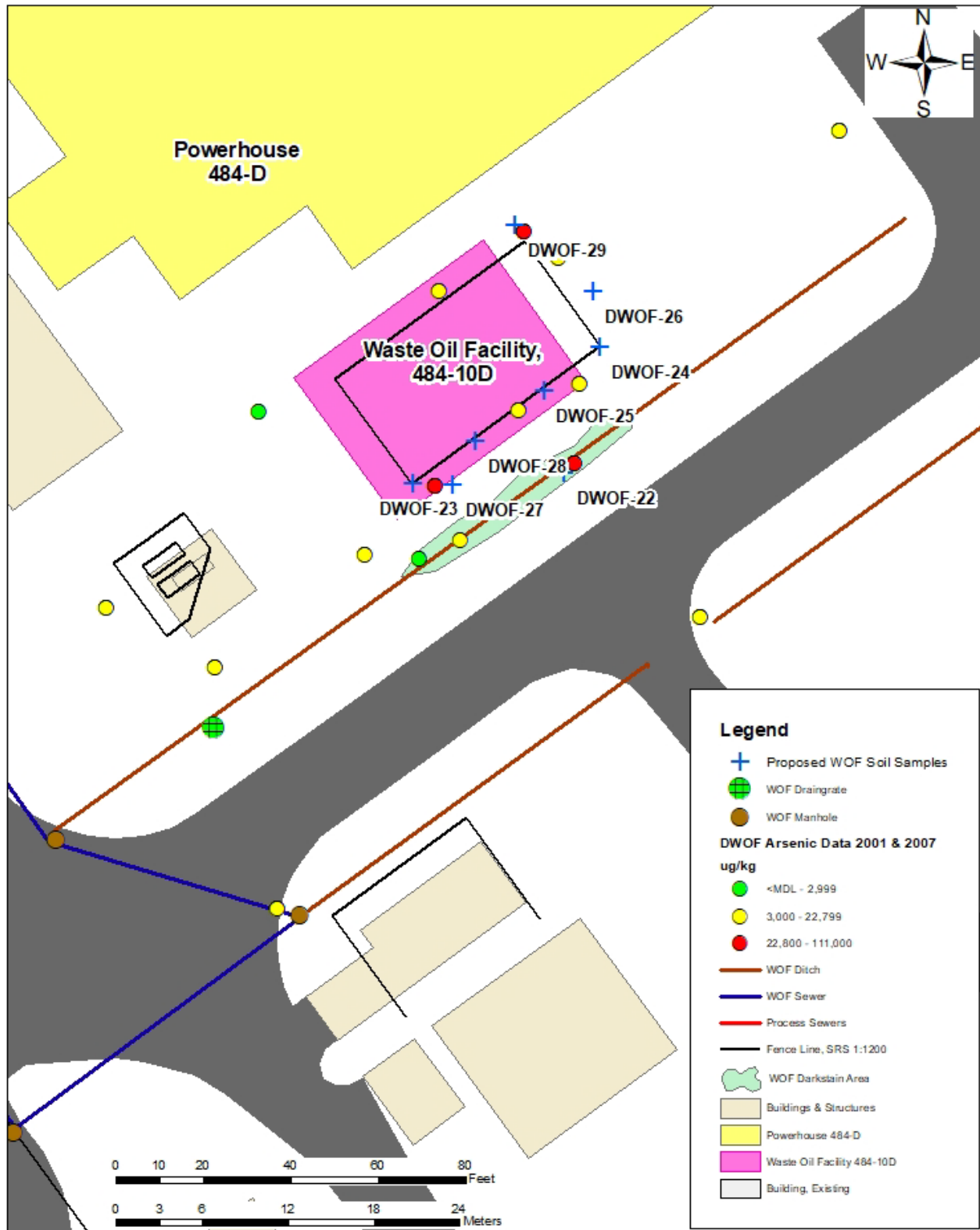


Figure 5. D-Area Waste Oil Facility (484-10D)

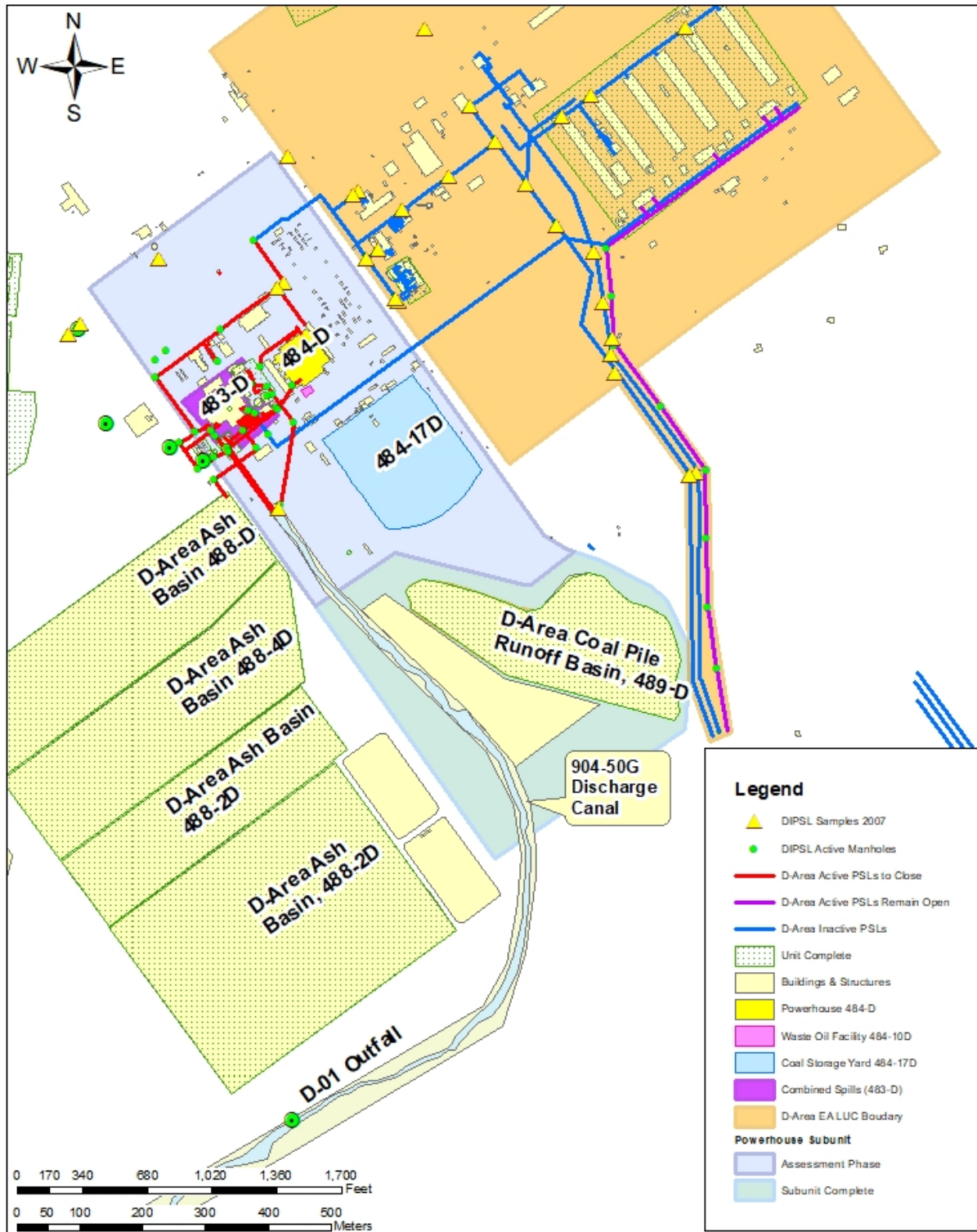


Figure 6. D-Area Process Sewer Lines (DPSLs)

The DAOU EAROD (SRNS 2011) identified a portion of the DPSLs (5,060 linear m [16,600 linear ft]) that could be closed (Figure 6). Forty associated manholes were plugged. Several of the manholes were not plugged in order to allow for stormwater drainage, thus resulting in a portion of the DPSLs remaining open. The manholes were visually inspected to determine whether they contained waste/sludge from effluent discharges. Most of the manholes were clear or contained just enough material to collect a sample. All samples were analyzed for TAL/TCL, gross alpha, nonvolatile beta, and tritium.

No contaminant migration or PTSM RCOCs were identified for the sediment in the DPSLs based on the evaluation of contaminant fate and transport and PTSM (WSRC 2009a). Because the process lines are below ground, there are no human health or ecological concerns.

The remaining DPSLs to be addressed as part of the final ROD includes about 2,377 linear m (7,800 linear ft). It is anticipated that a portion of these DPSLs will be evaluated for stormwater management.

3.1.1.3 Combined Spills from 483-D and Associated Areas, NBN

The Combined Spills from 483-D and Associated Areas is located west of the Powerhouse (484-D) (Figure 7). The Water Treatment Facilities (also referred to as 483-D and associated facilities) were constructed in 1952 to provide treatment to water pumped from the Savannah River. Water used for boiler feed was deionized and required pH adjustment. Only standard water treatment chemicals were used in this area, and there are no records of any radioactive material ever being introduced into this system. The neutralization system used both sulfuric acid and caustic solutions to adjust the pH of the water treated in the facility.

Several spills occurred in 483-D and associated facilities between 1985 and 1989. The details, including the quantities of chemical spilled are included in Table 1. All spills noted below were neutralized at the time of the occurrence and had minimal impact on the environment. Samples were collected from twelve locations and two depth intervals which targeted the spill areas. Samples were analyzed for the full TAL/TCL suite, gross alpha, nonvolatile beta, and tritium.

Based on the sampling results, no contaminant migration, PTSM, or human health RCOCs were identified for the surface soil near the Combined Spills from 483-D and Associated Areas based on

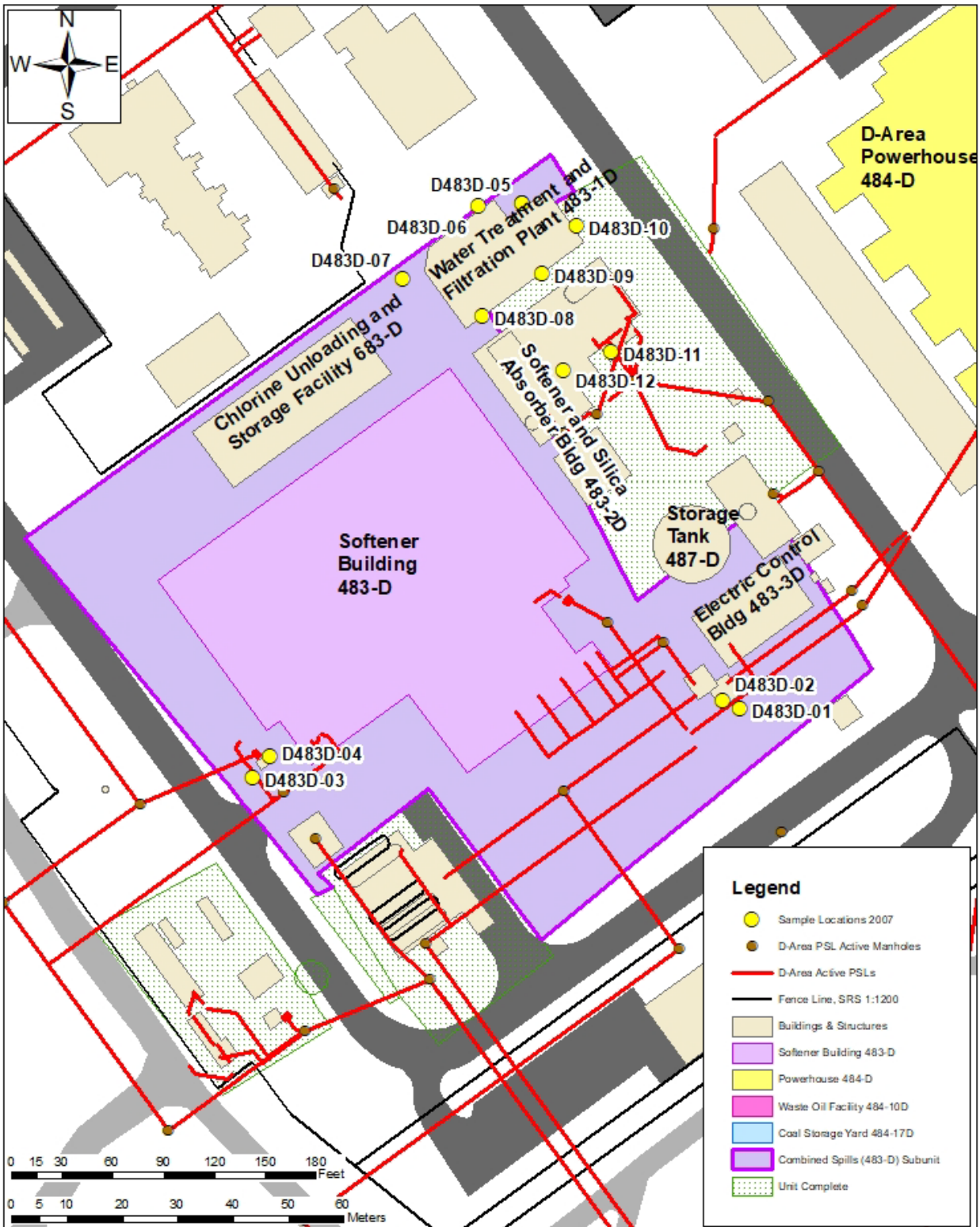


Figure 7. Combined Spills from the 483-D and Associated Areas

Table 1. Combined Spills from the 483-D and Associated Areas Spill Information

Date	Quantity	Material Released	Location
07/25/85	<1 gallon	Sulfuric acid	100 Area Storage Tank
11/03/85	7 gallons	Sulfuric acid	Containment Basin
11/24/85	2-3 gallons	Caustic solution	Neutralization System Piping
12/02/85	10 gallons	Neutralization spill pH 8.7	Neutralization System Piping
01/19/86	2-5 gallons	Neutralization spill pH 3.6	Neutralization System Piping
05/22/86	<2 gallons	Caustic spill	Tank Car Unloading Area
05/24/86	3 gallons	Sulfuric acid	Neutralization System Piping
06/22/86	<1 gallon	Neutralization spill pH 4.0	Waste Transfer Pump #2
07/03/86	5 gallons	Neutralization spill pH 2.5	Neutralization System Piping
01/13/87	300 gallons	Neutralization spill pH 11.5	400-Area Storage Tanks
10/09/87	4,000 gallons	Caustic spill	Caustic Tank
06/10/88	2,000 gallons	Neutralization spill pH 10.9	Equalization Tank
03/21/89	½ gallon	Sulfuric acid	Deionization Plant
04/06/89	<½ gallon	Sulfuric acid	Unloading Pump Skid Pan
09/14/89	100 gallons	Sewer water	Manhole near Outfall D-006

the assessments included in the baseline risk assessment for DAOU (SRNS 2009). An ecological risk assessment was not conducted on the Combined Spills from 483-D and Associated Areas since this unit is located in a predominantly industrial area, much of which is covered by concrete, asphalt, or gravel with no natural cover, food, or water sources that would tend to attract wildlife receptors. No remediation or removal actions have been conducted for the Combined Spills from 483-D and Associated Areas.

3.1.1.4 D-Area Coal Storage Area (484-17D)

The D-Area Coal Storage Area (484-17D) (DCSA) is associated with the D-Area Powerhouse (484-D). The DCSA was an approximately 6-hectare (15-acre) storage area for coal prior to its use in the D-Area Powerhouse (484-D) (Figure 8). The DCSA is currently listed on Appendix K of the FFA. SRNS proposes transferring the DCSA to Appendix C of the FFA as a source area to the scope of DAOU based on the presence of residual coal and low pH soil, in order for the DCSA to be addressed as part of the final action for the DAOU. Table A-28 (Appendix A) provides summary information on the DCSA.

During and after the D-Area Coal Storage Area (484-17D) operational period, rainwater leached through the stored coal, resulting in degradation of the iron sulfide (pyrite) commonly found in coal

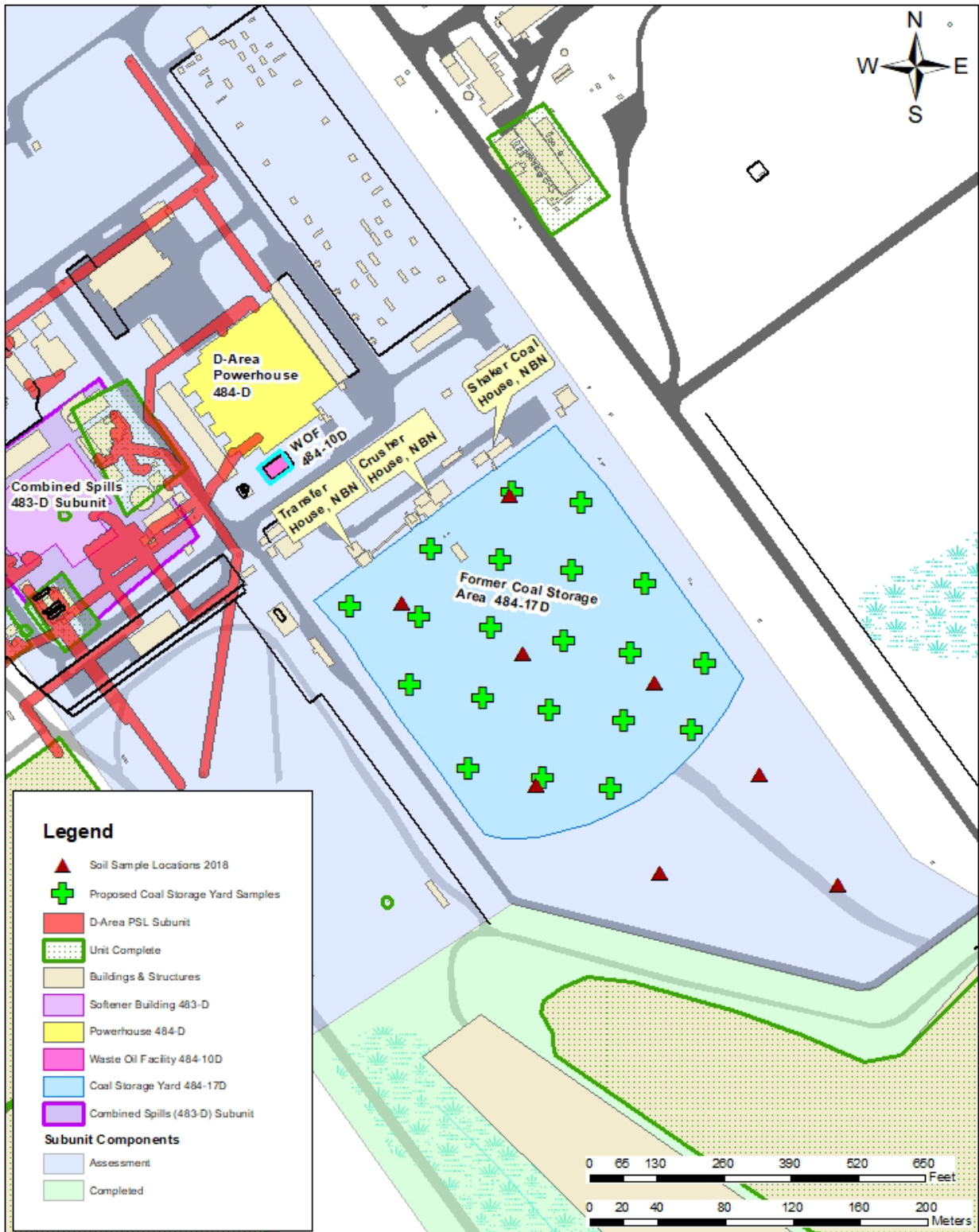


Figure 8. D-Area Coal Storage Area (484-17D)

to sulfuric acid when mixed with rainwater. Although a maintenance action in 2012 and 2013 removed most of the coal from the DCSA, infiltration of rainwater over the years through the stored coal caused the underlying vadose zone soil and groundwater to become acidified, with pH levels ranging from 3.5-4.0. Groundwater is shallow in D Area; the depth to the water table below the DCSA is approximately 3 to 4.6 m (10 to 15 ft) below ground surface. Groundwater in D Area has been shown to be elevated in concentrations of various metals, and many of the metal plumes coincide with the low pH area in the groundwater and/or nearby source areas including the DCSA and the DCPRB (SRNS 2018a).

In June 2018, soil samples for pH only were collected from eight locations throughout the DCSA at six depth intervals down to the water table. Most of the sampled locations and depths at the DCSA had pH levels between 3 and 4.5 indicating that all vadose zone soils associated with the DCSA have been affected by the coal leachate.

In 2020, a non-time critical removal action was initiated at the DCSA and included the addition of soil neutralization amendments to the vadose zone soils through the addition of agricultural lime (calcium carbonate) or effective calcium carbonate (e.g., quick lime, hydrated lime, etc.) mixed within the upper portion of the DCSA vadose zone soils to a targeted depth of 1.2 m (4 ft) below ground surface (SRNS 2018a). The addition of soil neutralization amendments was proposed to assist in returning local pH to natural background levels over time. A 5-cm (2-in) limestone gravel cover will be placed on top of the treatment area. It is expected the total depth of treatment will be able to reach approximately 1.2 m (4 ft) below ground surface.

Currently there are no buildings associated with the DCSA. However adjacent to the DCSA, are several coal handling structures which are associated with the 484-D Powerhouse: the Shaker House (NBN), the Crusher House (NBN), the Transfer House (NBN), and the Coal Handlers Shack (NBN). The structures are not listed in the FFA (FFA 1993) since they were likely considered to be ancillary structures associated with the 484-D Powerhouse. As part of this proposal, SRNS recommends that these coal handling facilities be specifically listed on Appendix K.1 of the FFA and decommissioning be sequenced to completed ahead of remedial activities for the DCSA. Removal of these buildings is needed to support the complete execution of the DAGW groundwater treatability study, which has injection wells located near these structures. Additional details for these structures are provided on Table A-21 (Appendix A).

3.1.2 DAOU Proposed Sampling to Address Data Gaps

3.1.2.1 D-Area Waste Oil Facility (484-10D)

The DWOF was investigated under three characterization programs: (1) Site Evaluation Program (1992 and 1993), (2) D-Area Expanded Operable Unit (DEXOU) (2001), and (3) D-Area Operable Unit (DAOU) (February and March 2007).

The Site Evaluation Program performed preliminary investigations at the DWOF including a 1992 soil gas survey and a 1993 radiological survey (WSRC 1993). Samples for soil gas were collected from 30 locations from a depth of 0.9 m (3 ft) below ground surface (bgs) and analyzed for C₁-C₄ and C₅-C₁₀ hydrocarbons, benzene, toluene, ethene, xylene (BTEX), and selected chlorinated hydrocarbons. Soil samples for the radiation survey were collected at random locations across the unit. With the exception of the gravel and concrete areas (which have a granite component), no radioactivity was detected. The soil gas and radioactivity data were used to bias the sampling conducted as part of the DAOU characterization.

The DWOF was previously investigated as part of the DEXOU to determine whether it was a potential source of TCE groundwater contamination, and whether it was contributing to contamination in the downstream wetland via surface water runoff. Six soil boring were advanced in the vicinity of the DWOF and sampled over depths from 0 to 3.0 m (10 ft) bgs. Samples were analyzed for the full TCL/TAL suite of analytes, total organic carbon (TOC), chromium VI, dioxins/furans, pH, RCRA characteristics (Toxicity Characteristic Leaching Procedure metals, corrosivity, ignitability, and reactivity), gamma spectroscopy, gross alpha, nonvolatile beta, and contingent radiochemical analyses. The soils sampling was superseded by the DAOU characterization data and was used to bias the sampling conducted during the DAOU investigation.

Sampling performed under the DAOU resulted in the identification of arsenic as a human health refined constituent of concern (RCOC) for surface soil at the DWOF. Arsenic is an element commonly found in coal. Considering the proximity of the DWOF to the powerhouse, its presence in DWOF soil is consistent with operations in D Area.

Based on the previous sampling results, there are no ecological, contaminant migration, or principal threat source material (PTSM) RCOCs for the DWOF.

In order to address the risk to human health, a removal action at the DWOF was conducted, which included excavation and consolidation of contaminated soil from the DWOF into the DCPRB.

Excavation, with the exception of the exclusion areas, in and around DWOF was completed using “Hydro Excavation Methods” to a depth of 0.3 m (1 ft). The excavated area was then backfilled with 0.25 m (10 in) of common fill and 0.05 m (2 in) of gravel. The prior removal action did not remove all arsenic contaminated soil due to structural interferences.

To address data gaps pertaining to the DWOF, soil samples will be collected at eight locations (Figure 5) at two depth intervals (0.0 to 0.3 m and 0.3 to 1.2 m [0 to 1 ft and 1 to 4 ft]) for TAL analyses. Four of the sample locations will target soil left in place by the removal action, and the other four sample locations will target previous arsenic hot spots.

3.1.2.2 D-Area Process Sewer Lines (DPSLs)

No additional characterization is needed for the DPSLs, as the DAOU RFI/RI/BRA has addressed all of the characterization needs for this unit (WSRC 2009a).

3.1.2.3 Combined Spills from 483-D and Associated Areas, NBN

No additional characterization is needed for the Combined Spills from 483-D and Associated Areas, as the DAOU RFI/RI/BRA has addressed all of the characterization needs for this unit (WSRC 2009a).

3.1.2.4 D-Area Coal Storage Area (484-17D)

To address data gaps associated with the DCSA, characterization samples for the DCSA are required to determine human health, ecological, contaminant migration, and PTSM RCOCs. Twenty sample locations at three depth intervals (0.0 to 0.3 m, 0.3 to 1.2 m and 2.4 to 3.0 m [0 to 1 ft, 1 to 4 ft and 8 to 10 ft]) are proposed for TCL/TAL analyses, gross alpha and nonvolatile beta analyses with contingent radionuclide analyses if trigger limits are exceeded. As part of this proposal, these DCSA samples will be collected concurrently with the DAGW verification sampling, which will assess the effectiveness of the removal action. A risk analysis will be conducted to support the proposed plan scoping with the regulators.

3.1.3 DAOU Assumptions

The following assumptions are associated with the DWOF:

- A pre-characterization sampling and analysis plan will include eight locations, which will be implemented after D&D of the DWOF.
-

- The DAOU RFI/RI/BRA only identified arsenic as an RCOC, so soil samples will only require TAL analyses.
- No additional soil removal will be needed, but LUCs will be required as part of the final ROD for DAOU.

The following assumptions are associated with the DPSLs:

- Previous characterization completed in 2007 as part of the DAOU is adequate.
- Manholes will be grouted as an engineering control to restrict access to potentially impacted areas and for general safety, which is consistent with the DPSLs closed under the DAOU EAROD (SRNS 2011).
- LUCs will remain the preferred alternative for the final ROD for DAOU.

The following assumptions are associated with the Combined Spills from 483-D and Associated Areas:

- Previous characterization in 2007 as part of the DAOU is adequate.
- LUCs will be required as part of the final ROD for DAOU.

The following assumptions are associated with the DCSA:

- A pre-characterization sampling and analysis plan (twenty locations with TCL/TAL analyses, gross alpha and nonvolatile beta analyses) will be prepared to determine the nature and vertical extent of contamination. Sampling is expected to occur concurrently in 3rd quarter of FY2022 with samples collected to evaluate the effectiveness of the removal action. If the sampling results indicate a significant contaminant risk is present, then the project team will discuss the appropriate path forward (i.e. RI/FS process) with the Core Team to ensure residual risk is protective of human health and the environment. This scenario could add two years to the final ROD schedule.
 - Any additional remediation of the vadose zone will be addressed as part of the DAGW OU.
 - LUCs will be required as part of the final ROD for DAOU.
-



Figure 9. DAOU D&D Facilities and FFA Waste Units

3.2 DAOU D&D Facilities

The D&D scope for the DAOU includes 38 inactive D-Area buildings totaling 166,330 ft². Appendix A includes more detailed information pertaining to each of the DAOU D&D buildings/structures. Figure 9 shows many of the buildings/structures that will be D&D as part of this scope.

The following assumptions are associated with the D&D Facilities:

- FDEs and DPFRs will be developed and approved by the regulatory agencies per existing protocols and procedures.
- Except for the Powerhouse (484-D), facility decommissioning actions will employ the Simple Model.
- Timing of FDE and DPFR approval will align with the accelerated closure timeline.
- Decommissioning remnants (slabs) will be included as part of the final DAOU ROD. LUCs are expected to be the post-decommissioning final action.
- Impacts from DOE Order 413.3B are not incorporated into the project execution strategy.

4.0 RISK MANAGEMENT

The process for identifying and analyzing project risks and opportunities associated with Environmental Compliance and Area Completion Projects (EC&ACP) scope at the project baseline summary (PBS) level is contained in Manual 14B, *Conduct of Risk and Opportunity Management*. The results of the risk and opportunity assessment are documented in the *PBS-SR-0030 Soils and Groundwater Remediation and Nuclear Facilities Deactivation and Decommissioning (D&D) Risk and Opportunity Analysis Report (ROAR) (Y-RAR-B-00009)*. Utilization of this risk and opportunity management process increases the overall effectiveness of the EM work associated with this project so that risks are managed to acceptable levels, and opportunities can be realized to enhance scope completion (SRNS 2014).

ACP sub-project activities contain specialized risk factors. The factors are associated with uncertainties in characterization data (e.g., nature and extent of contamination), technology maturity, and regulatory direction. Risk screening is performed at certain phases to identify the

risks and determine whether risk management is warranted. Risk screening in EC&ACP is accomplished through the completion of risk checklists developed for the following categories:

- Characterization Risk Screening
- Engineering and Construction Risk Screening
- Operations Risk Screening (if applicable)

The performance of risk screening includes the following areas: safety, environment, disposition, support, procurement, programmatic, cost, and schedule. The categories of safety, environment, disposition, support, and procurement are considered technical risks. Technical risk is defined as the potential impacts that arise from a new design or innovative approach and/or attempts to meet new requirements or constraints. Programmatic risks are those associated with possible disruptions caused by decisions, events, or actions that affect project outcome but are not within the EC&ACP project manager's (PM's) control.

Cost and schedule risks differ from technical and programmatic risks in that they are indicators of project status and may be impacted by the other categories of risk. All categories of risk are evaluated for potential impacts to the projects and for the interface between the risks.

5.0 EXECUTION PLAN

The Area Completion Projects will adhere to its program strategy for safely executing scope as discussed in the *Area Completion Projects Program Team Execution Plan (U)* (SRNS 2014). The intent is to provide project management/controls guidance, using a tailored approach, in accordance with Department of Energy Orders and Guidance, SRNS project management and financial processes, and applicable site guidance and procedures.

Work Scope Categorization per DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, has been preliminarily addressed utilizing the Work Scope Categorization and Funding/Authorization Requirements Checklist, Rev.1. Preliminary results of the checklist determine that the project scope is not considered construction work, it is to be managed according to DOE site level procedures and policies, and the DOE Order 413.3B requirements would not be applicable to the management of the project.

5.1 Project Team Organization

EC&ACP utilizes a matrix organization, creating a project-specific team to execute the EC&ACP mission and objectives. The proposed work scope for the DAOU is maintained and coordinated under the EC&ACP group. The EC&ACP PM, who employs integrated project teams, leads EC&ACP project execution. The teams are composed of project management, and functional and support personnel (Figure 10). These project teams implement the cleanup mission through a series of sub-projects assigned to each team.



Figure 10. Generic D-Area Operable Unit Closure Team

5.2 Roles and Responsibilities

Project team personnel are assigned by Functional Managers (FM) to work under the direction of the EC&ACP PM. The EC&ACP PM delegates responsibility to the Control Account Manager (CAM) who directs the project activities (scope, budget, schedule, key deliverables, cost, and milestones) and provides daily direction to the project team.

The FM is responsible for providing appropriately trained and qualified personnel to work as project team members and oversight of the team activities to ensure project team adherence to functional processes and quality of work.

The FM is also responsible for maintaining technical qualifications of team members, developing and implementing work processes, and ensuring consistency between project teams.

The following is a list of typical functional team members involved on an as-needed basis throughout the life of a project. Additional members may be added as appropriate.

- Control Account Manager (CAM)
- Environmental Compliance Authority (ECA)
- Construction Management (CTL)
- Waste Management (WM)
- Generator Certification Official (GCO)
- Projects Control Engineers
- Quality Assurance (QA) Representative
- Safety Engineer and Industrial Hygienist
- Field Procurement Engineering (FPE)
- Project Engineering and Technology (E&T)
- Design Authority (DA)
- USDOE Representative

Additional information regarding specific roles and responsibilities are identified in the *Area Completion Projects Program Team Execution Plan (U)* (SRNS 2014).

5.3 Regulatory Strategy

The proposed regulatory closure strategy involves the integration of facility D&D with waste unit closure under the FFA (Figure 11). The substantial amount of work completed to date through early actions for DEXOU and DAOU significantly reduces the amount of additional waste unit characterization needed to reach the final remedial decision for DAOU.

This plan includes collecting necessary pre-Work Plan characterization data, which will be presented to the Core Team in a statement of basis / proposed plan (SB/PP) scoping meeting. Because limited data is required for the DWOFF and DCSA, a traditional Work Plan and SAP is not necessary. Existing data and current waste unit knowledge suggests that land use controls (LUCs), including access restrictions (grouting of manholes) for the DPSLs, will be an acceptable final

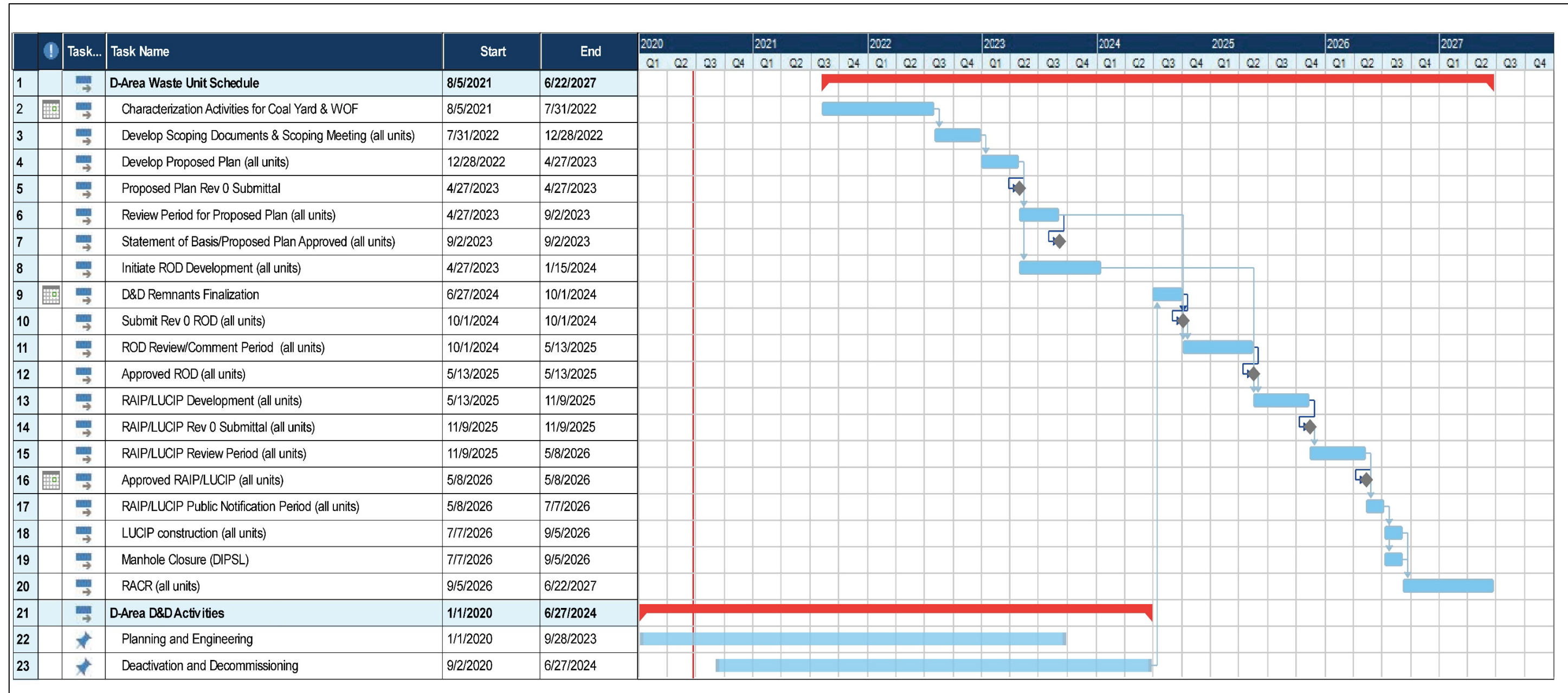


Figure 11. D-Area Operable Unit FFA Waste Unit Schedule

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remedy for DAOU. Therefore, SRNS believes the RI/BRA/FS phase of documentation can also be omitted. The problem warranting action and a limited set of alternatives will be presented at the SB/PP scoping meeting, and the supporting information for the SB/PP can be provided as an attachment. This strategy allows for an action-based execution of scope with minimal regulatory interface (FDE [facility decommissioning evaluation] approvals for D&D buildings/structures) until scoping of the SB/PP, which would then follow the typical area completion documentation path. Completion of D&D for the facilities discussed in the plan is required prior to submittal of the Revision 0 final ROD for DAOU, which is anticipated to document no further remedial action and help identify LUCs that are appropriate for remnant building slabs.

FDEs and DPFRs will be developed and approved by the regulatory agencies per existing protocols and procedures. Except for the 484-D Powerhouse, facility decommissioning actions are expected to employ the Simple Model. Timing of FDE and DPFR approval will align with the accelerated closure timeline. As warranted, post decommissioning actions as well as decommissioning remnants will be considered and addressed as part of DAOU closure. As D&D of the D-Area facilities are completed, the post-decommissioning remnants (typically slabs) will be incorporated into the DAOU final ROD for final closure. It is expected that LUCs will be the preferred remedy for these remnants.

5.4 Procurement Strategy

The Project Procurement Strategy as contained in this section has been developed to provide high level description on how the procurement strategy will be implemented in major areas such as Engineering, regulatory documentation, and field D&D and construction. The procurement strategy addresses specific requirements and responsibilities of the appropriate SRS personnel for planning and executing the day-to-day procurement related activities necessary to implement the overall Procurement Strategy. All procurement activities will be conducted in accordance with established SRS Manuals, Procedures, and Guides.

The overall proposed plan for accelerated closure of the DAOU consists of numerous smaller projects within, essentially a project for each waste unit and D&D facility. Each D&D project includes three distinct parts: 1) planning and engineering; 2) deactivation; and 3) decommissioning. The planning and engineering for each waste unit and D&D facility will be performed by SRNS

personnel. The deactivation and decommissioning parts will be performed by a subcontractor using a competitive bid under the existing Basic Order Agreements (BOAs) in place or procured using the SRNS mentor/protégé program.

Each waste unit will be comprised of two main parts: 1) engineering and regulatory documentation, and 2) remedial action (or construction) phase. The engineering and regulatory documentation will be performed by SRNS personnel. The remedial action phase, if required by the final ROD for DAOU, will be subcontracted out under competitive bid.

5.5 Construction Strategy

The acceleration of the DAOU closure is largely dependent on accelerating the completion of facility decommissioning scope. The D&D completion schedule shown in Figure 12 sequences the field work starting with the lowest complexity facilities for decommissioning and increasing complexity up to the decommissioning of the Powerhouse (484-D). This sequencing is mirrored by the submittal sequence of the FDEs for the facilities, since decommissioning cannot begin until regulatory approval of the FDEs has been received.

DOE Order 413.3B requirements have been informally evaluated and determined to be not applicable. Therefore, impacts from DOE Order 413.3B are not incorporated into the project execution strategy.

5.6 Work Breakdown Structure

The work breakdown structure (WBS) grouping organizes and defines the total scope of the project. The primary objective of this structure is to define and arrange all authorized work at a prescribed level for program management, data collection, and reporting. The design of the structure employs a minimum number of levels while still providing the appropriate detail to support control of activities performed in completion of a given technical objective. As the WBS level increases, the definition and detail of project components is further identified. EC&ACP utilizes the site WBS to budget and delineate work scope. The WBS Structure represents the Control Account. These Control Accounts have been developed so that the RCRA and CERCLA scope to be performed within EC&ACP is standardized across the entire program. The WBS Structure is typically built in the baseline schedule and imported into the cost processor. WBS Dictionaries will be prepared for the projects that exceed \$20 million.

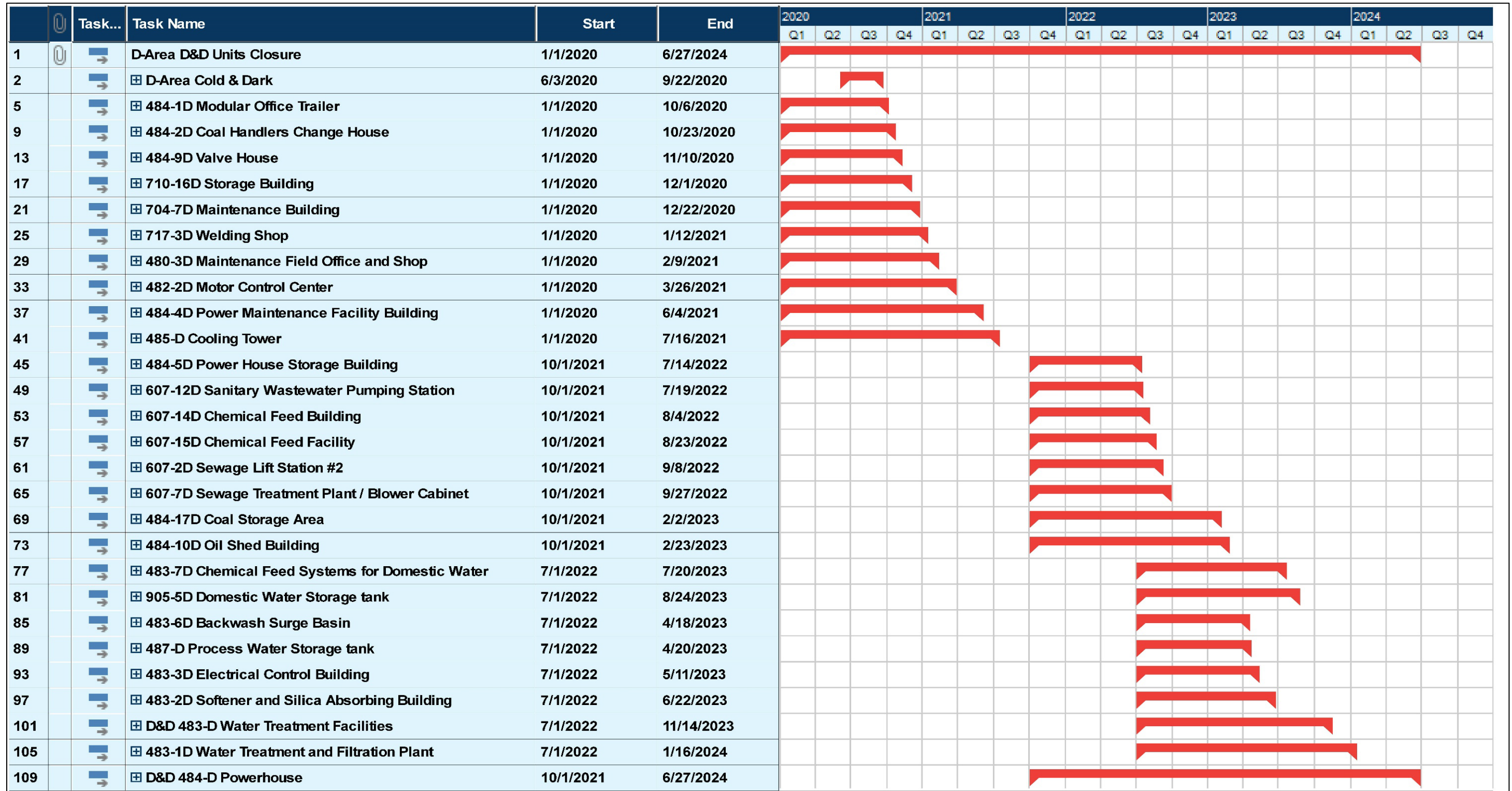


Figure 12. Accelerated Schedule for D-Area Operable Unit D&D Facilities

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The WBS Dictionary is a narrative summary description of each WBS element. The WBS Dictionary shall include a complete definition of the entire work scope of the project. Approved changes to the project scope that affect the WBS Dictionary summary narratives and Project Work Authorization (PWA) will be incorporated.

6.0 COST ESTIMATES

Cost estimates for each of the waste units and D&D buildings are included in the summary tables in Appendix A, are documented in detail in *Cost Estimates for the Closure of the D-Area Operable Unit* (SRNS 2020j) and provided in Table 2. These estimates were developed in accordance with Manual 6B *Program Management*, Procedure 1.7 “Cost Estimates” requirements. Most of the estimates fit “Class 3” according to the Association for the Advancement of Cost Engineering International (AACEI) Estimate Classifications Table referenced within the Cost Estimates procedure with an expected accuracy of -20% to +30%. The exception to these estimates is the 484-D powerhouse estimate, which is discussed in Section 6.5. The cost estimates for the DAOU closure assume that field activities will be initiated in FY2020. While some activities will initiate in FY2020, the bulk of the field work will be executed in the out-years. The FY2020 start was assumed to provide cost basis in 2020 dollars using FY2020 as “Year 1” from a project planning perspective.

The SRS-CRO has expressed interest in assumption of building responsibility for D&D activities. The engagement of the SRS-CRO not only would accelerate scope execution but will save in project cost while putting resources back into the Central Savannah River Area economy. The anticipated benefits of SRS-CRO involvement were not incorporated into the cost estimating process. However, as the SRS-CRO does complete the D&D of structures within this proposed plan for accelerated closure of the DAOU the cost savings will be accounted for based on the cost estimates included in this plan.

6.1 D-Area Waste Oil Facility (484-10D) Estimate

The estimated costs for the Building 484-10D scope will be for the activities associated with D&D of D-Area Oil Shed Building (484-10D) which are accounted for in Section 6.5, D&D Facilities Estimate. At this time, it is assumed that LUCs will be required for the DWOF (environmental media) as part of the final ROD for DAOU. Based on previous experience and labor analysis

included in *Technical Memorandum Task Analyses for EC&ACP Engineering Documentation (U)* (SRNS 2018b), the costs for installation of LUCs and the documentation required for the final ROD have been included in this proposed plan for accelerated closure of the DAOU and are documented in *Cost Estimates for the Closure of the D-Area Operable Unit* (SRNS 2020j).

6.2 D-Area Process Sewer Lines Estimate

The estimate for the work required for the closure of the DPSLs is dependent on three main assumptions: 1) the data collected during the 2007 characterization of the DAOU is adequate to make remedial decisions, 2) manholes will be grouted as an engineering control to restrict access to impacted areas and for general safety, and 3) LUCs will remain the preferred alternative for the final ROD for DAOU. The cost estimate for grouting manholes was calculated using prior experience on SRS. Based on previous experience and labor analysis included in *Technical Memorandum Task Analyses for EC&ACP Engineering Documentation (U)* (SRNS 2018b), the costs for implementing LUCs and the documentation required for the final ROD have been included in this proposed plan for accelerated closure of the DAOU and are documented in *Cost Estimates for the Closure of the D-Area Operable Unit* (SRNS 2020j).

6.3 Combined Spills from 483-D and Associated Areas Estimate

The estimate for the work required for the closure of the Combined Spills from 483-D and Associated Areas is dependent on the assumptions that the data collected during the 2007 characterization of the DAOU is adequate, and LUCs will be required as part of the final ROD for DAOU. Based on previous experience and labor analysis included in *Technical Memorandum Task Analyses for EC&ACP Engineering Documentation (U)* (SRNS 2018b), the costs for implementing LUCs and the documentation required for the final ROD have been included in this proposed plan for accelerated closure of the DAOU and are documented in *Cost Estimates for the Closure of the D-Area Operable Unit* (SRNS 2020j).

6.4 D-Area Coal Storage Area (484-17D) Estimate

The soil and vadose zone at the DSCA are being treated with calcium hydroxide (lime) as part of a removal action for DAGW OU. This project has entered the field execution stage and has been through the cost estimating process. Any additional remediation of the vadose zone will be

Table 2. DAOU Waste Units and D&D Building Facility Cost

D-AREA FACILITIES (DAOU) ACCELERATED UNIT CLOSURE PLAN - FINAL ESTIMATE REPORT

Item #	WBS #	DESCRIPTION - BUILDING STRUCTURE TITLE	Estimate Revision	Pricing Basis	Planning Years	Performance Year	SRS - Direct Hire Costs	S/C Deactivation Cost (Direct Work)	S/C Decommissioning Cost (Direct Work)	S/C Mark-Ups (Includes Bond/Insurance)	Escalation	Site Overheads	TEC \$K (Unburdened)	TPC \$K
1	01.29.32.01.10.15.03.02	454-D Diesel Fuel Storage Tank	Rev. 1	FY21	FY-20	FY21	\$ 102,432	\$ -	\$ 116,203	\$ 38,562	\$ -	\$ 120,908	\$ 260,354	\$ 381,263
2	01.29.32.01.10.15.03.03	454-1D Diesel Fuel Unloading Facility	Rev. 1	FY21	FY-20	FY21	\$ 11,495	\$ -	\$ 35,424	\$ 16,790	\$ -	\$ 31,299	\$ 64,986	\$ 96,285
3	01.29.32.01.10.15.03.04	480-3D Maintenance Field Office and Shop	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ 75,570	\$ 49,151	\$ 48,913	\$ -	\$ 130,872	\$ 292,607	\$ 423,479
4	01.29.32.01.10.15.03.05	482-2D Motor Control Center	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ 70,686	\$ 55,489	\$ 50,676	\$ -	\$ 132,374	\$ 295,964	\$ 428,338
5	01.29.32.01.10.15.03.10	483-7D Chemical Feed Systems for Domestic Water	Rev. 0	FY21	FY21-22	FY22	\$ 226,634	\$ -	\$ 340,150	\$ 106,881	\$ 3,690	\$ 319,421	\$ 676,813	\$ 999,924
6	01.29.32.01.10.15.03.11	484-10D Oil Shed Building	Rev. 1	FY21	FY21-22	FY22	\$ 142,111	\$ -	\$ 119,946	\$ 41,331	\$ 1,227	\$ 144,567	\$ 306,762	\$ 452,556
7	01.29.32.01.10.15.03.12	484-12D Storage Building	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ -	\$ 84,667	\$ 25,701	\$ -	\$ 109,035	\$ 226,386	\$ 335,421
8	01.29.32.01.10.15.03.13	484-13D Storage Building	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ -	\$ 101,901	\$ 32,678	\$ -	\$ 120,967	\$ 251,160	\$ 372,127
9	01.29.32.01.10.15.03.14	484-15D Storage Shed	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ -	\$ 95,257	\$ 29,603	\$ -	\$ 116,166	\$ 241,193	\$ 357,360
10	01.29.32.01.10.15.03.15	484-17D Coal Storage Area	Rev. 1	FY21	FY21-22	FY22	\$ 113,899	\$ 63,200	\$ 615,625	\$ 219,201	\$ 9,152	\$ 495,647	\$ 1,046,789	\$ 1,551,589
11	01.29.32.01.10.15.03.16	484-1D Modular Office Trailer	Rev. 0	FY20	FY-20	FY20	\$ 107,217	\$ 31,813	\$ 60,523	\$ 36,529	\$ -	\$ 106,910	\$ 239,031	\$ 345,941
12	01.29.32.01.10.15.03.17	484-2D Coal Handlers Change House	Rev. 0	FY20	FY-20	FY20	\$ 107,217	\$ -	\$ 59,079	\$ 22,302	\$ -	\$ 85,164	\$ 190,411	\$ 275,575
13	01.29.32.01.10.15.03.18	484-4D Power Maintenance Facility Building	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ 54,856	\$ 160,317	\$ 79,448	\$ -	\$ 186,106	\$ 416,100	\$ 602,206
14	01.29.32.01.10.15.03.19	484-5D Power House Storage Building	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ 17,153	\$ 13,359	\$ 13,642	\$ -	\$ 76,645	\$ 159,137	\$ 235,783
15	01.29.32.01.10.15.03.20	484-7D Storage Building	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ -	\$ 79,935	\$ 23,411	\$ -	\$ 105,565	\$ 219,181	\$ 324,746
16	01.29.32.01.10.15.03.21	484-9D Valve House	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ -	\$ 89,385	\$ 25,435	\$ -	\$ 103,739	\$ 231,940	\$ 335,679
17	01.29.32.01.10.15.03.22	485-D Cooling Tower	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ 20,369	\$ 286,438	\$ 98,700	\$ -	\$ 236,276	\$ 528,270	\$ 764,546
18	01.29.32.01.10.15.03.23	607-12D Sanitary Wastewater Pumping Station	Rev. 1	FY21	FY21-22	FY22	\$ 11,371	\$ -	\$ 21,921	\$ 9,681	\$ 85	\$ 20,582	\$ 43,763	\$ 64,430
19	01.29.32.01.10.15.03.24	607-14D Chemical Feed Building	Rev. 1	FY21	FY-21	FY21	\$ 34,156	\$ -	\$ 67,980	\$ 23,143	\$ -	\$ 59,059	\$ 127,172	\$ 186,231
20	01.29.32.01.10.15.03.25	607-15D Chemical Feed Facility	Rev. 1	FY21	FY-21	FY21	\$ 45,622	\$ -	\$ 44,691	\$ 20,165	\$ -	\$ 53,381	\$ 112,089	\$ 165,470
21	01.29.32.01.10.15.03.26	607-2D Sewage Lift Station #2	Rev. 1	FY21	FY21-22	FY22	\$ 11,371	\$ -	\$ 20,473	\$ 9,207	\$ 85	\$ 19,653	\$ 41,785	\$ 61,523
22	01.29.32.01.10.15.03.27	607-7D Sewage Treatment Plant / Blower Cabinet	Rev. 1	FY21	FY21-22	FY22	\$ 11,371	\$ -	\$ 16,029	\$ 7,163	\$ 50	\$ 16,524	\$ 35,153	\$ 51,727
23	01.29.32.01.10.15.03.28	683-D Chlorine Unloading and Storage facility	Rev. 1	FY21	FY-20	FY21	\$ 113,899	\$ -	\$ 125,167	\$ 42,495	\$ -	\$ 132,367	\$ 285,028	\$ 417,395
24	01.29.32.01.10.15.03.30	704-7D Maintenance Building	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ 16,636	\$ 80,779	\$ 37,449	\$ -	\$ 113,118	\$ 252,910	\$ 366,028
25	01.29.32.01.10.15.03.31	710-16D Storage Building	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ -	\$ 58,302	\$ 20,515	\$ -	\$ 87,449	\$ 195,519	\$ 282,968
26	01.29.32.01.10.15.03.32	717-3D Welding Shop	Rev. 0	FY20	FY-20	FY20	\$ 115,031	\$ -	\$ 66,496	\$ 24,947	\$ -	\$ 93,254	\$ 208,499	\$ 301,753
27	01.29.32.01.10.15.03.34	905-5D Domestic Water Storage tank	Rev. 1	FY21	FY21-22	FY22	\$ 113,899	\$ -	\$ 214,315	\$ 81,144	\$ 2,036	\$ 196,050	\$ 415,635	\$ 613,721
28	01.29.32.01.10.15.04	484-D Powerhouse (Asbestos Abatement Scope)	Rev. 1	FY21	FY21-22	FY23	\$ 1,166,895	\$ 4,175,895	\$ -	\$ 1,880,383	\$ 75,186	\$ 3,411,861	\$ 7,373,396	\$ 10,860,443
29	01.29.32.01.10.15.04	484-D Powerhouse (Decommissioning Scope ROM)	n/a	n/a	FY21-23	FY23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,300,000
30	01.29.32.01.10.15.05	D&D Water Treatment Facilities	Rev. 1	FY21	FY21-22	FY23	\$ 1,999,312	\$ 1,350,608	\$ 3,969,898	\$ 1,792,788	\$ 131,812	\$ 4,301,632	\$ 9,259,267	\$ 13,692,711
31	01.29.32.01.10.15.06.01	Waste Unit - D-Area Process Sewer Lines (PSL)	Rev. 1	FY21	FY21-FY24	FY24	\$ 126,050	\$ -	\$ 168,305	\$ 70,385	\$ 4,927	\$ 981,144	\$ 364,741	\$ 3,274,755
32	01.29.32.01.10.15.06.02	Waste Unit - Waste Oil facility (WOF)	Rev. 1	FY21	FY22-FY24	FY26	\$ 132,924	\$ -	\$ -	\$ -	\$ 1,728	\$ 57,079	\$ 132,924	\$ 191,731
33	01.29.32.01.10.15.06.03	Waste Unit - Combined Spills Waste Unit	Rev. 1	FY21	FY21-FY24	FY24	\$ 132,924	\$ -	\$ -	\$ -	\$ 665	\$ 60,670	\$ 132,924	\$ 194,259
34	01.29.32.01.10.15.06.05	Waste Unit - D-Coal Storage Area	Rev. 1	FY21	FY21-FY24	FY24	\$ 46,290	\$ -	\$ -	\$ -	\$ 231	\$ 21,128	\$ 46,290	\$ 67,650
							\$ 6,246,832	\$ 5,876,786	\$ 7,217,205	\$ 4,929,268	\$ 230,874	\$ 12,246,612	\$ 24,674,179	\$ 49,375,613

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addressed as part of the DAGW OU as well. Therefore, remediation activities are not included as part of this proposed plan for accelerated closure of the DAOU.

It is expected that LUCs will be required for the DCSA as part of the final ROD for DAOU. Based on previous experience and labor analysis included in *Technical Memorandum Task Analyses for EC&ACP Engineering Documentation (U)* (SRNS 2018b), the costs for implementing LUCs and the documentation required for the final ROD have been included in this proposed plan for accelerated closure of the DAOU and are documented in *Cost Estimates for the Closure of the D-Area Operable Unit* (SRNS 2020j).

6.5 D&D Facilities Estimate

In 2003, SRS engineering developed rough order of magnitude (ROM) estimates for disposition of D-Area facilities, which included the field activities for the D&D of these facilities. However, the ROM estimates did not include the operations and field support, project management, or project planning functions. Task analyses were provided to Site estimating by project management based on prior D&D experience in execution and support functions that will be required.

As previously discussed, Class 3 cost estimates have been completed for all D&D units with the exception of the D-Area Substation (451-D), the Telecommunication Building (702-D), the D-Area Pumphouse (681-5G), and the D-Area Powerhouse (484-D) decommissioning. The ROM estimates were based on professional opinion and prior experience, as well as asbestos content and characteristics, system complexity, construction materials used, and radiological and non-radiological contamination.

The 484-D Powerhouse asbestos abatement portion of the deactivation scope was estimated on a Class 3 basis for this proposed plan for accelerated closure of the DAOU, however, the 484-D Powerhouse decommissioning required a separate approach due to the low maturity level of the project definition deliverables. The 484-D Powerhouse has components that warrant a long project duration and continuing manpower requirements.

The ROM estimate for field activities required for the D&D of the 484-D Powerhouse in 2003 dollars was \$5,700k. Assuming an escalation factor of 3.5%, this translates to \$10,300k in direct costs in 2020 dollars. Based on classifications generated by the AACEI, the ROM estimate would fall under Class 5 where the estimate is based on judgement and/or previous experience. The

expected accuracy of a Class 5 estimate in the low range is -20% to -50%, and in the high range is +30% to +100%. Therefore, the range for the ROM estimate falls between \$5,150k to \$20,600k (direct 2020 dollars) for field activities required for the D&D. Part of the execution strategy for the decommissioning of 484-D will include a more detailed estimate as the scope of the project matures.

The task analysis accounts for project support functions, such as operations support point of contact, Generator Certification Official (waste operations), work planning and control, Environmental Compliance Authority, Industrial Hygiene and Safety representatives for SRNS, and Site development and historical assets personnel. Project management personnel and engineering are also included in the task analysis costs to be accounted for in addition to the field D&D activities.

7.0 INTEGRATED SCHEDULE

7.1 Project Integrated Schedule

The proposed plan for accelerated closure of the DAOU schedule consists of two logic branches: the waste unit closures (Figure 11) and the D&D unit closures (Figure 12). The waste unit schedule is broken down by closure action for the entire group of waste units, as most of the actions will be similar in scope and worked in parallel timeframe. The D&D unit schedule is broken down into elements by building and building groups.

To develop the integrated schedules for the DAOU scope, Generic Area Completion Team Schedule was used in conjunction with facility knowledge and complexity expectations as a basis for determining durations for the various regulatory tasks (WSRC 2006). This generic schedule provides the most accelerated approach while still accounting for the customary regulatory (USEPA and SCDHEC) review periods for documentation as required. The key to the proposed overall acceleration on DAOU closure is regulatory acceptance of the SB/PP as the first regulatory document for the waste units. Document preparation that can be performed in parallel is arranged as such in the schedule. Opportunities for accelerating field work are discussed in the sections below.

7.2 DAOU Waste Units Schedule

Three of the four waste unit (DPSLs, DCSA, and the Combined Spills from 483-D and Associated Areas) can be completed prior to or in parallel with D&D activities. Based on the assumptions and history previously discussed for the DPSLs and the Combined Spills from 483-D and Associated

Buildings, no additional characterization is needed. Sampling for the DSCA will be conducted concurrently with post-removal action sampling anticipated in 3rd quarter FY2022.

The DWOFF will be addressed following the conclusion of D&D activities for the D-Area Oil Shed Building (484-10D), as these activities may have impacts on the characterization for the DWOFF. The D&D for Building 484-10D is proposed to be completed in 3rd quarter FY2022.

The scoping for the SB/PP for the four waste units is proposed for 2nd quarter FY2023, allowing for data evaluation from the DSCA and DWOFF sampling. The submittal of the Revision 0 ROD is tied to the D&D of the Powerhouse (484-D), proposed for completion in 3rd quarter FY2024. The Revision 0 ROD submittal allows time for DPFR submittals, followed by four months. The timeframe from the Revision 0 ROD to submittal of the Remedial Action Completion Report is about 30 months, since LUCs and manhole plugging should be completed quickly.

Figure 11 illustrates the intended integrated project schedule for remaining DAOU waste units.

7.3 DAOU D&D Facilities Schedule

The D&D facilities were organized on a funding by fiscal-year basis and grouped into buildings that are similar in complexity and geographical location. As the project progresses, the complexity of the targeted D&D facilities increases. The first few years of scheduled activities include miscellaneous ancillary buildings which supported the powerhouse operations, followed by the water treatment facilities, and culminating with the D&D of the 484-D Powerhouse. Each D&D project includes three distinct parts: 1) planning and engineering, 2) deactivation, and 3) decommissioning. The planning and engineering phase is a major portion of schedule duration for each project. This encompasses the FDE regulatory process, procurement documentation development, work package development, engineering surveys and end points documentation, and all other preparations for field work associated with the D&D process. The development, review, and approval cycle for these documents results in significant effort and time per building and are organized such that efforts may be focused on similar projects at any given time. The majority of the facilities are anticipated be decommissioned as a Simple Model per the Manual 1C procedure 501 process, with the exception of the 484-D Powerhouse, which has the likely potential to be classified as an Integrated Sample Model. Figure 12 illustrates the intended integrated project schedule for DAOU D&D buildings.

It is expected that subcontract forces will be utilized for this effort, as well as the SRS-CRO. SRS-CRO shall proceed with the proposed accelerated schedule for the buildings/ structures/equipment transferred for their beneficial reuse. The following facilities have been transferred to the SRS-CRO for decommissioning:

- Diesel Fuel Underground Storage Tank (454-D),
- D-Area Storage Building (484-7D),
- D-Area Storage Building (484-12D),
- D-Area Storage Building (484-13D),
- D-Area Storage Shed (484-15D), and
- Chlorine Unloading and Storage Facility (683-D).

The schedules in this proposed plan for accelerated closure of the DAOU do not include these facilities since their decommissioning schedule will be managed by the SRS-CRO, not EC&ACP.

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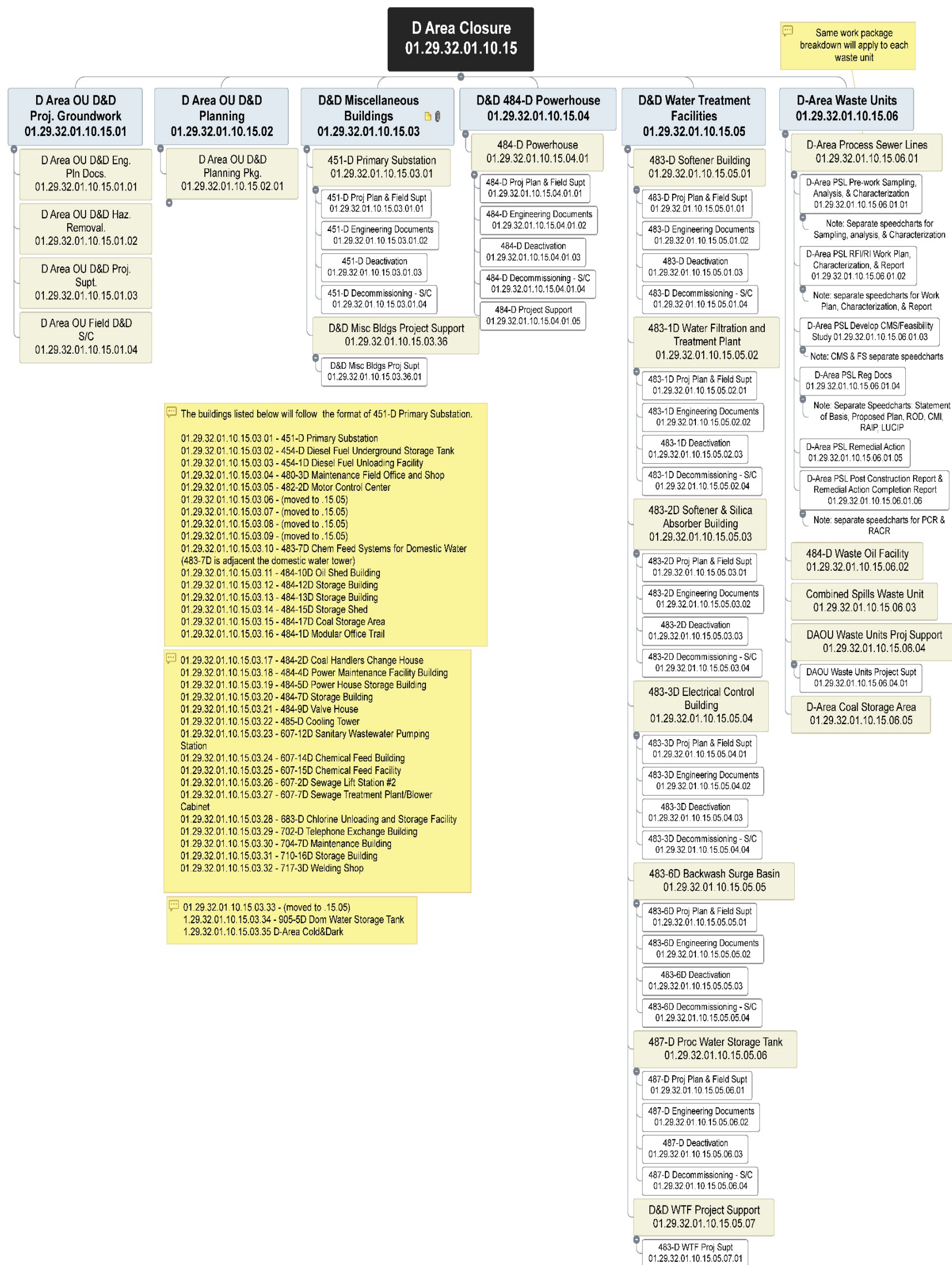
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9.0 ATTACHMENTS

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9.1 Work Breakdown Structure



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Appendix A

Summary Tables for DAOU Waste Units and D&D Buildings/Structures

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Table A-1. Diesel Fuel Underground Storage Tank (454-D) and Diesel Fuel Unloading Facility (454-1D)


Building Number:	454-D, 454-1D
Building Name:	Diesel Fuel Underground Storage Tank (454-D) and Diesel Fuel Unloading Facility (454-1D)
	
Year Built:	1990
Approx. ft²:	454-D - 15,000 gal. carbon steel tank located in ~ 886 ft ² concrete dyke. 454-1D - 63 ft x 13 ft concrete pad (~819 ft ²)
Construction Type:	454-D tank is mounted on concrete saddles inside a cast-in-place concrete dike under a steel supported roof structure for protection from the elements; 454-1D is a concrete pad bounded on each side by 6" high concrete curbs
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00041 (SRNS 2019a); approved by USEPA and SCDHEC
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).
Existing Characterization:	History shows that only virgin, uncontaminated fuel oil has been unloaded and/or stored at both facilities
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00021; however, it was stated that no evaluation of the wiring in the electrical panel boxes was performed and suspect materials (if any) discovered must be considered presumed asbestos containing materials (PACM) until sampled by a licensed asbestos inspector.
D&D Cost Estimate:	\$381,000 (454-D); \$96,000 (454-1D)

Table A-2. Power Maintenance Facility Building (484-4D)

Building Number:	484-4D
Building Name:	Power Maintenance Facility Building (484-4D)
	
Year Built:	1981
Approx. ft²:	11,694
Construction Type:	Metal frame construction with a metal roof, constructed on a concrete slab.
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00037 (SRNS 2019b); approved by USEPA and SCDHEC
Process History:	Used for maintenance and personnel purposes. There is no history of processing of materials in the maintenance facility.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Contains approximately 500 ft ² of asbestos floor tile, 1,200 ft ² of asbestos mastic, 2 ft ² of gray asbestos sealant, 100 ft ² of white asbestos sealant
D&D Cost Estimate:	\$602,000

Table A-3. D-Area Storage Building (484-7D)


Building Number:	484-7D
Building Name:	D-Area Storage Building (484-7D)
	
Year Built:	1996
Approx. ft²:	840
Construction Type:	Metal-frame structure with corrugated aluminum skin attached to a concrete slab.
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00039 (SRNS 2019c); approved by USEPA and SCDHEC
Process History:	This facility was used for storage purposes only. No history of chemical processes being performed within this structure.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00004.
D&D Cost Estimate:	\$325,000

Table A-4. D-Area Storage Building (484-12D)


Building Number:	484-12D
Building Name:	D-Area Storage Building
	
Year Built:	1987
Approx. ft²:	1,280
Construction Type:	Metal-frame structure with metal skin and roof attached to a concrete slab.
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00038 (SRNS 2019d); approved by USEPA and SCDHEC
Process History:	This facility was used for storage of equipment and fabrication of insulation materials for the 484-D Powerhouse. No history of chemical or radioactive processes being performed within this structure.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00014.
D&D Cost Estimate:	\$335,000

Table A-5. D-Area Storage Building (484-13D)


Building Number:	484-13D
Building Name:	D-Area Storage Building (484-13D)
	
Year Built:	1987
Approx. ft²:	4,032
Construction Type:	Metal-frame structure with corrugated aluminum skin attached to a concrete slab.
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00042 (SRNS 2019e); approved USEPA and SCDHEC
Process History:	This facility was used for storage purposes only. No history of chemical or radioactive processes being performed within this structure.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00013.
D&D Cost Estimate:	\$372,000

Table A-6. D-Area Storage Building (484-15D)


Building Number:	484-15D
Building Name:	D-Area Storage Building (484-15D)
	
Year Built:	1987
Approx. ft²:	2,000
Construction Type:	Metal-frame structure with metal roof and skin attached to a concrete slab.
Decommissioning Model:	Simple Model
FDE Status:	G-FDE-D-00043 (SRNS 2019f); approved by USEPA and SCDHEC
Process History:	This facility was used for storage purposes only. No history of chemical or radioactive processes being performed within this structure.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00011.
D&D Cost Estimate:	\$357,000

Table A-7. Maintenance Field Office and Shop (480-3D)


Building Number:	480-3D
Building Name:	Maintenance Field Office and Shop
	
Year Built:	Early 1950's
Approx. ft ² :	Approximately 576
Construction Type:	Steel frame construction placed on a concrete slab with corrugated asbestos siding and roofing. Building has two hollow steel doors and a double, side-swinging bay door.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00044 (SRNS 2020a); submitted to USEPA and SCDHEC May 2020
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).
Existing Characterization:	Chemical activities in this facility have only ever involved low-hazard quantities of liquid chlorine in up to 3 cylinders and metered/injected as a water treatment algaecide/biocide into a process water line running to the cooling tower. The building never contained or processed radioactive materials.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Approximately 2,560 ft ² of asbestos containing material (ACM) and ~31 ft ² of PACM. All removal to be per proper permitting and waste disposal procedures.
D&D Cost Estimate:	\$423,000

Table A-8. Electrical Control Building (483-3D)


Building Number:	483-3D
Building Name:	Electrical Control Building (483-3D)
	
Year Built:	1951
Approx. ft ² :	2,031
Construction Type:	Steel frame on a concrete slab with corrugated asbestos siding and roof.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00049 (SRNS 2020b); submitted to USEPA and SCDHEC May 2020
Process History:	Only function was as an electrical switchgear building, which has no chemical or radioactive process history.
Existing Characterization:	No spills reported. No hazardous waste identified remains.
Historical Review:	Requires evaluation and South Carolina SHPO notification.
Asbestos Content:	Approximately 4,800 ft ² of corrugated cementitious panels on all sides and roof; additional un-measured PACM sealant, backer rod, electrical jacketing rigid insulation and mastic
D&D Cost Estimate:	\$465,000

Table A-9. D-Area Powerhouse Storage Building (484-5D)


Building Number:	484-5D
Building Name:	D-Area Powerhouse Storage Building (484-5D)
	
Year Built:	1980
Approx. ft ² :	360
Construction Type:	Aluminum tube-frame structure with corrugated aluminum skin attached to a concrete slab.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00047 (SRNS 2020c); submitted to USEPA and SCDHEC May 2020
Process History:	This facility was used for storage purposes only. No history of chemical processes being performed within the structure.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Building contains approximately 75 linear ft of gray asbestos sealant and 28 linear ft of gray asbestos caulk
D&D Cost Estimate:	\$236,000

Table A-10. D-Area Valve House (484-9D)


Building Number:	484-9D
Building Name:	D-Area Valve House (484-9D)
	
Year Built:	Circa 1988
Approx. ft ² :	Approximately 392
Construction Type:	Masonry block building sitting on a concrete slab with a poured concrete roof.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00055 (SRNS 2020d); submitted to USEPA and SCDHEC May 2020
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).
Existing Characterization:	Building was constructed as a fire water valve house and has always been used for that. No chemical or radiological processes or storage has ever been associated with this facility.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No ACM identified in the building per Asbestos Survey Q-APG-D-00027; however piping gaskets inaccessible for bulk sampling are considered PACM and must be removed per proper permitting waste disposal guidelines.
D&D Cost Estimate:	\$336,000

Table A-11. D-Area Cooling Tower (485-D)


Building Number:	485-D
Building Name:	D-Area Cooling Tower (485-D)
	
Year Built:	1952
Approx. ft²:	Approximately 3,087
Construction Type:	Standard updraft industrial cooling tower constructed of galvanized steel, wood and concrete. Tower basin is reinforced concrete approximately 63 ft x49 ft x 7 ft deep at the shallowest section. There is a stairway on the east side that allows access to the top and a walkway across top for access to the fans and motors.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00050 (SRNS 2020e); submitted to USEPA and SCDHEC May 2020
Process History:	Cooling Tower contained water treatment chemicals (lime and chlorine, later abandoned in favor of sodium hypochlorite) which functioned as a water softener and algaecide/biocide, respectively.
Existing Characterization:	Review of SRS databases reveals no documented evidence of spills at or around the area of the 485-D Cooling Tower.
Historical Review:	The 485-D is listed as having historical significance (USDOE 2005). Prior to any actions that will alter the physical appearance of the building mitigating actions listed in that reference will have to be completed.
Asbestos Content:	Based on Q-APG-D-00026, asbestos containing material (ACM) and presumed asbestos containing material (PACM) were discovered in several areas. All ACM/PACM removal will be performed by asbestos trained personnel with proper permitting and waste disposal procedures
D&D Cost Estimate:	\$765,000

Table A-12. Cooling Tower Switchgear Building (482-2D)


Building Number:	482-2D
Building Name:	Cooling Tower Switchgear Building (482-2D)
	
Year Built:	1952
Approx. ft ² :	Approximately 576
Construction Type:	The building has a steel frame structure on a concrete slab. The siding and roof of the building are corrugated asbestos. The building has an 8 ft by 10 ft roll-up door in the west wall and a standard metal personnel door in the east wall.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00050 (SRNS 2020e); submitted to USEPA and SCDHEC (May 2020)
Process History:	Building 482-2D has no process history as it has only been used as an electrical switchgear building.
Existing Characterization:	Review of the FFA, ORPS/SIRIM database and SRS spill files reveal no documented evidence of spills in or around the area of the 482-2D Switchgear Building.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Based on Q-APG-D-00006, several areas tested positive for PACM. All ACM/PACM removal will be performed by asbestos trained personnel with proper permitting and waste disposal procedures.
D&D Cost Estimate:	\$428,000

Table A-13. Chlorine Unloading and Storage Facility (683-D)


Building Number:	683-D
Building Name:	Chlorine Unloading and Storage Facility (683-D)
	
Year Built:	1986 (Original building comprised the gaseous chlorination room in the southeast corner of the current structure and was built in 1952).
Approx. ft²:	4,400
Construction Type:	Steel and masonry constructed building on a concrete slab foundation. The sides of the building are primarily expanded metal mesh to allow for appropriate ventilation of the structure, along with sheet metal and concrete block and mortar.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00040 (SRNS 2020f); submitted to USEPA and SCDHEC May 2020
Process History:	Activities in this facility have only ever involved gaseous chlorine and sodium hypochlorite (bleach). Sodium hypochlorite was substituted for gaseous chlorine because it is a low-hazard, inexpensive and effective biocide in water treatment.
Existing Characterization:	No spills reported. No identified hazardous waste remains.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No areas tested positive for asbestos in asbestos survey Q-APG-D-00011.
D&D Cost Estimate:	\$417,000

Table A-14. D-Area Maintenance Building (704-7D)


Building Number:	704-7D
Description:	D-Area Maintenance Building (technically single-story office building)
	
Year Built:	1991
Approx. ft²:	Approximately 3,735
Construction Type:	Originally started as a prefabricated 35 ft x60 ft wood and steel, light frame structure with vinyl siding and asphalt shingle roof. The addition is the same type construction and its dimensions are approximately 25 ft x65 ft.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00040 (SRNS 2020f); submitted to EPA and SCDHEC May 2020
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).
Existing Characterization:	While it is called a maintenance building it has been an office structure for powerhouse and maintenance operations since 1991. No chemical or radiological processes or storage has ever been associated with this facility.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	A small amount of ACM, approximately 50 ft ² of black roofing sealant, was identified in Q-APG-D-00016. No samples of the wiring in the electrical panel were taken and suspect materials discovered (if any) must be considered PACM until sampled by a licensed asbestos inspector.
D&D Cost Estimate:	\$366,000

Table A-15. D-Area Storage Building (710-16D)


Building Number:	710-16D
Building Name:	D-Area Storage Building (710-16D)
	
Year Built:	Early 1993
Approx. ft²:	Approximately 1,560
Construction Type:	Wood frame construction on a concrete foundation. The foundation is not a slab; however, it does consist of some interior concrete floor as it extends inward beyond the walls in many locations. The remaining floor is natural dirt.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00046 (SRNS 2020h); submitted to USEPA and SCDHEC May 2020
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).
Existing Characterization:	No chemical or radioactive processes were associated with this storage building.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No ACM identified in the building per Asbestos Survey Q-APG-D-00019.
D&D Cost Estimate:	\$283,000

Table A-16. D-Area Welding Shop (717-3D)


Building Number:	717-3D
Building Name:	D-Area Welding Shop (717-3D)
	
Year Built:	1991
Approx. ft²:	Approximately 1,900
Construction Type:	Light steel frame construction on a concrete foundation/slab with insulated walls and ceiling. Vinyl siding, asphalt shingles wood and composite materials are also included in the construction.
Decommissioning Model:	Simple Model (proposed)
FDE Status:	G-FDE-D-00056 (SRNS 2020i); submitted to USEPA and SCDHEC May 2020
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this building (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product). The building was originally used as a welding shop, but was later converted to storage.
Existing Characterization:	No hazardous chemicals or radioactive materials were either used or stored in this building.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No ACM identified in the building per Asbestos Survey Q-APG-D-00008.
D&D Cost Estimate:	\$302,000

Table A-17. D-Area Water Treatment Facility (483-D, 483-1D, 483-2D, and 487-D)

Building Number:	483-D, 483-1D, 483-2D, 487-D
Description:	<i>D-Area Water Treatment Facilities: (Softener Building [483-D], Water Filtration and Treatment Plan [483-1D]; Softener and Silica Absorber Building [483-2D], Process Water Storage Tank [487-D])</i>
Year Built:	Construction started in 1951; operational in 1952,
Approx. ft²:	Approximately 2.75 acres
Construction Type:	Building 483-D is a two-story concrete, steel and corrugated asbestos structure; 483-1D is an irregularly shaped facility constructed mainly of reinforced concrete with corrugated asbestos siding/roofs; 483-2D is constructed of steel channel on a concrete pad with corrugated asbestos siding/roof.
Decommissioning Model:	Simple Model (anticipated)
FDE Status:	G-FDE-D-00048; future submittal to USEPA and SCDHEC
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in these facilities.
Existing Characterization:	Under review
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Asbestos surveys indicated ACM and PACM were present at Buildings 483-D (Q-APG-D-00030), 483-1D (Q-APG-D-00029), 487-D (Q-APG-D-00031) and 483-2D (Q-APG-D-00023). All ACM/PACM removal will be performed by asbestos trained personnel with proper permitting and waste disposal procedures
D&D Cost Estimate:	\$13,693,000

Table A-18. D-Area Domestic Water Production Facilities (483-7D, 905-3D, 905-5D, 905-136D)






Building Number:	483-7D, 905-3D, 905-5D, 905-136D
Building Name:	D-Area Domestic Water Production Facilities (Chemical Feed Systems for Domestic Water [483-7D], Primary Domestic Water Well [905-3D], Elevated Domestic Water Storage Tank [905-5D], Back-up Domestic Water Well [905-136D], and other Ancillary Structures
    	
Year Built:	Circa 1996
Approx. ft²:	Domestic Water Production Facility is comprised of approximately 3.8 acres. Building 483-7D is approximately 3,200 ft ² .
Construction Type:	Building 483-7D is a steel and masonry construction with steel sheeting for the exterior and roof. 905-3D and 905-136D are standard deep-bore wells. Building 905-5D is a 125,000 gal epoxy-coated (interior) and painted (exterior) carbon steel storage tank on risers. The top of the tank is approximately 165 ft above grade. Various other ancillary structures are also associated with these facilities.
Decommissioning Model:	Simple Model (anticipated)
FDE Status:	G-FDE-D-00052; future submittal to USEPA and SCDHEC
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in Building 483-7D.
Existing Characterization:	There is no documented evidence of spills in Building 483-7D.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No ACM identified in the building per Asbestos Survey Q-APG-D-00022. No evaluation of the wiring in the electrical panel was performed and should be considered PACM until sampled by a licensed inspector.
D&D Cost Estimate:	\$1,000,000 (483-7D); \$614,000 (905-5D)

Table A-19. D-Area Oil Shed Building (484-10D)


Building Number:	484-10D
Building Name:	D-Area Oil Shed Building (also know as D-Area Waste Oil Facility) (484-10D)
	
Year Built:	1973; Shed cover erected in the late 1980's
Approx. ft²:	Approximately 2,200
Construction Type:	The shed is a clear-span steel structure finished with corrugated metal panels on the roof and partially down the sides extending from the roof.
Decommissioning Model:	Simple Model (anticipated)
FDE Status:	G-FDE-D-00051; FDE is still in preparation and Decommissioning Model has not been fully determined
Process History:	Still being reviewed
Existing Characterization:	Characterization is being accomplished using a combination of process knowledge/historical release information, verification walk downs and sampling as appropriate.
Historical Review:	This facility has no historical significance.
Asbestos Content:	No ACM identified in the building per Asbestos Survey Q-APG-D-00017. No evaluation of the wiring in the electrical panel was performed and should be considered PACM until sampled by a licensed inspector.
D&D Cost Estimate:	\$453,000

Table A-20. D-Area Sanitary Treatment Facilities (607-14D, 607-15D, 607-12D, 607-2D, 607-7D)

Building Number:	607-14D, 607-15D, 607-12D, 607-2D, 607-7D
Description:	D-Area Sewer Water Treatment Plan (Chemical Feed Building [607-14D], Chemical Feed Facility [607-15D], Sanitary Wastewater Pumping Station [607-12D], Sewage Lift Station #2 [607-2D], Sewage Treatment Plant/Blower Cabinet [607-7D])
Year Built:	1993
Approx. ft²:	Sewage Water Treatment Plant is comprised of 14,400 ft ² (1/3 acre). Chemical Feed Building (607-14D) is 320 ft ² ; Disinfection Pit (607-15D) is 228 ft ² ; Sanitary Waste Treatment Plant (607-15D) is 800 ft ² .
Construction Type:	Building 607-14D is built on a concrete slab and consists of 18-in masonry block walls with metal and composite materials for the sides and roof. Building 607-15D consists of disinfection pit (open concrete pit) and sanitary waste treatment plant (an underground epoxy-epoxy coated carbon steel structure).
Decommissioning Model:	Simple Model (anticipated)
FDE Status:	G-FDE-D-00053; FDE is still in preparation
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this facility
Existing Characterization:	Decommissioning of the facilities will be in conjunction with close-out of the facility per South Carolina (SC) Code of Regulations R 61-82.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	No ACM identified in Buildings 607-14D and 607-15D per Asbestos surveys Q-APG-D-00024 and Q-APG-D-00028, respectively. No evaluation of the wiring in the electrical panel (607-14D) or gaskets (607-15D) was performed and should be considered PACM until sampled.
D&D Cost Estimate:	\$186,000 (607-14D); \$165,000 (607-15D); \$64,000 (607-12D); \$62,000 (607-2D); \$52,000 (607-7D)

Table A-21. Coal Handling Facilities (Shaker House, Crusher House, Transfer House, Coal Handler’s Shack, and Coal Conveyor System)

Building Number:	No Building Number
Building Name:	Shaker House, Crusher House, Transfer House, Coal Handler’s Shack and Coal Conveyor System

An aerial photograph showing a complex of industrial buildings and conveyor systems. Five yellow callout boxes with black text and arrows point to specific structures: 'Shaker House' (top left), 'Coal Handler's Shack' (top center), 'Crusher House' (middle left), 'Coal Conveyors' (middle right), and 'Transfer House' (bottom right). The facility is situated in a dry, open area with reddish-brown soil. A road and some utility lines are visible in the background.

Year Built:	1953
Approx. ft²:	Coal Handling Facilities comprise 78,000 ft ² (1.8 acres). Coal Conveyor System is 530 linear ft; Transfer House is 840 ft ² ; Crusher House is 1,410 ft ² ; Shaker House is 640 ft ² ; and Coal Handler’s Shack is 100 ft ² .
Construction Type	Multi-level structures with steel I-beam framework on concrete slabs. The exteriors are covered with raised seam metal siding and roofing panels. Coal Handlers shack appears to be a Morgan Type building.
Decommissioning Model:	Simple Model (anticipated)
FDE Status:	Preparation is in very early stages
Process History:	Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in this facility
Existing Characterization:	Incomplete
Historical Review:	These facilities have no historical significance (USDOE 2005).
Asbestos Content:	No ACM found per Asbestos surveys Q-APG-D-00001 (Transfer House); Q-APG-D-00002 (Shaker House);Q-APG-D-00003 (Crusher House)
D&D Cost Estimate:	\$1,552,000

Table A-22. Modular Office Trailer (484-1D)


Building Number:	484-1D
Building Name:	Modular Office Trailer
	
Year Built:	1991
Approx. ft²:	Approximately 1,504
Construction Type:	Modular office structure with an awning (metal canopy) and two stair structures
Decommissioning Model:	N/A
FDE Status:	This unit is on Appendix K.1. However, D&D generally is not done on trailers. Approval from regulators needed to remove from Appendix K or add to Appendix K.2.
Process History:	Structure was primarily used for offices and storage of archived Powerhouse and support facility records. One room was used for storage of welding rods that were removed during deactivation in 2013.
Existing Characterization:	All office furniture and any other equipment stored in the building was removed in 2013 during deactivation. There was no water or sewer connected to the building and all exterior electrical components were removed during deactivation in 2013.
Historical Review:	This facility has no historical significance (USDOE 2005).
Asbestos Content:	Per Q-APG-D-00012 approximately 50 ft ² of gray caulk and 20 ft ² of duct mastic tested positive for ACM. The duct mastic will be removed after decommissioning of the structure due to the hazardous nature of removing the material under the building prior to decommissioning.
D&D Cost Estimate:	\$346,000

Table A-23. Coal Handlers Change House (484-2D)


Building Number:	484-2D
Building Name:	Coal Handlers Change House (484-2D)
	
Year Built:	1991
Approx. ft²:	Approximately 965
Construction Type:	Modular office, with a kitchenette, change rooms, showers and toilets, along with four exterior step structures.
Decommissioning Model:	N/A
FDE Status:	This unit is on Appendix K.1. However, D&D generally is not done on trailers. Approval from regulators needed to remove from Appendix K or add to Appendix K.2.
Process History:	Structure was primarily used as a change house for coal handlers. No chemical or radiological processes ever took place in this building.
Existing Characterization:	All office furniture and any other equipment stored in the building was removed in 2013 during deactivation. Water, sewer and electrical connections were air gapped during deactivation in 2013.
Historical Review:	Based on SRS's Cold War Built Environment Cultural Resources Management Plan this facility has no historical significance.
Asbestos Content:	No ACM were identified in Q-APG-D-00009. No samples of the wiring in the electrical panel were taken during the inspection, and it is recommended that any suspect materials discovered (if any) during decommissioning must be considered PACM until sampled by a licensed asbestos inspector.
D&D Cost Estimate:	\$276,000

Table A-24. D-Area Powerhouse (484-D)


Building Number:	484-D
Building Name:	D-Area Powerhouse (484-D)
	
Year Built:	1951/1952
Approx. ft²:	Approximately 62,245
Construction Type:	Building 484-D is an irregular shaped structural steel frame with multiple levels approximately 105 ft tall built on reinforced concrete with a spread footing foundation. The roof is a standard girder-beam construction; however, a truss roof was installed over the turbine section. The roofs and exterior walls are covered with corrugated asbestos sheathing.
Decommissioning Model:	Integrated Sampling Model (tentatively)
FDE Status:	No FDE number assigned yet; planning still in progress
Process History:	Still being reviewed
Existing Characterization:	Characterization will be accomplished using a combination of process knowledge/historical release information, verification walk downs and sampling, as needed.
Historical Review:	The Cold War Historic Preservation Program has completed necessary action to document 484-D history to comply with NHPA. Decommissioning can proceed.
Asbestos Content:	Q-APG-D-00025 dated February 20, 2020. Building contains approximately 95,200 ft ² of non-friable, approximately 1,440 ft ³ of friable, 16,200 linear ft of friable and 4,150 ft ² of friable asbestos.
D&D Cost Estimate:	\$21,160,000

Table A-25. D-Area Waste Oil Facility (484-10D)

SRS Index No:	70	FFA Appendix:	C.1, C.5, H.2
Unit Name:	D-Area Waste Oil Facility (484-10D) (DWOF)		
<p>The map shows the Waste Oil Facility (484-10D) in pink, adjacent to the Powerhouse (484-D) in yellow. It details various infrastructure like ditches, sewers, and fences, along with soil sampling points and arsenic contamination levels. A legend on the right explains the symbols used for soil samples, manholes, arsenic data ranges (from <MDL - 2,999 to 22,800 - 111,000 ug/kg), ditches, sewers, fences, and buildings. Scale bars in feet and meters are also provided.</p>			
Year Built:	1953		
Approx. m²:	200 (0.05 acre)		
Facility Details:	A temporary storage area for used oil before it was burned in the D-Area boilers. Used oil (92,000 gal/yr) consisting of engine lubricant, pump oil, kerosene, fuel oil, diesel oil, transformer oil, and gearbox oil was brought to the facility in tank trucks or drums and transferred to storage tanks. It operated from 1953 until 2007.		
Process History:	Waste oil was stored in a 7,571 L (2,000-gal) steel storage tank, 1,893 L (500-gal) steel skid tanks, and 208 L (55-gal) metal drums located in a concrete diked area at the DWOF. A sump collected spills to the waste oil tanks. Waste oil was delivered to the Powerhouse via pipelines.		
Contamination History:	Due to proximity of the DWOF to the Powerhouse (484-D), arsenic contamination in soil is from coal transfer operations rather than from the DWOF.		
Existing Characterization:	1992 soil gas survey and a 1993 radiological survey. 6 soil borings were collected for full TAL/TCL analyses and radionuclides (DEXOU). 6 soil borings at 3 depth intervals for full TAL/TCL suite, gross alpha, nonvolatile beta, and tritium (DAOU). Arsenic is a human health RCOC for surface soil. No ecological, PTSM, or CMCOCs.		
Removal Actions:	Excavation of 1 ft of soil and replacement with clean backfill (10-in) and gravel (2-in) was sufficient to remove the risk to the industrial worker. The areas around support piers were not excavated.		
New Characterization:	A pre-characterization SAP (six locations with targeted analyses) will be prepared to determine the nature and extent of arsenic contamination.		
Regulatory Status:	The DWOF will be closed as part of the final DAOU ROD.		
CERCLA Closure Cost Estimate:	\$192,000		

Table A-26. D-Area Process Sewer Lines (NBN)

SRS Index No:	558	FFA Appendix:	C.1, C.5, H.2
Unit Name:	D-Area Process Sewer Lines (NBN) (DPSLs)		
Year Built:	1952		
Approx. linear ft:	26,000 total		
Waste Unit Details:	The DPSLs are 26,000 linear ft of pipe (15.2 – 61 cm diameter) comprised of vitrified clay pipe and reinforced concrete pipe. The portion of the DPSLs closed under the 1 st EAROD comprised 16,600 linear ft. The portion of the DPSLs to be closed as part of the final ROD is 7,800 linear ft.		
Process History:	The DPSLs carried wastewater (dilute sulfuric acid, caustic solutions, and ash sludge) from the D-Area Powerhouse (484-D) and associated facilities.		
Contamination History:	Coal ash sludge is the primary contaminant in the DPSLs still in use.		
Existing Characterization:	DAOU characterization included visual inspection of manholes for sediment. Sediment samples from 28 manholes were analyzed for TAL/TCL, gross alpha, nonvolatile beta and tritium. 8 soil samples associated with outfall discharges were also sampled. The RFI/RI/BRA and DAOU 1 st EAROD determined there are no HH RCOCs, ecological RCOCs, no PTSM, and no CMCOCs.		
Removal Actions:	DAOU 1 st EAROD closed 40 manholes associated with the DPSLs by plugging the pipes and grouting the manholes to restrict access for general safety.		
New Characterization:	No additional characterization is recommended for the DPSLs. Plugging the pipes and grouting manholes/access points is recommended for the DPSLs		
Regulatory Status:	The DPSLs will be closed as part of the final DAOU ROD.		
CERCLA Closure Cost Estimate:	\$3,275,000		

Table A-27. Combined Spills from 483-D and Associated Areas (NBN)

SRS Index No:	265	FFA Appendix:	C.1, C.5,
Unit Name:	Combined Spills from 483-D and Associated Areas (NBN)		
Year Built:	1952		
Approx. m²:	9,688 (2.4 acres)		
Waste Unit Details:	The largest treatment plant at SRS to treat Savannah River water in Building 483-D and associated buildings. It operated from 1952 until 2012		
Process History:	Water Treatment Facilities treated raw water to produce a variety of water products: domestic water; clarified water for the former Heavy Water plant; boiler feed water for the large 484-D Powerhouse; and other process/service water (e.g. fire protection).		
Contamination History:	Several spills occurred in 483-D and associated facilities between 1985 and 1989. According to the spill reports, all spills noted were neutralized at the time of occurrence and had minimal impact on the environment.		
Existing Characterization:	Samples associated with the Combined Spills from 483-D and Associated Area were collected from twelve locations for full TAL/TCL suite, gross alpha, nonvolatile beta, and tritium. No contaminant migration, or PTSM, or human health RCOCs were identified for the surface soil.		
Removal Actions:	No remediation or removal actions have been conducted at the Combined Spills from 483-D and Associated Areas.		
New Characterization:	No additional characterization is recommended.		
Regulatory Status:	D&D FDE in process for above ground structures. After D&D is complete, the Combined Spills 483-D and Associated Areas will be closed as part of the final DAOU ROD.		
CERCLA Closure Cost Estimate:	\$194,000		

Table A-28. D-Area Coal Storage Area (484-17D)

SRS Index No:	1235	FFA Appendix:	K.1
Unit Name:	D-Area Coal Storage Area (484-17D) (DCSA)		
Year Built:	1953		
Approx. m ² :	60,000 (15 acres)		
Waste Unit Details:	The Powerhouse (484-D) burned approximately 160,000 tons of coal per year from 1953 until 2012. The DCSA stored coal prior to use in the D-Area Powerhouse (484-D). It operated from 1952 until 2013.		
Process History:	Coal arrived by rail car via two track hoppers to the Shaker House. The car shaker would unload coal; feeders conveyed coal from underneath the track hoppers onto a conveyor belt. Coal would travel to the Crusher House to be pulverized, and a conveyor belt would transport coal from the Crusher House to the Transfer House. Then coal was delivered to the coal bunkers in the Powerhouse (484-D) for use.		
Contamination History:	During and after the (DCSA) operational period, rainwater leached through the stored coal, resulting in a degradation of the iron sulfide (pyrite) commonly found in coal to sulfuric acid when mixed with rainwater.		
Existing Characterization:	2018 DCSA sampling were collected (8 locations; 6 depths) for aluminum, beryllium, cadmium, chromium, cobalt, iron, manganese, lead, nickel, sulfate, and uranium.		
Removal Actions:	All the coal was removed in 2013 as part of a maintenance action. Non-Time Critical Removal Action (buffering amendment addition) is being added to the soil.		
New Characterization:	20 sample locations at 3 depth intervals are proposed for TCL/TAL analyses, gross alpha, nonvolatile beta with contingent radionuclide analyses if trigger limits are exceeded.		
Regulatory Status:	Appendix K.1. No buildings/structures are associated with it. Proposing to add the Shaker House, Crusher House, Transfer House to DCSA scope.		
CERCLA Closure Cost Estimate:	\$68,000		

Appendix B

**Administrative Paths for D-Area Operable Unit Waste Units and D&D
Buildings/Structures**

Appendix B Tables

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D
Buildings/Structures 3

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D Buildings/Structures

<i>DAOU Waste Unit or D&D Structure</i>	<i>FFA Appendix</i>	<i>Comments</i>	<i>Removal Action</i>	<i>1st EAROD (Approved) (2011)</i>	<i>2nd EAROD (Pending) (2020)</i>	<i>DAOU Final ROD</i>	<i>Final Response Action</i>
<i>Moderator Processing Subunit</i>							
420-D Concentrator Building	C.4, C.5	Operated thermal detritiation units to treat tritium-contaminated soils and concrete to below contaminant migration thresholds.	C	C			LUCs
420-2D Rework Handling Facility	C.4, C.5		C	C			LUCs
421-2D Moderating Handling and Storage Building	C.4, C.5		C	C			LUCs
421-D Finishing Building	C.4, C.5			C			LUCs
421-4D Drum Storage Building	K.2				C		LUCs
772-D Control Laboratory/Supervisor's Office)	C.4, C.5			C			LUCs
<i>Bubble Tower Subunit</i>							
717-D Maintenance Facility	K.2	Construction / installation of a low-permeability flexible membrane liner over the soil contamination area to act as a barrier to prevent soil vapor from short-circuiting the shallow SVE well system.		C			LUCs
D-Area Heavy Water Facility	G.2			C			LUCs
Fire Fighting Training Facility	K.2			C			LUCs
D-Area Process Sewer Lines (NBN)	C.1, C.5	Manholes grouted		C			LUCs
<i>Powerhouse Subunit</i>							
489-D Coal Pile Runoff Basin (Northern 25%)	C.1, C.5	Consolidation of contaminated soils from the 484-10D WOF in the Northern 25% of the 489-D Coal Pile Runoff Basin and cap with soil cover	C	C			LUCs
489-D Coal Pile Runoff Basin (Southern 75%)	C.1, C.5	Excavation and disposal of coal residue and contaminated soil	C		X		LUCs
484-10D Waste Oil Facility (soil media)	C.1, C.5		C			F	LUCs

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D Buildings/Structures (continued)

<i>DAOU Waste Unit or D&D Structure</i>	<i>FFA Appendix</i>	<i>Comments</i>	<i>Removal Action</i>	<i>1st EAROD (Approved) (2011)</i>	<i>2nd EAROD (Pending) (2020)</i>	<i>DAOU Final ROD</i>	<i>Final Response Action</i>
D-Area Process Sewer Lines (NBN)	C.1, C.5	Manholes will be grouted				F	LUCs
Combined Spills from 483-D and Associated Areas (NBN)	C.1, C.5					F	LUCs
451-D Primary Substation (High Volt 115/13.8)	K.1	Operating / Not excess				F	LUCs
454-1D Diesel Fuel Unloading Facility	K.1	Simple Model (approved)				F	LUCs
454-D Diesel Fuel Underground Storage Tank	K.1	Simple Model (approved)				F	LUCs
480-3D Maintenance Field Office and Shop	K.1	Simple Model (proposed)				F	LUCs
482-2D Motor Control Center	K.1					F	LUCs
483-1D Water Filtration and Treatment Plant	K.1	Simple Model (anticipated)				F	LUCs
483-2D Softener and Silica Absorber Building	K.1	Simple Model (anticipated)				F	LUCs
483-3D Electrical Control Building	K.1	Simple Model (proposed)				F	LUCs
483-6D Backwash Surge Basin	K.1	No Buildings associated with it.				F	LUCs
483-7D Chemical Feed Systems for Domestic Water	K.1	Simple Model (anticipated)				F	LUCs
483-D Softener Building	K.1	Simple Model (anticipated)				F	LUCs
484-10D Oil Shed Building	K.1	Simple Model (anticipated)				F	LUCs
484-12D Storage Building	K.1	Simple Model (approved)				F	LUCs
484-13D Storage Building	K.1	Simple Model (approved)				F	LUCs
484-15D Storage Shed	K.1	Simple Model (approved)				F	LUCs
484-17D Coal Storage Area	K.1	No Buildings currently associated with it. Proposing to combine with Shaker House, Crusher House, Transfer House				F	LUCs

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D Buildings/Structures (continued)

<i>DAOU Waste Unit or D&D Structure</i>	<i>FFA Appendix</i>	<i>Comments</i>	<i>Removal Action</i>	<i>1st EAROD (Approved) (2011)</i>	<i>2nd EAROD (Pending) (2020)</i>	<i>DAOU Final ROD</i>	<i>Final Response Action</i>
484-1D Modular Office Trailer	K.1	Building is on K.1. Anticipated to be moved to K.2 with regulatory approval.				F	LUCs
484-2D Coal Handlers Change House	K.1	Building is on K.1. Anticipated to be moved to K.2 with regulatory approval.				F	LUCs
484-4D Power Maintenance Facility Building	K.1	Simple Model (approved)				F	LUCs
484-5D Powerhouse Storage Building	K.1	Simple Model (proposed)				F	LUCs
484-7D Storage Building	K.1	Simple Model (approved)				F	LUCs
484-9D Valve House	K.1	Simple Model (proposed)				F	LUCs
484-D Powerhouse	K.1	Integrated Sample Model (anticipated)				F	LUCs
485-D Cooling Tower	K.1	Simple Model (proposed)				F	LUCs
607-12D Sanitary Wastewater Pumping Station	K.1	Simple Model (anticipated)				F	LUCs
607-14D Chemical Feed Building	K.1	Simple Model (anticipated)				F	LUCs
607-15D Chemical Feed Facility	K.1	Simple Model (anticipated)				F	LUCs
607-2D Sewage Lift Station #2	K.1	Simple Model (anticipated)				F	LUCs
607-7D Sewage Treatment Plant/Blower Cabinet	K.1	Simple Model (anticipated)				F	LUCs
683-D Chlorine Unloading and Storage Facility	K.1	Simple Model (proposed)				F	LUCs
702-D Telephone Exchange Building	K.1	Operating / Not Excess				F	LUCs
704-7D Maintenance Building	K.1	Simple Model (proposed)				F	LUCs
710-16D Storage Building	K.1	Simple Model (proposed)				F	LUCs
717-3D Welding Shop	K.1	Simple Model (proposed)				F	LUCs
905-3D Primary Domestic Water Well	K.1	Simple Model (anticipated)				F	LUCs

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D Buildings/Structures (continued)

<i>DAOU Waste Unit or D&D Structure</i>	<i>FFA Appendix</i>	<i>Comments</i>	<i>Removal Action</i>	<i>1st EAROD (Approved) (2011)</i>	<i>2nd EAROD (Pending) (2020)</i>	<i>DAOU Final ROD</i>	<i>Final Response Action</i>
905-5D Elevated Domestic Water Storage Tank	K.1	Simple Model (anticipated)				F	LUCs
905-136D Backup Domestic Water Well	K.1	Simple Model (anticipated)				F	LUCs
Shaker House	K.1	Simple Model (anticipated)				F	LUCs
Crusher House	K.1	Simple Model (anticipated)				F	LUCs
Transfer House	K.1	Simple Model (anticipated)				F	LUCs
<i>D-Area Ash Basins/Landfill</i>							
488-D Ash Basin (DEXOU)	C.1, H.2	Geosynthetic Cover with Groundwater Monitoring and LUCs	C				LUCs
488-1D Ash Basin (includes Ash Sluice Lines, Inlet Basin #1, Inlet Basin #2)	C.1, H.2	Ash removal and installation of a geosynthetic cover system	C		X		LUCs
488-2D Ash Basin	C.1, H.2	Ash removal	C		X		LUCs
488-4D Ash Landfill, 488-4D	C.1, H.2	Installation of a geosynthetic cover system	C		X		LUCs
<i>Miscellaneous Units</i>							
904-50G Outfall	NA	No risk to human health or the environment.		C			None
D Area Asbestos Pit (80-20G)	C.1, C.5, H.2	Asbestos is present in subsurface. No human health or environmental risk.		C			LUCs
<i>Miscellaneous Buildings</i>							
412-3D Storage Building	K.2			C			LUCs
412-4D Mask Maintenance Building	K.2			C			LUCs
412-6D Heat Exchanger Maintenance Structure (Elevated Training Tower)	K.2			C			LUCs
412-8D Tube Bundle Inspection	K.2			C			LUCs
412-9D Bolt Storage	K.2			C			LUCs

Table B-1. Administrative Paths for the D-Area Operable Unit Waste Units and D&D Buildings/Structures (continued)

<i>DAOU Waste Unit or D&D Structure</i>	<i>FFA Appendix</i>	<i>Comments</i>	<i>Removal Action</i>	<i>1st EAROD (Approved) (2011)</i>	<i>2nd EAROD (Pending) (2020)</i>	<i>DAOU Final ROD</i>	<i>Final Response Action</i>
414-D Storage Building East	K.2			C			LUCs
415-1D Storage Building	K.2			C			LUCs
415-D Storage Building West	K.2			C			LUCs
420-3D Tritium Effluent Monitoring Building	K.2			C			LUCs
421-5D Loading Dock	K.2			C			LUCs
421-6D Heavy Water Equipment Storage	K.2			C			LUCs
480-2D Maintenance Material Storage	K.2			C			LUCs
701-1D Maintenance Support Administration Building	K.2			C			LUCs
701-2D Gatehouse Railroad Entrance	K.2			C			LUCs
701-3D Storage Building	K.2			C			LUCs
704-D Area Admin. Building and First Aid	K.2			C			LUCs
707-D Janitorial Subcontract Office	K.2			C			LUCs
711-1D Storage Building	K.2			C			LUCs
711-D T&T Office and Storage Building	K.2			C			LUCs
715-D Gasoline Station	K.2			C			LUCs
717-1D Storage Area	K.2			C			LUCs
717-4D Storage Area	K.2			C			LUCs

C = Actions and decisions have already been completed

F = Future decision yet to be made

X = Pending approval

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