Facility Decommissioning Evaluation
Building 454-D, D-Area Diesel Fuel Tank

This is a Simple Model Decommissioning per Facility Disposition Manual 1C

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Introduction

This document contains an evaluation of available existing information about a facility that is slated for decommissioning. This evaluation screens the project to determine whether it is appropriate to conduct the decommissioning under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or to use a simpler graded approach.

This Facility Decommissioning Evaluation (FDE) consists of three sections. Part 1 contains a description of the project scope, including a brief summary of the purpose and history of the facility and photographs of the structures that are part of the project. Part 2 encompasses a series of questions, the answers to which determine the decommissioning model (CERCLA Model, Integrated Sampling Model, or Simple Model) that will be used. The three graded approach models are described in Facility Disposition Manual 1C, Procedure 501. Part 2 also includes a justification for the answers to each question. Part 3 is a list of references that were used for the evaluation.

Conclusion

A review of the existing characterization data, process/building history, sample data and walk downs of the facility, supports the determination that this building and its ancillary structures meet the criteria of a Clean Building, Simple Model as described in Facility Disposition Manual 1C, Procedure 501. This decision is supported by the documentation found throughout the body of this document. No chemical or hazardous radioactive contaminants are associated with this structure.

Part 1. Project Scope

Scope

This Evaluation has been prepared in accordance with requirements found in Facility Disposition Manual 1C, Procedure 502, “Preparing Decommissioning Decision Documents”. The scope of this evaluation includes the following buildings and ancillary structures, which are further described in the next section:

- Building 454-D, D-Area Diesel Fuel Tank
- Building 454-1D, D-Area Diesel Fuel Unloading Facility

The proposed decommissioning end-state for these facilities is removal of the tank, dismantlement and removal (D&R) of the building structure, and removal of all appurtenances, leaving only the concrete slabs, concrete tank bases, concrete pump bases and surrounding concrete dikes/curbs. The sumps in the containment area of the 454-D Diesel Fuel Tank and on the west side of the 454-1D Diesel Fuel Unloading Facility (after removing the sump pumps) will be filled with concrete. The containment wall (dike) near the sump on the northwest corner of the dike wall and at the west wall (current) opening to the sump in the curb of the Unloading Facility will both be breached (cleaved) to prevent rain water from accumulating in both areas.

The described D&R activities are not the final area closure actions. The decommissioning of a building is intended to reduce landlord costs, increase safety by removing excess facilities and reduce the potential for releases of hazardous substances to the environment.

Facility Description

Building 454-D (Figures 1, 2, 3, 4 and 7) was erected on site circa 1990. The fuel oil tank is a 15,000-gallon (gal), carbon steel tank. The tank is mounted on two cradle mounts inside a containment dike. The containment dike is cast-in-place concrete. The inner dimensions of the containment dike are approximately (~) 20 feet (ft)-6 inches (in.) by 43 ft-4 in. The walls of the containment dike are ~12-in. thick while the slab is ~8-in. thick. The sump walls and floor are 12-in. thick all around. The fuel oil tank is mounted on separate foundation supports above the slab of the containment structure. The foundation supports extend below the slab of the containment (Figure 3). The bottom of the containment dike slopes to the northwest corner with an approximate slope of 1/8 in. per foot. The sump in the northwest corner of the containment dike is ~3-ft wide on each side and 3-ft deep. The sump pump is off-center to the northwest in the sump. Within the confines of the containment dike were three transfer pumps (removed during deactivation in 2014) for the fuel oil, three discharge filters and associated piping, fittings and conduit. Controls and indications were outside the containment dike. There is a mezzanine above the fuel oil tank for access to the flanges at the top of the tank. The tank also has a 24-in. manhole at the south end of the mezzanine. Access to the mezzanine, as well as the confinement area itself, is via steps and stairs in appropriate locations There are two sets of steps over the containment dike to allow access within the containment area. The whole of the structure has a pole supported roof that provides some protection from the elements. Lighting was installed in the roof of the structure. Building 454-D does not have any readily identifiable sources of asbestos materials. The major materials of construction for the mezzanine and roof, as well as supports for each, are galvanized and painted carbon steel.

Figure 1. Building 454-D, D-Area Diesel Fuel Tank

Figure 2. Building 454-D, D-Area Diesel Fuel Tank

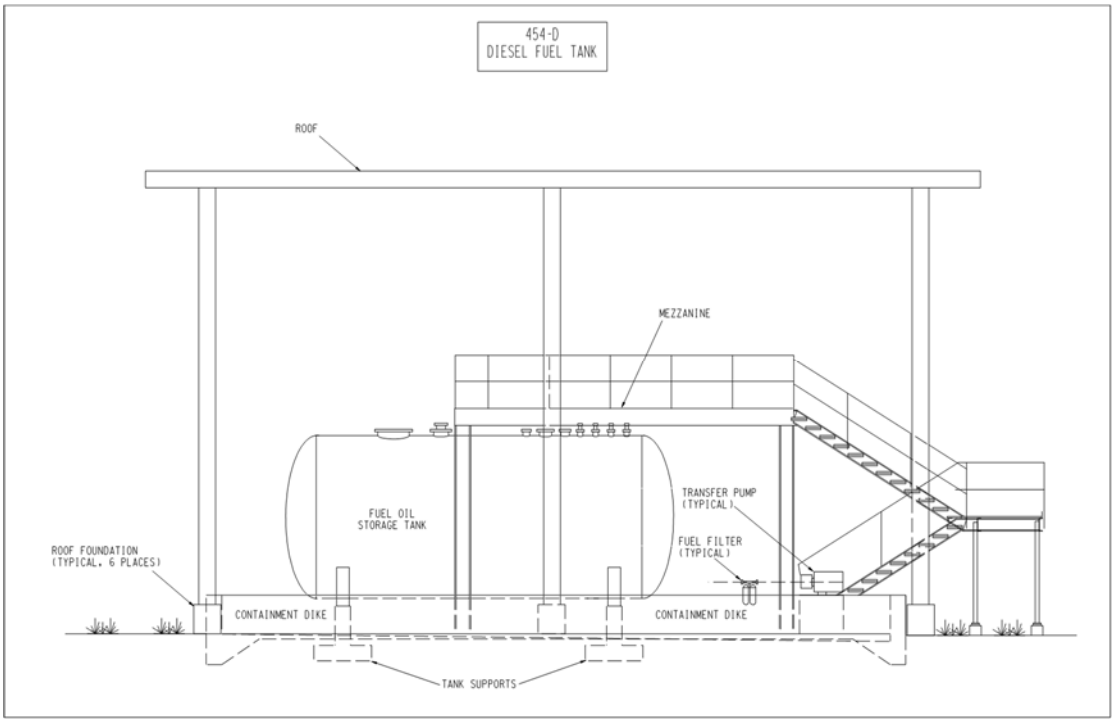

Figure 3. Building 454-D, D-Area Diesel Fuel Tank Layout (East View)

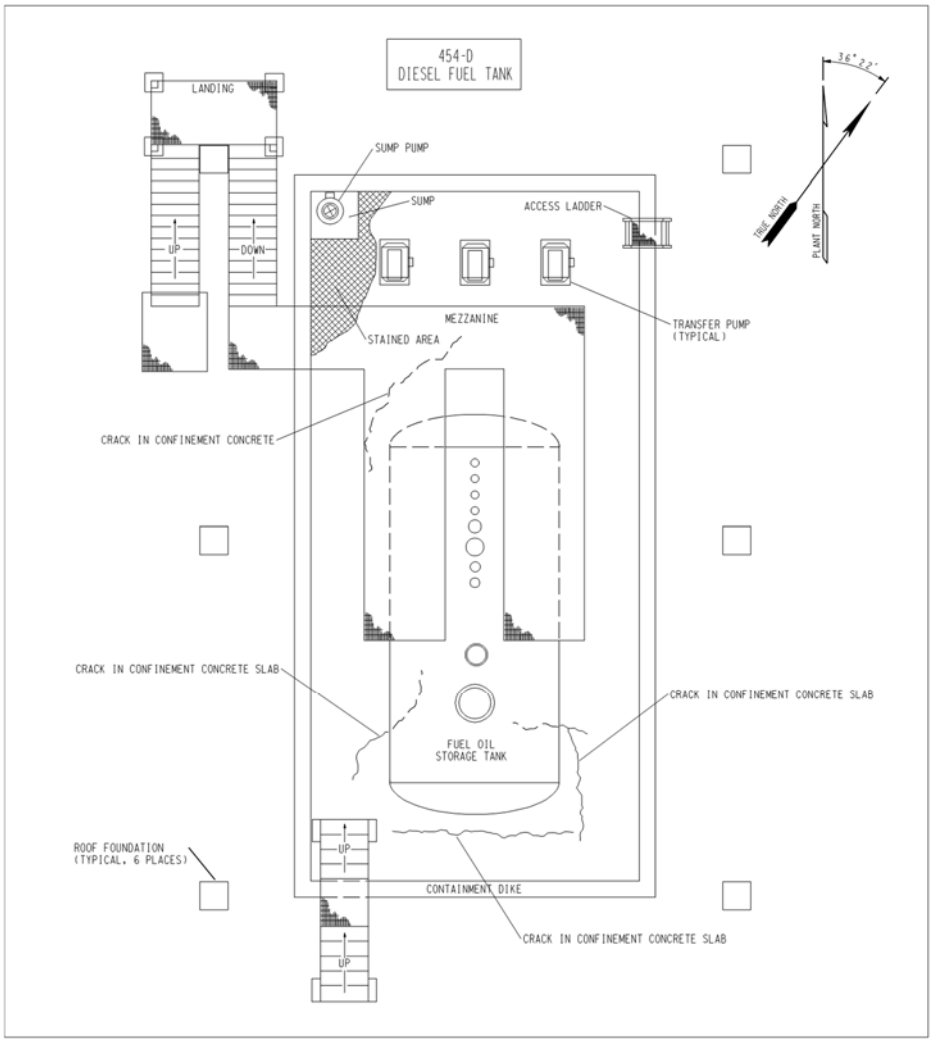

Figure 4. Building 454-D, D-Area Diesel Fuel Tank Layout (Plan View)

The fuel oil truck unloading facility, 454-1D (Figures 5, 6 and 7), was also erected circa 1990. The concrete pad for the unloading station is approximately 63’ long by 13’ wide. Included in the width are 6” wide curbs that run the length of the pad on either side. The curbs are 6” high at the ends of the pad and maintain a constant elevation the length of the pad. Approximately 26’- 6” south of the north end of the pad, on the west side, is the unloading facility equipment. This includes the tanker connection, a spill box for catching small amounts of fuel oil spilled during connecting and disconnecting the tank truck, and a sump for catching spills of fuel oil from the pad. The entire pad at the unloading station slopes to the location of the sump. The opening in the curb that passes to the sump is 6” below the elevation at the north and south ends of the unloading station slab as well as the east side. The unloading facility sump is 4’ on each of the sides and 4’ deep. The sump pump is centered in the sump. Again, other than reinforced concrete, the major materials of construction are painted and galvanized steel. Controls and indications are located at the station. Power to the facility was disconnected during deactivation (refer to “Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings”, V-PCOR-D-00042, Reference 8).

For purposes of decommissioning, the cable trays and conduit/piping supports associated with these facilities are included (see Savannah River Site [SRS] drawing W2012834). This includes all supports up to the tie-in at the southwest corner of the 484-D Powerhouse.

Figure 5. Building 454-1D, D-Area Diesel Fuel Unloading Facility

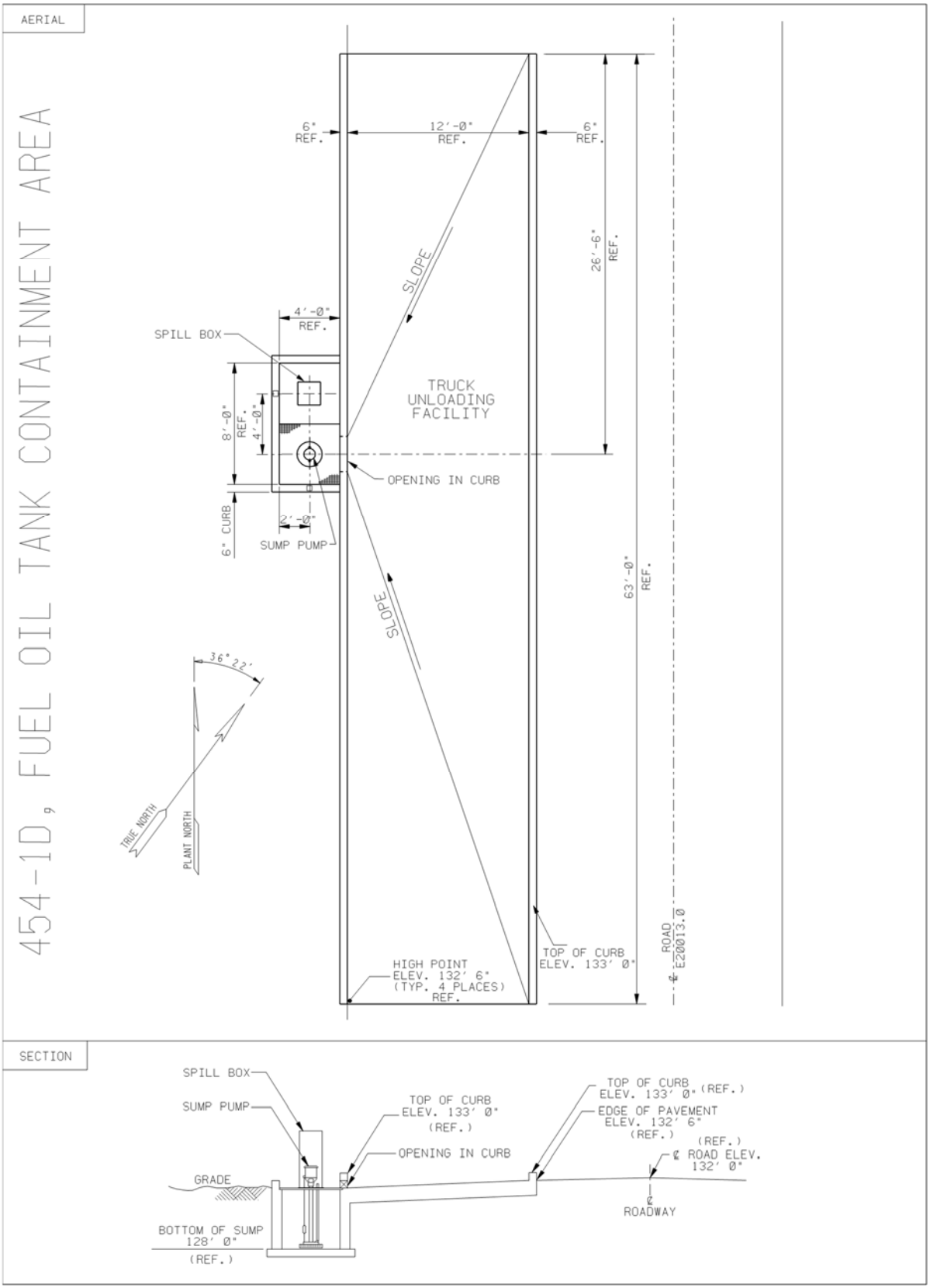

Figure 6. Building 454-1D, D-Area Diesel Fuel Unloading Facility Layout

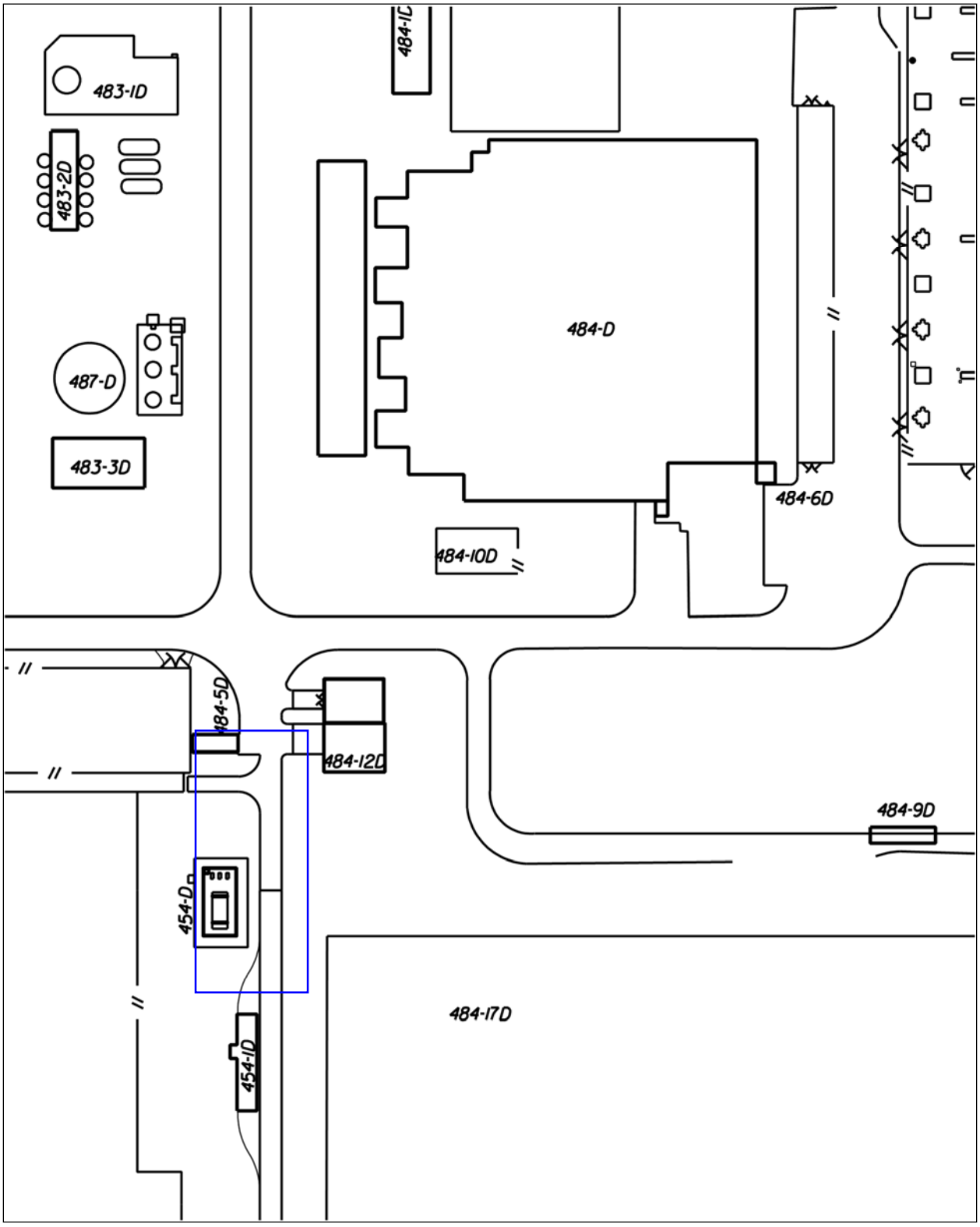

Figure 7. Buildings 454-D & 454-1D, D-Area Diesel Fuel Tank & Unloading Facility Layout

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 unloading facility (454-1D) and fuel oil storage facility (454-D) have only been used for their designed purpose. There is no evidence of used fuel oil being added to the storage tank, only virgin oil. There was evidence of minor spills having occurred within the containment structure and sump of the fuel oil storage tank, as well as at the unloading facility. In both instances, these stains were pressure washed during deactivation of these facilities in 2014.

There are no records within the SRS Occurrence Reporting and Processing System/Site Item Reportability and Issue Management (ORPS/SIRIM) database for the structures. SRS historical spill files, accessible via InSite (the SRS internal website), do not reveal any spills having occurred at the structures. Concerning oil stains that were observed prior to deactivation in 2014, they were restricted to the containments for the structures, as designed, with no evidence of spills/releases outside the containments.

No chemical or radioactive processes have occurred in the 454-D or 454-1D facilities. No floor drains exist for the facilities. The sumps in the facilities are pumped to waste oil trucks or portable tanks for processing away from the facility.

Chemical Process

Chemical Name	Process Location	Evidence of Spills?
N/A	N/A	N/A

N/A – not applicable

Radioactive Process

Isotope	Contaminated Areas/Others
N/A	N/A

N/A – not applicable

Minor stains are observable in both the 454-D storage facility and the 454-1D unloading facility but appear to only be due to dirt. Further, minor surface cracks and peeling coating in the slab of both facilities are observable. Figure 8 shows the location where the three transfer pumps were in the diked area of 454-D. Figure 9 shows minor surface discoloration, minor surface cracks and slab coating degradation and dirt/debris in the 454-1D unloading facility. Figures 10, 11, and 12 show the minor surface cracks and peeling coating on the 454-D storage area slab. Both areas/slabs are designed so that any significant spills flow toward the sumps and do not remain pooled on the slabs.

Figure 8. Building 454-D, D-Area Diesel Fuel Tank (Previous Transfer Pump Location)

Figure 9. Building 454-1D, D-Area Fuel Unloading Facility (Minor Surface Stains, Cracks and Dirt)

Figure 10. Building 454-D, D-Area Diesel Fuel Tank Minor Slab Cracks and Coating Peeling (South End)

Figure 11. Building 454-D, D-Area Diesel Fuel Tank Minor Surface Slab Cracks

Figure 12. Building 454-D, D-Area Diesel Fuel Tank Minor Surface Slab Cracks and Minor Staining (Northwest End)

Summary of Existing Characterization

Characterization has been accomplished using a combination of process knowledge/historical release information, verification walk downs and a review of S-EHA-D-00001, "Hazards Survey for D-Area".

Process history shows that virgin, uncontaminated diesel fuel only has been unloaded and stored at the facility. Also, given the design/slope construction of the containment area and unloading facility, only minimal amounts of diesel fuel would have reached the cracked areas of the slab, limiting the extent to which diesel fuel could migrate through the cracks to the soil. The areas are designed to cause any significant spills to flow toward the sumps and not to remain pooled on the slabs. Based on process history and design factors, no final verification survey is required. Any stains on the concrete of both areas will be pressure washed and cleaned with a strong surfactant such as BioSolve™ after completion of decommissioning.

An important part of the characterization portion of this evaluation is a historical review of spills/releases to the environment. This review includes a review of the SRS ORPS/SIRIM database conducted from the effective date of the Federal Facility Agreement (FFA), August 16, 1993, to present and a review of the FFA. The FFA serves as a review of releases/spills to the environment prior to August 16, 1993.

A South Carolina licensed asbestos inspector conducted an asbestos survey of the facilities, equipment and appurtenances and found no evidence of Asbestos Containing Materials (ACMs) (Reference 19). However, no evaluation of the electrical wiring insulation or electrical panel box components was performed and all suspect materials (if any) discovered inside the electrical boxes must be considered Presumed Asbestos Containing Material (PACM) until sampled by a licensed inspector. In addition, all suspect gaskets (if any) must be considered PACM. Gaskets in unbroken flanges are determined to be in a hardened substance therefore not subject to regulatory requirements if undisturbed.

Wastes generated during D&R will be characterized and managed in accordance with SRS procedures and State and Federal regulations.

Historical Significance

A review has been conducted in accordance with a Programmatic Agreement. This review resulted in the publication of the SRS's Cold War Built Environment Cultural Resources Management Plan (Reference 6), in which the facilities with historical significance are listed. These facilities are not listed in that reference and therefore are not historically significant.

Part 2. Evaluation

Clean Facilities

	Question	Yes	No	Justification
1.	Has the facility ever contained or processed radioactive or hazardous material other than stored packaged material or materials of construction? *If yes, go to question 4.*		X	Facility contains a storage tank for #2 diesel fuel oil and ancillary structure for truck off-loading of diesel fuel to supply the storage tank. Fuel was transferred from the storage tank to 484-D Powerhouse via transfer pumps at 454-D diesel fuel storage facility.
2.	If there was stored packaged material, has there ever been a spill? *If No or N/A, this is a Simple Model. Stop.*	X		There was evidence of minor fuel oil spills in the containment dike around the storage tank, but this area was pressure washed during deactivation. There was no visible evidence of spills at the truck off-loading station.
3.	Was spill confined inside structure and cleaned to free release standard per Radiological Control Manual 5Q (for radiological) or continued occupancy per Industrial Hygiene Manual 4Q (for hazardous)? *If Yes, this is a Simple Model. Stop.*	X		Spills in the diked area have been steam cleaned. Any residual oil/stains after decommissioning will be cleaned with a strong surfactant such as BioSolve™ in both areas. **Buildings 454-D and 454-1D will be a Simple Model decommissioning.**

Contaminated Facilities

	Question	Yes	No	Justification
4.	Is the facility listed as a RCRA/CERCLA Unit in Appendix C of the SRS FFA? *If Yes, this is a CERCLA Model. Stop.*			N/A
5.	Is the facility listed as a Site Evaluation Area in Appendix G of the SRS FFA? *If Yes, this is a CERCLA Model. Stop.*			N/A
6.	Is there evidence that there has been a release of hazardous or radioactive materials outside the structure? *If Yes, this is a CERCLA Model. Stop.*			N/A
7.	Is there a substantial threat of a release of hazardous or radioactive materials outside the structure? *If Yes, this is a CERCLA Model. Stop.*			N/A
8.	Has the facility been assigned a hazard category as defined in Facility Safety Document Manual 11Q? *If No, stop and refer facility for evaluation to assign a hazard category, then proceed*			N/A

Contaminated Facilities *(cont'd)*				
	Question	**Yes**	**No**	**Justification**
9.	Is the hazard category Nuclear (HC- 2 or 3), radiological, or high hazard chemical? *If Yes, this is a CERCLA Model. Stop*			N/A
10.	Has the Department of Energy-Savannah River directed that the decommissioning be performed using the CERCLA Model? *If yes, this is a CERCLA Model. Stop*			N/A
12.	Is the facility a formerly nuclear, radiological, or high-hazard chemical facility? *If Yes, this is an Integrated Sampling Model. Stop.*			N/A
13.	Has Environmental Compliance and Area Completion Project's Regulatory Support Group determined that a final survey is not required for this facilty? *If Yes, this is a Simple Model. If No, this is an Integrated Sampling Model. Stop*			N/A

N/A – not applicable

Part 3. Review of Existing Records

The following facility records were reviewed as a part of this evaluation:

Ref #	Document No.	Revision/Date	Title
1	Manuel 1C, Procedure 501	Rev. 6, Aug. 13, 2019	"Decommissioning of Facilities"
2	Manuel 1C, Procedure 502	Rev. 5, Nov. 8, 2018	"Preparing Decommissioning Decision Documents"
3	SRNS-RF-2008-00086-000-M&O	Revision 19-01-MO, Feb. 14, 2019	Standard Requirements Identification System FA00 Facility List.
4	WSRC-OS-94-42	Rev 0, Aug. 16, 1993 All updates through Sept. 21, 2018, including Rev. 0 Appendices C, G and K for Fiscal Year 2019	FFA for the SRS, Administrative Document No. 89-05-FF
5	N/A	N/A / Since 1993	D-Area SIRIM and ORPS reports 08/1993 to 02/2009.
6	N/A	Final January 26, 2005	SRS's Cold War Built Environment Cultural Resources Management Plan
7	S-EHS-D-00001	Rev 0/April, 2006	D-Area Hazards Survey
8	V-PCOR-D-00042	Rev. 0/ July 1, 2014	Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings
9	SE5-4-2006141	Rev 0/December, 1990	Fuel Oil Storage Tank Plan, Power Equipment Arrangement, Power
10	SE5-4-2003058	Rev 1/December, 1990	Building 454-D & 1D Area 400-D Power House Fuel Storage Power Plan, Electrical
11	SE5-4-2003090	Rev 0/December, 1990	Building 454-D Area 400-D Sections Power Equipment Arrangement Power
12	SE5-4-2003091	Rev 1/September, 1991	Building 454-D Area 400-D Truck Unloading Plan Power Equipment Arrangement Power
13	SE5-4-2003092	Rev 0/December, 1990	Truck Unloading Plan Power Piping Arrangement Power
14	M-MA-D-0073	Rev 1/May, 1995	Operating Diagram Fuel Oil System Buildings 454-D, 484-D, & 910-D (D-WP-062)
15	W838149	Rev 2/February, 1994	Building 454-1D Area 400-D Fuel Oil Storage Power Piping & Instrumentation Diagram Power and Instrumentation (U)
16	SE5-4-2003095	Rev 0/December, 1990	Fuel Oil OSOH Piping Power Piping Arrangement Power (U)
17	SE5-4-2003096	Rev 1/February, 1993	Fuel Oil OSOH Piping Power Piping Arrangement Power (U)
18	W20122834	Rev 1/March, 1993	Tank Storage & Truck Unloading Facility Site Plan and Pipe Supports Plan and Details Civil
19	Q-APG-D-00021	Rev. 0, November 25, 2019	Baseline Asbestos Inspection Report of Above Ground Storage Tank Building 454-D and Fuel Station Building 454-1D.