Savannah River Remediation
AMENTUM | BECHTEL | JACOBS | BWXT

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Rev. 1

THE LIQUID WASTE SYSTEM — A STATUS —

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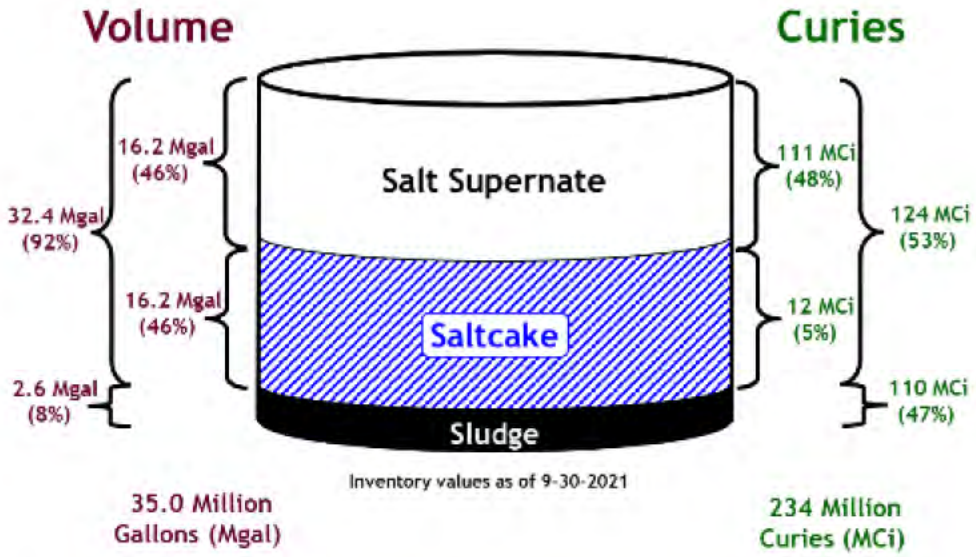
Safety SRR Integrity SRR Ownership SRR Teamwork SRR Continuous Improvement

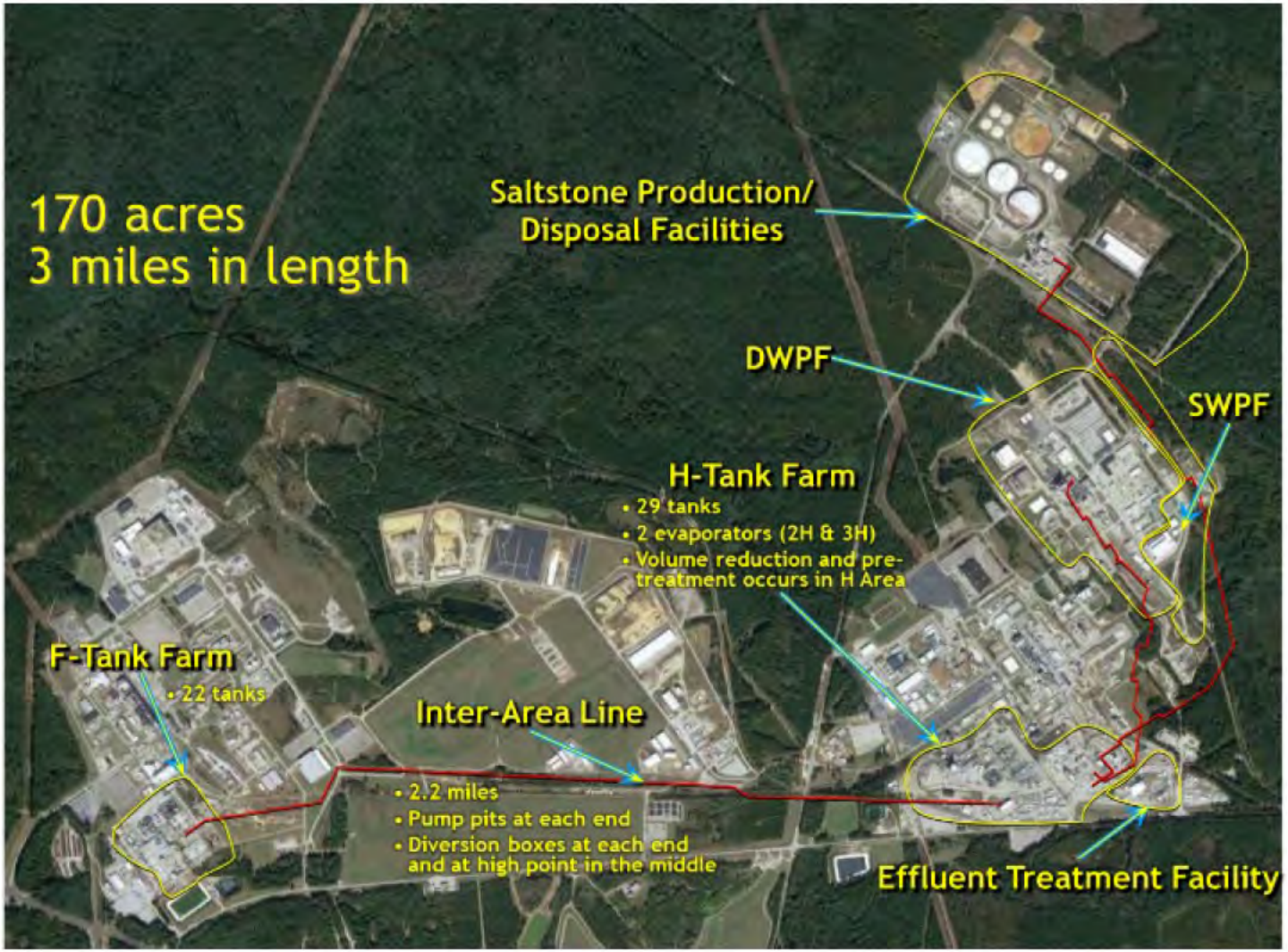
Cold War Legacy: 35 million gallons of High-Level Waste



The first high-level waste entered F-Tank Farm in November 1954 and into H-Tank Farm in August 1955 - Approaching 70 years ago!

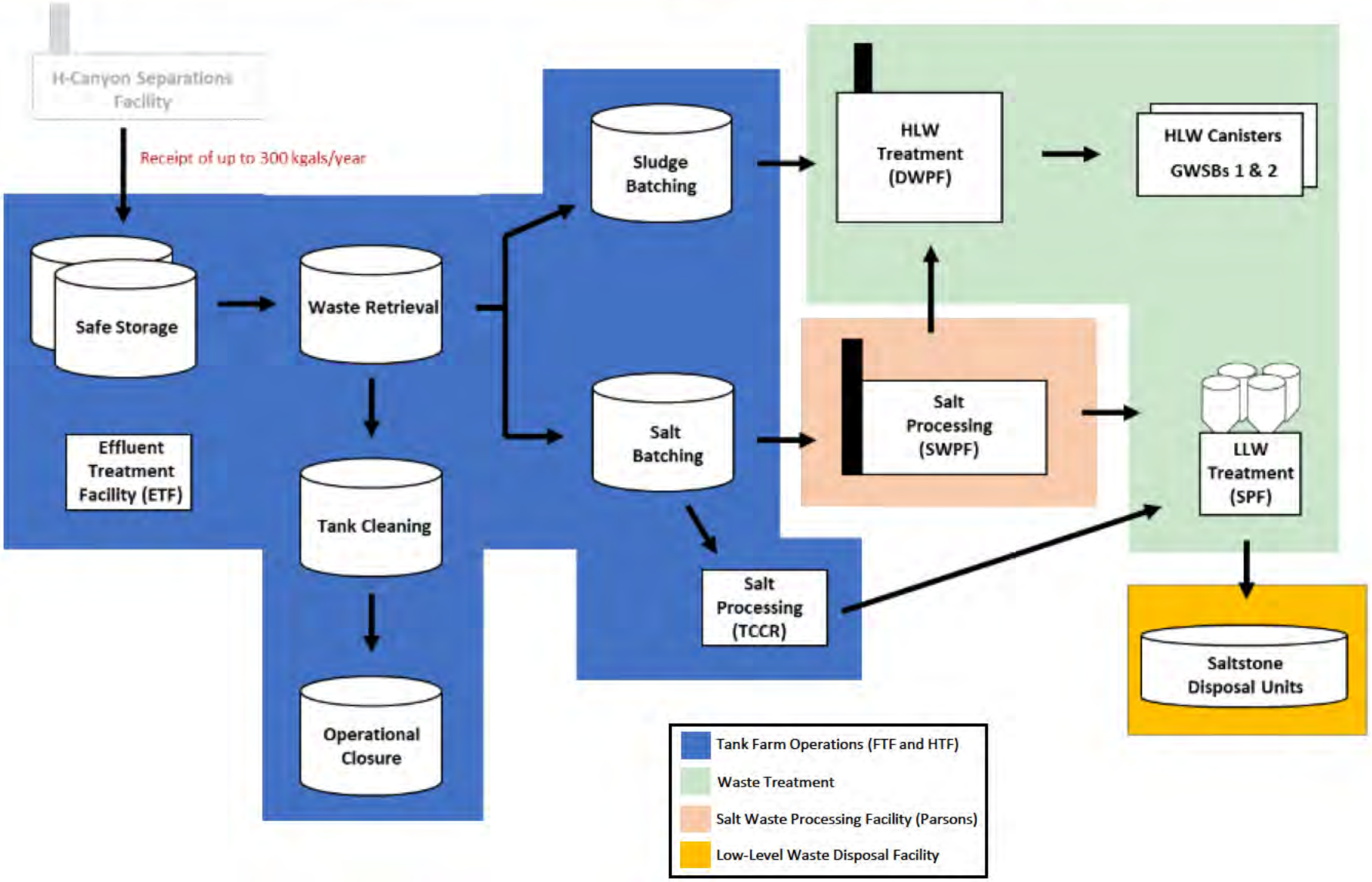
- **The mission is to retrieve, process, treat and dispose of the legacy tank waste, and to close the tanks and ancillary structures, as quickly, safely and efficiently as possible**
- **43 of the 51 waste tanks are still active storing or supporting waste processing**
  - **8** waste tanks have been operationally closed
- **A significant investment has been made in the four key processing and treatment facilities:**
  - Tank Farms
  - Defense Waste Processing Facility (DWPF);
  - Salt Waste Processing Facility (SWPF)
  - Saltstone Production Facility (SPF)

Liquid Waste System Footprint

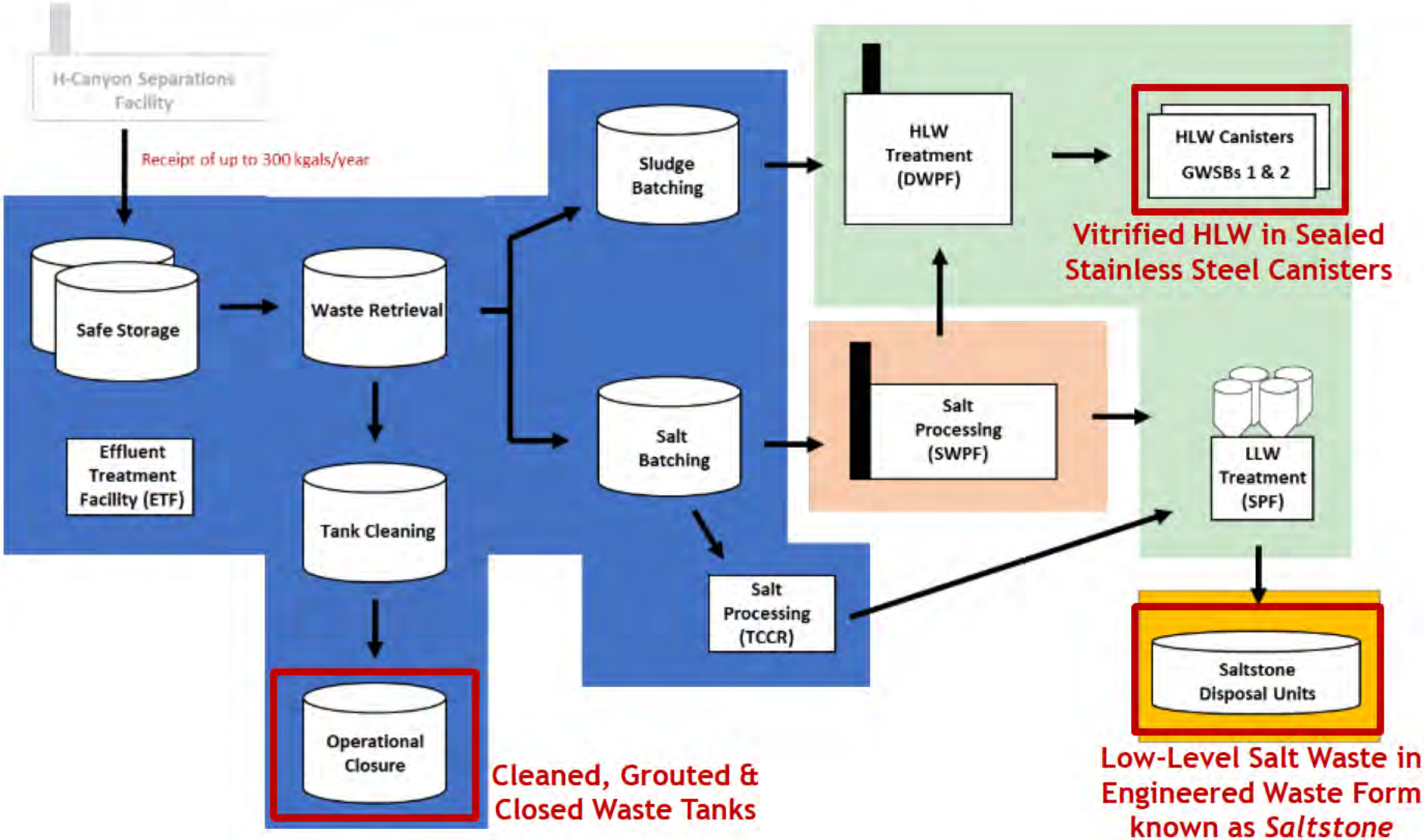


Initial Service / Operation	
Tanks 1 - 8 (Type I - FTF)	1954 - 1961
Tanks 9 - 12 (Type I - HTF)	1955
Tanks 13 - 16 (Type II)	1956 - 1960
Tanks 17 -20 (Type IV - FTF)	1959 - 1961
Tanks 21 - 24 (Type IV - HTF)	1961 - 1965
Tanks 29 - 32 (Type III - HTF)	1971 - 1974
Tanks 33 - 34 (Type III - FTF)	1973 - 1974
Tanks 35 - 37 (Type IIIA - HTF)	1977 - 1978
Tanks 25 - 28 (Type IIIA - FTF)	1980
Tanks 44 - 47 (Type IIIA - FTF)	1981 - 1982 (Tank 46 - 1994)
Tanks 38 - 43 (Type IIIA - HTF)	1981 - 1986
2H Evaporator System	1982
Tanks 48 - 51 (Type IIIA - HTF)	1983 - 1986
ETF	1988
SPF / SDF	1990
DWPF	1996
3H Evaporator System	2000
SWPF	2021

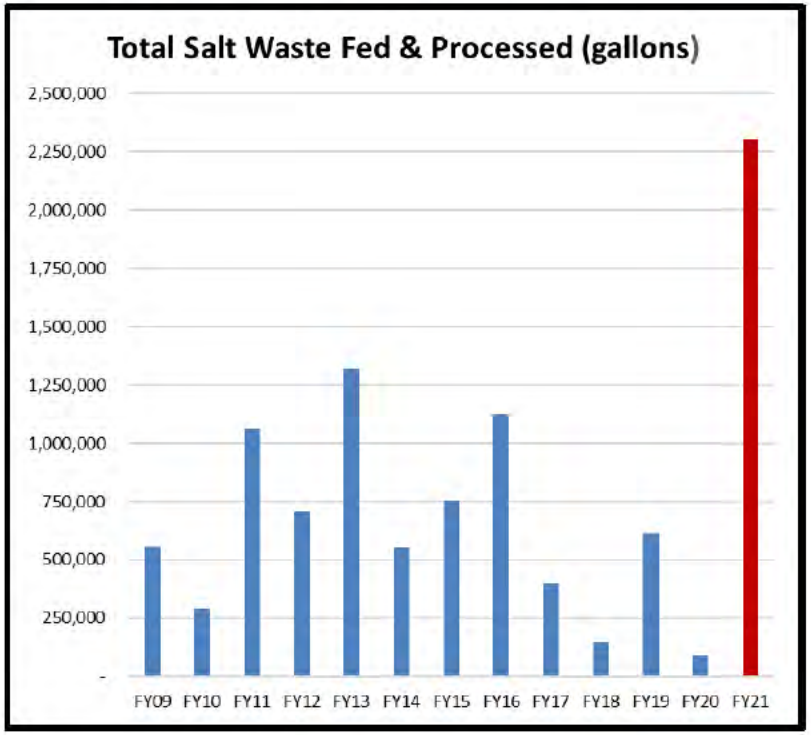
The Highly Integrated Liquid Waste System



The Three End States



Tank Farm Operations/Waste Removal

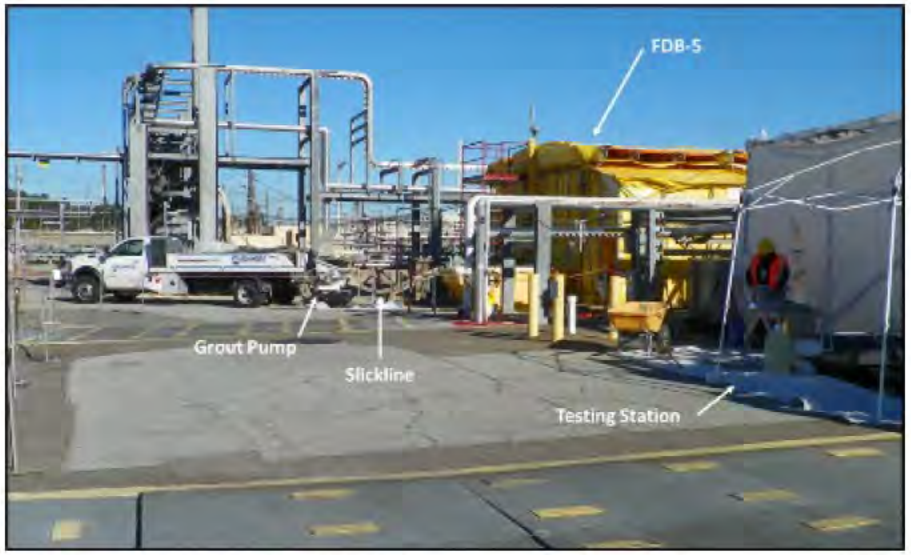


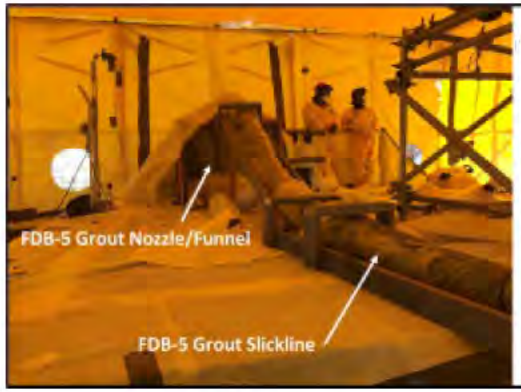
In 2021, SRR prepped, qualified and transferred over 2,300,000 gallons of salt solution to SWPF - Nearly DOUBLED the previous record!

- A key area of focus is preparing and transferring salt batches to meet the future rate of up to 9 million gallons per year
- Waste retrieval efforts increased significantly during FY21 to prepare tanks for salt and sludge removal activities
- Waste retrieval activities ranging from initial design work to field installation of mixing and transfer pumps is being performed for 11 salt tanks - Tanks 2, 3, 9, 10, 27, 28, 29, 31, 37, 44 and 47 - and five sludge tanks - Tanks 14, 15, 33, 35 and 39
- Salt batch qualification time has been reduced from 6 months to 6-7 weeks

Ancillary Structure Operational Closures

- F-Area Diversion Boxes (FDB) 5 and 6 were two HLW transfer support structures dedicated to operation of the now inactive 1F Evaporator System
  - 1F Evaporator last operated in 1989
- Developed regulatory strategy for closure of first-of-a-kind inactive ancillary structures
- Completed all regulatory documentation and received approval/concurrence from DOE, SCDHEC and EPA to proceed
- Initiated grouting activities
- Estimated completion of FFA milestone well before the December 31, 2022 commitment date

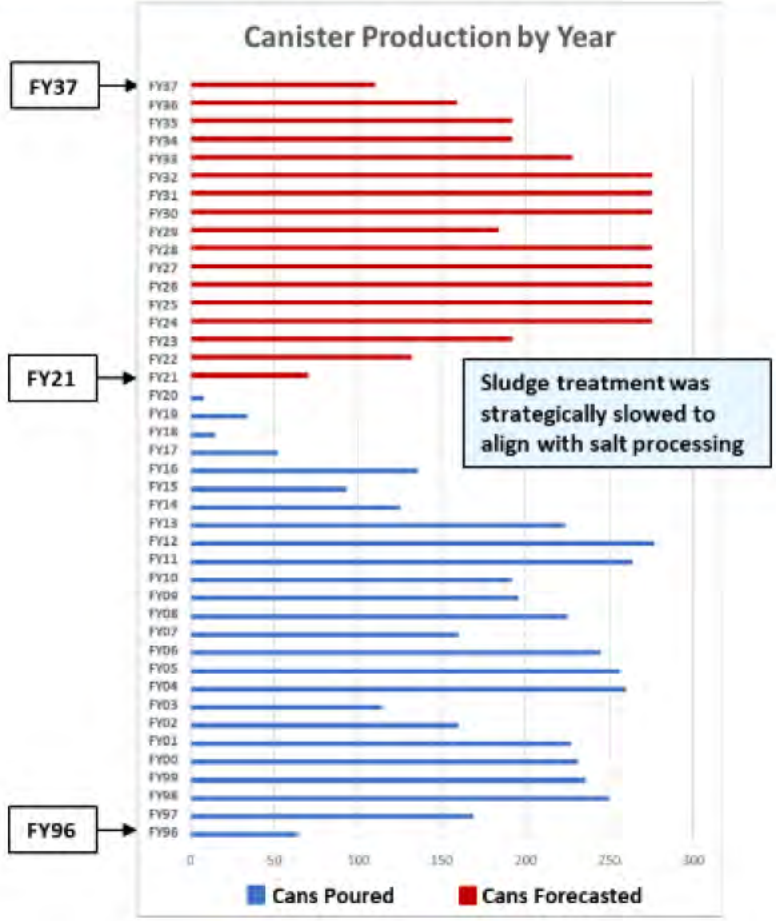




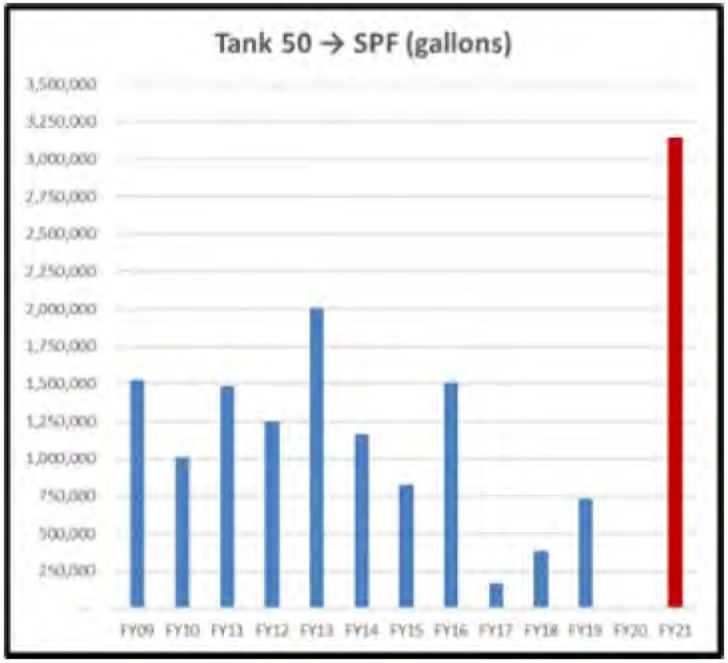
HLW Treatment - DWPF

- **DWPF poured 59 canisters of vitrified high-level waste during FY21, maximizing Strip Effluent (SE) volume per canister while ensuring that SWPF operations were never impacted**
  - Received 195 kgals of SE and 38 kgals of filtered solids from SWPF
  - Significantly increased canister loading of salt waste
- **Introduced a new antifoaming agent**
  - Reduced foaming and flammable vapors in vessels, allowing higher boiling rates to increase facility throughput rates
- **Preparing to convert from a formic acid to a glycolic acid flowsheet to further increase throughput rates**
- **Completed construction of Melter 4**

Since 1996, DWPF has produced 16.4 million pounds of vitrified waste incorporating over 62.4 million curies within 4,250+ canisters

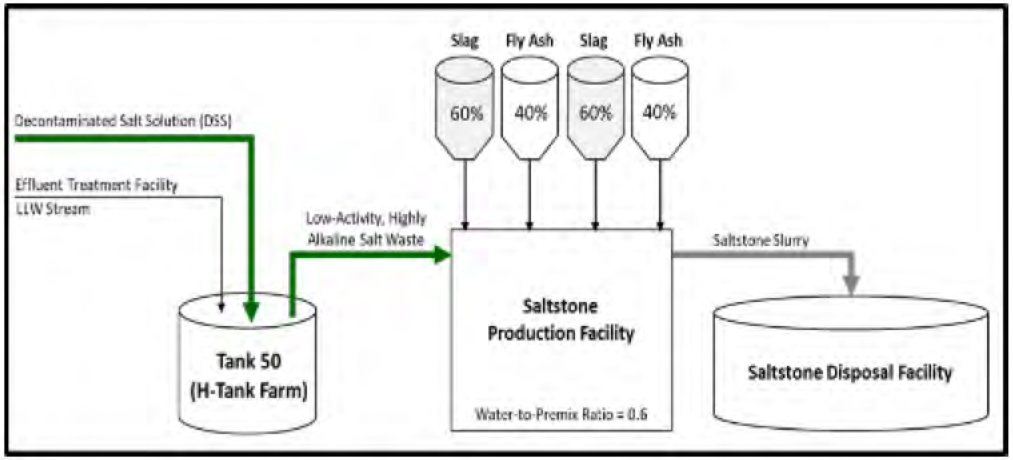


LLW Treatment & Disposal - Saltstone Facilities



- **Saltstone Production Facility received and treated 3,143 kgals of decontaminated salt solution from Tank 50 in FY21**
  - Smashed previous production records for SPF
  - 5,079 kgals of saltstone was emplaced in SDU 6
- **SRR has hired, trained and qualified personnel needed for three-shift operations that will commence in 2022**
- **Modifications to the Saltstone Hopper Overflow Container (SHOC) tank will decrease impact of process upsets**

- **SPF transitioned to a two-component saltstone formulation**
  - 60 wt% Blast Furnace Slag + 40 wt% Fly Ash; elimination of cement
- **Followed a decade of research, testing and modeling**
- **Doubles dry materials storage**



Saltstone Disposal Units

- SDU 6 is currently receiving saltstone grout from the SPF
- SDU 7, the second of the mega-unit design, completed construction activities, readiness reviews and received Authority to Operate
  - SDU 7 project was completed 8 months ahead of the original schedule and $32M under the approved Total Project Costs
- SDU 8 has completed tank construction and is undergoing prestressing
- SDU 9 has completed emplacement of floor sections and multiple wall panels
- SDUs 10-12 awaiting FY22 funding

2021 Was A Year of Progress

Record Setting Production Performance

- ~4,000 kgals of salt feed prepared/qualified in the Tank Farms
- ~2,300 kgals of salt fed to SWPF
- ~3,140 kgals of decontaminated salt solution treated at SPF
- ~5,079 kgals of saltstone emplaced in the SDUs

Notable Achievements

- Met all SWPF feed requests and receipt of SWPF products
- Reduced Salt Batch qualification to < 7 weeks
- Actively preparing 16 tanks for waste removal
- Implemented new antifoaming agent in DWPF
- Completed regulatory requirements and began closure of FDB-5/6
- Completed construction and placed SDU 7 into Operations mode ahead of schedule and under budget