SRMC SAVANNAH RIVER MISSION COMPLETION®

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SRMC-CWDA-2026-00045
Revision 1

Proposal to Cease Waste Removal Activities in Tank 2 and Enter Sampling and Analysis Phase

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Waste Disposal Authority

September 10, 2026

Presentation Outline

- Meeting Objective
- Summary/Recommendations
- Waste Removal History and Results
- Additional Cleaning Considerations
- Path Forward
- Request for Department of Energy (DOE), South Carolina Department of Environmental Services (SCDES), and Environmental Protection Agency (EPA) Concurrence
- Background

Acronyms

ALT	Alternate
BSL	Bulk Salt Level
CGCP	Consolidated General Closure Plan
CM	Closure Module
CSMP	Commercial Submersible Mixing Pump
CTS	Concentrated Transfer System
DOE	Department of Energy
DSS	Dissolved Salt Solution
DWPF	Defense Waste Processing Facility
EPA	Environmental Protection Agency
FFA	Federal Facilities Agreement
FTF	F Tank Farm
HHW	High Heat Waste
HTF	H Tank Farm
LL	Liquid Level
LTAD	Low Temperature Aluminum Dissolution
MCL	Maximum Contaminant Level
LWTRSAPP	Liquid Waste Tank Residuals Sampling and Analysis Program Plan
MCL	Maximum Contaminant Level
S&A	Sampling and Analysis
SCDES	South Carolina Department of Environmental Services[1]
SCDHEC	South Carolina Department of Health and Environmental Control[1]
SPF	Saltstone Production Facility
STD	Standard
STP	Submersible Transfer Pump
SWPF	Salt Waste Processing Facility

[1]South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024. Throughout this presentation figures and text reproduced from existing documents may still reflect SCDHEC nomenclature.

Meeting Objective

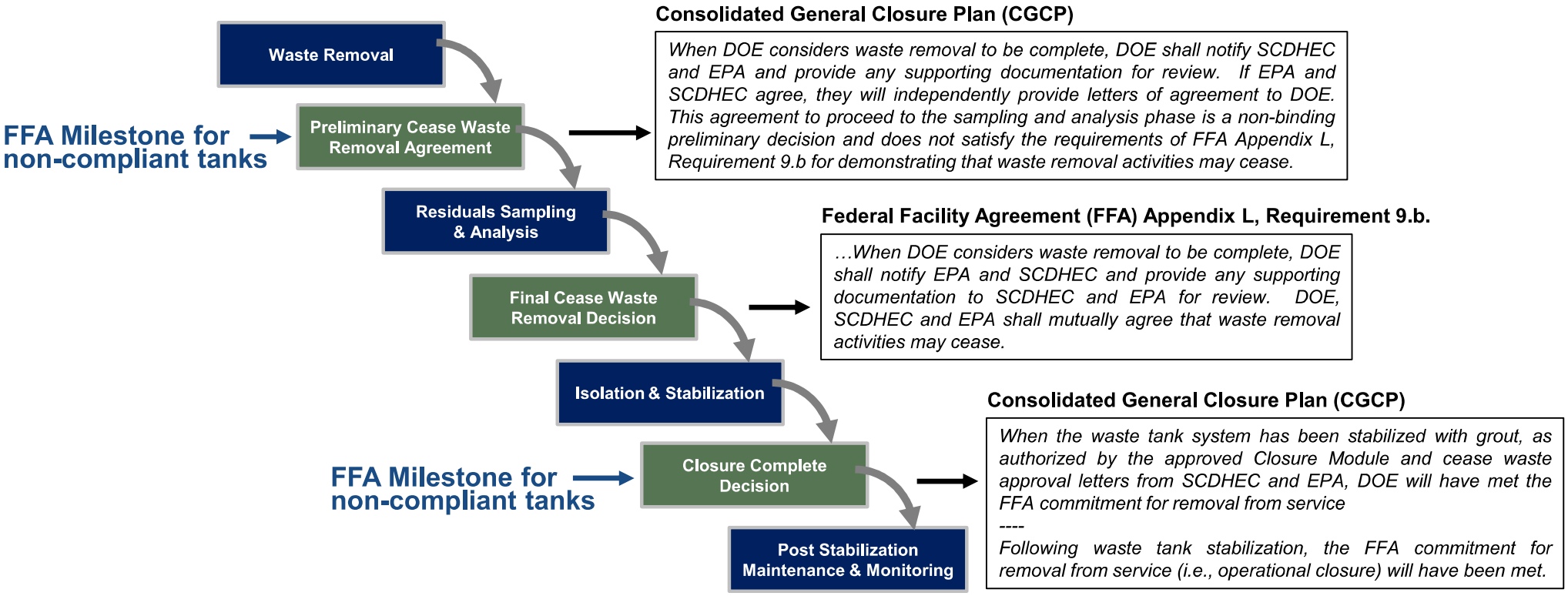
Obtain mutual agreement among DOE, SCDES, and EPA to:

1. **Suspend waste removal activities in Tank 2; and**
2. **Enter the Sampling and Analysis phase in Tank 2 consistent with the *Consolidated General Closure Plan for F-Area and H-Area Waste Tank Systems* (CGCP) and *Liquid Waste Tank Residuals Sampling and Analysis Program Plan* (LWTRSAPP)**

Tank 2 Primary



Tank Closure Process



Summary

- Approximately 99% of the waste volume in Tank 2 has been removed
- A qualitative assessment indicates that the CGCP performance objectives will not be challenged
- Additional waste removal in Tank 2 would have limited impact on estimated doses/performance objectives in the F-Area Tank Farm (FTF) Performance Assessment
- Additional waste removal activities in Tank 2 would have a negative impact on other Liquid Waste risk reduction activities
- A quantitative assessment utilizing final residual waste volumes and results of sampling and analysis will be included in the Closure Module covering Tank 2
- A formal discussion on the “practicability” of additional waste removal will be included in the Closure Module covering Tank 2

Performance Objectives

Based on the characteristics and estimated volume of the waste remaining in Tank 2, performance objectives are expected to be met.

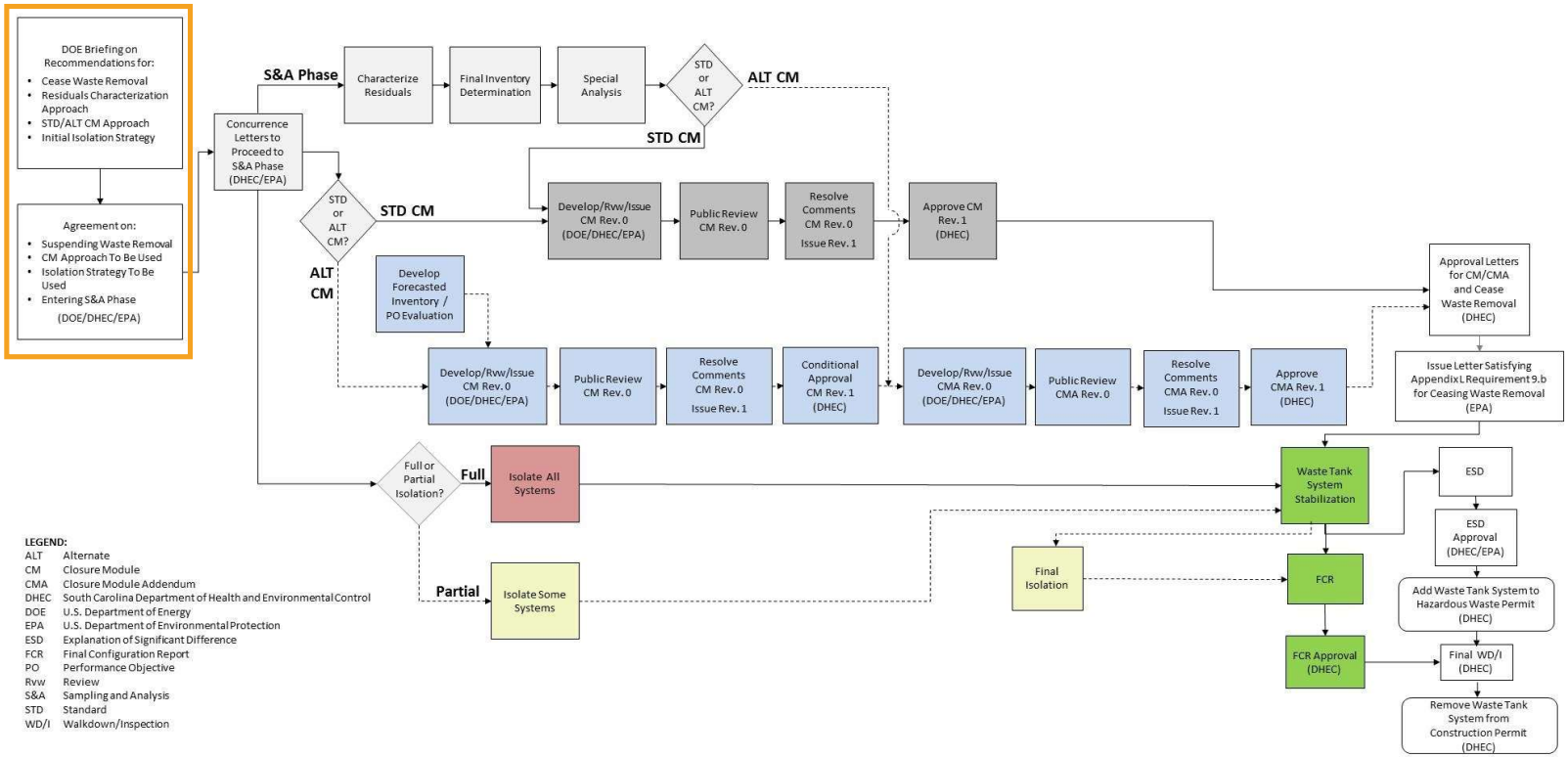
- Anticipate that concentration values in the groundwater for FTF will be below the Maximum Contaminant Level (MCL) values for all the non-radiological inorganic constituents listed in Table 9.2-1 of the CGCP
- Anticipate that concentration values in the groundwater for FTF will be below the MCL values for radionuclides consistent with the State Primary Drinking Water Regulations including:
  - *4 mrem/yr dose for beta- and gamma-emitting nuclides*
  - *15 picocuries per liter (pCi/L) for alpha-emitting nuclides (including Ra-226 but excluding radon and uranium)*
  - *5 pCi/L for radium (Ra-226 plus Ra-228)*
  - *30 micrograms per liter (µg/L) of uranium*

Radiation Dose Perspective

- **Anticipate that the peak dose from Tank 2 alone will be <8 mrem/year during both the 1,000 year and 10,000-year periods after FTF closure[1]**
- **To put this radiological dose into perspective**
  - *Per NCRP-160, the average annual dose to a person in the United States is approximately 620 mrem primarily from:*
    - Approximately 310 mrem from naturally occurring background
    - Approximately 300 mrem from medical procedures

[1] Based on a preliminary estimate of the volume. Final inventories and dose impacts will be included in the Closure Module.

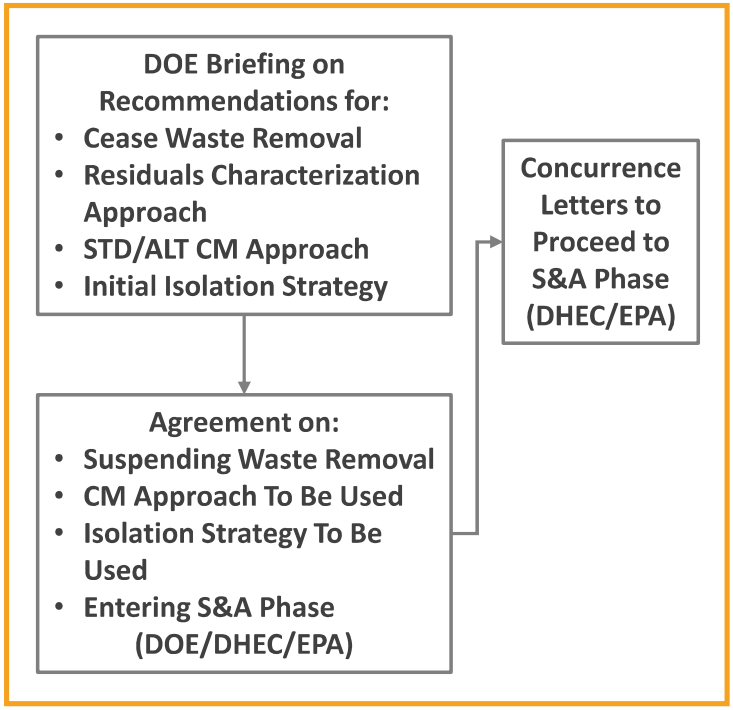
Pathway to Closure



Closure Module Approval and Waste Tank System Removal from Service Process (CGCP Figure 11.4-1)

[SRR-CWDA-2017-00015]

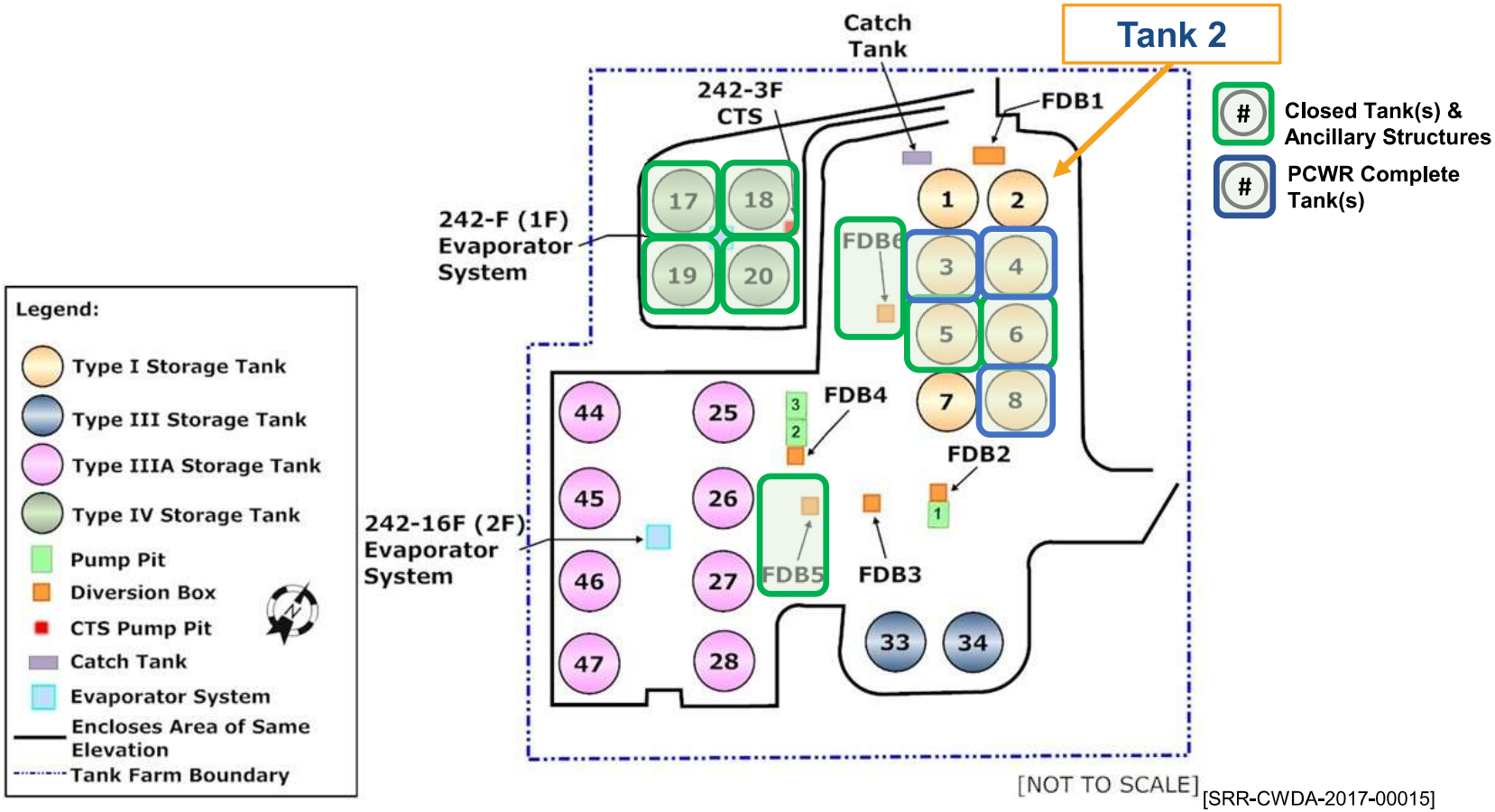
Recommendations



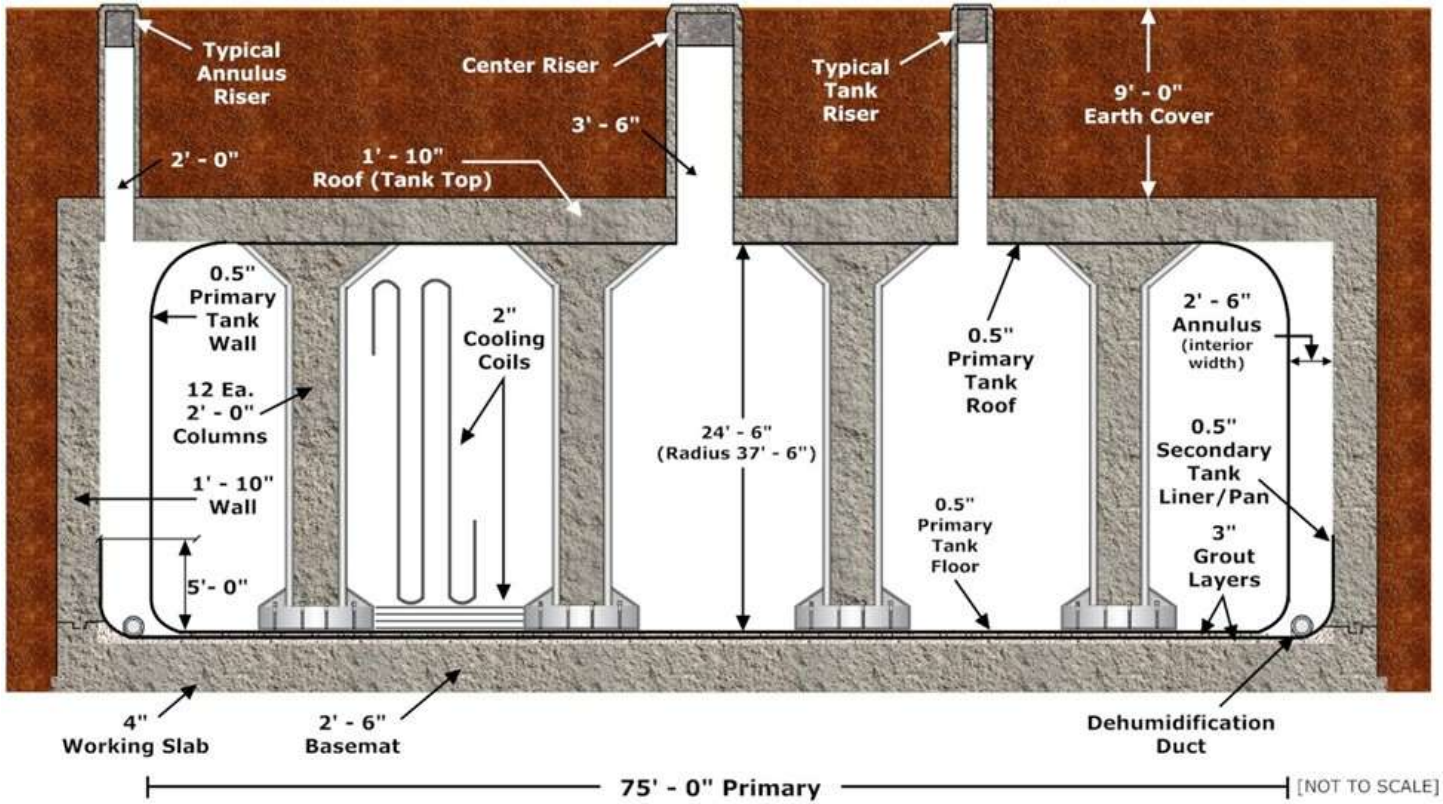
[SRR-CWDA-2017-00015]

1. **Suspending waste removal activities and enter the Sampling and Analysis phase.**
   - *Sampling and analysis to be performed per the LWTRSAPP*
2. **DOE will draft a Closure Module using the *Standard Closure Module* Approach**
3. **The Closure Module will include appropriate isolation and stabilization provisions using the *Partial Isolation* approach**

F-Tank Farm Layout



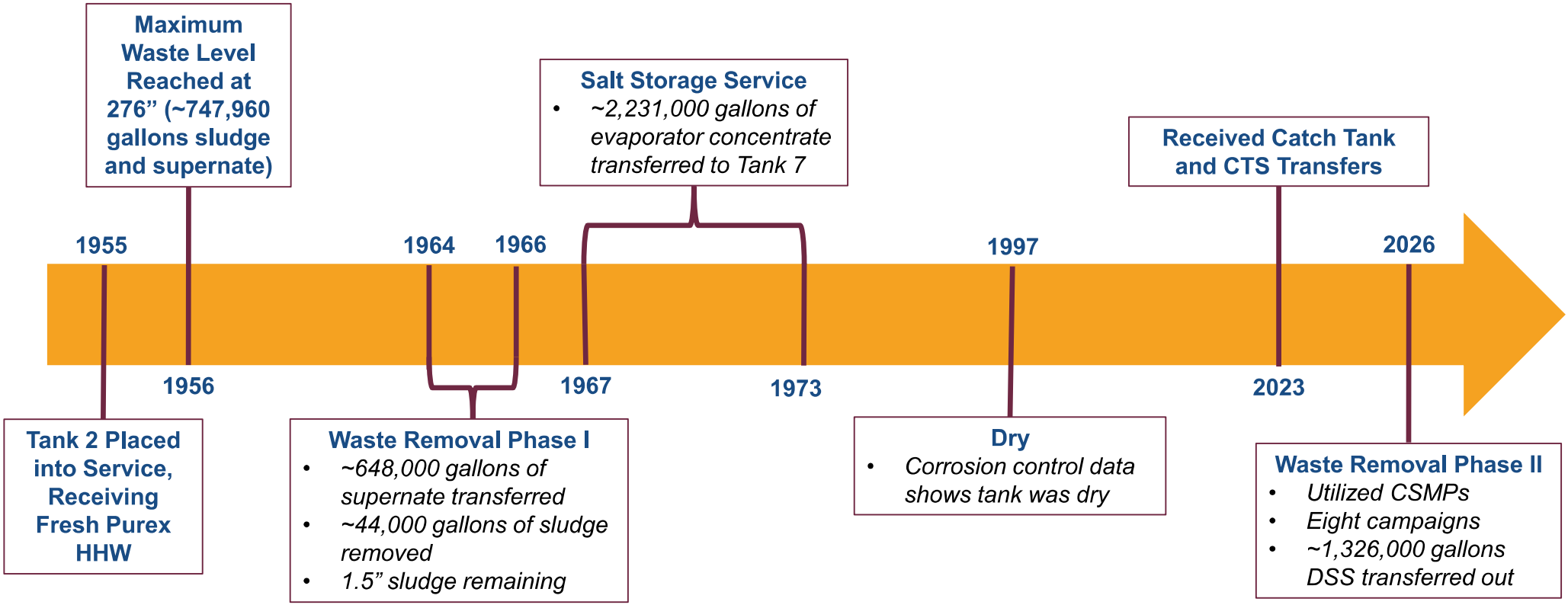
Typical Type I Tank



Nominal working capacity: 750,000 gallons
For a Type I Tank, 1" of waste equals 2,710 gallons

[SRR-CWDA-2017-00015]

Tank 2 Historical Timeline



HHW – High Heat Waste
CSMP – Commercial Submersible Mixing Pump
CTS – Concentrated Transfer System

Waste Removal Summary

- **Waste removal from Tank 2 has occurred in two phases, beginning in the 1960s when most of the sludge was removed prior to Tank 2 becoming a salt tank**
- **Waste Removal Phase I:**
  - *Supernate and solids removed to prepare Tank 2 to be an evaporator concentrate receipt tank*
  - *In 1964 and 1965, ~648,000 gallons of supernate were decanted and transferred to Tank 7 prior to sludge removal*
  - *In 1966, high pressure water jets were used to slurry the remaining sludge*
    - About 90% of the sludge was slurried
    - 237,000 gallons of water used
    - Approximately 44,000 gallons of sludge were removed
  - *At the conclusion of Waste Removal Phase I, Tank 2 was estimated to have approximately 1.5" of sludge remaining (~4,000 gallons)*

[DPSPU 83-11-5, DPST-70-512]

Waste Removal Summary

- **Waste Removal Phase II:**
  - *At the beginning of phase II, Tank 2 contained 7.9 inches of free supernate, 199.1 inches of saltcake, and a possible 2.63 inches of sludge heel (1.5 inches of settled sludge and a calculated 1.13 inches of insoluble aluminum solids)*
  - *Three Commercial Submersible Mixing Pumps (CSMPs) were installed in Risers 1, 4, and 6*
  - *One Submersible Transfer Pump (STP) was installed in Riser 3*



[U-ESR-F-00141]

Waste Removal Summary

Waste Removal Phase II								
Campaign	Date	CSMP Run Time (Hours)	CSMP Mode	Water Added (Kgals)	DSS Transferred (Kgals)	Riser 1 CSMP Elevation (inches)	Riser 4 CSMP Elevation (inches)	Riser 6 CSMP Elevation (inches)
1	2/2026 – 3/2026	R1, R6 – 96	Oscillate	63[1]	78	197.25	-	196.25
2	3/2026	R1, R6 – 44	Oscillate	83[1]	104	187.25	-	186.25
3	3/2026 – 4/2026	R1, R6 – 69 R4 – 45	Oscillate	91	127	177.25	175.125	176.25
4	4/2026	76	Oscillate	58	73	147.25	145.125	146.25
5	4/2026 – 5/2026	73	R1, R4 – Oscillate R6 – Index	104	151	119.25	117.125	126.25
6	5/2026	84.0	R1, R4 – Oscillate R6 – Index	133	268	67.25	65.125	86.25
7	5/2026 – 6/2026	106	R1, R4 – Oscillate R6 – Index	147	163	67.25	65.125/25.125	86.25/66.25
8	6/2026 – 7/2026	360	Index/Oscillate	235[2]	362	37.25/13.25	15.125	12.25
Total	-	-	-	914	1,326	-	-	-

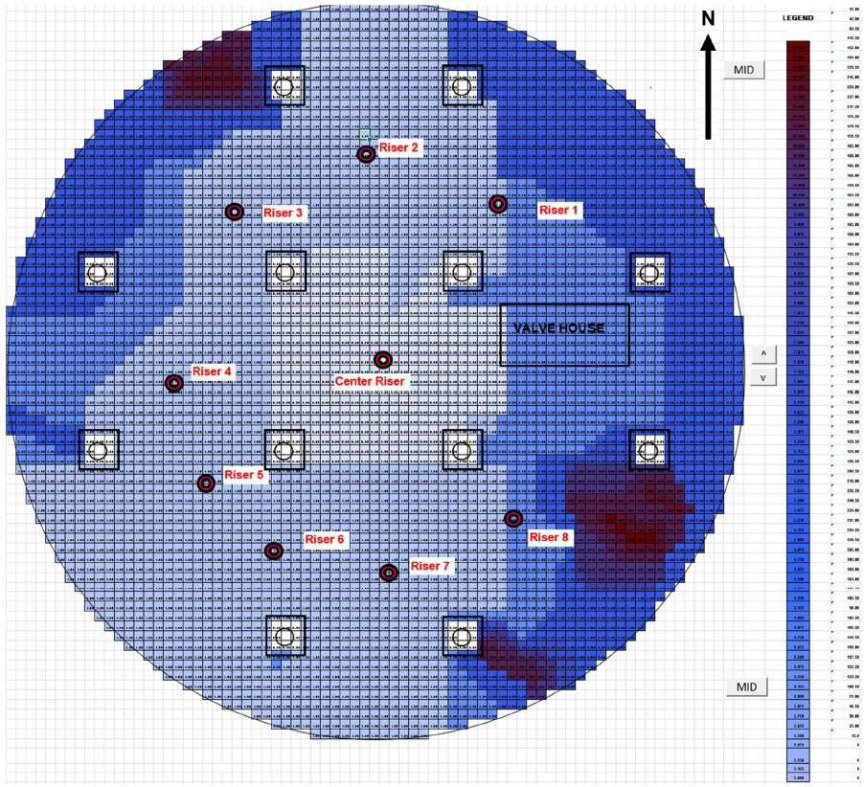
[1] Batch water additions.
[2] 235 Kgals of total liquid added. 225 Kgals water, 10 Kgals caustic

[U-ESR-F-00141]

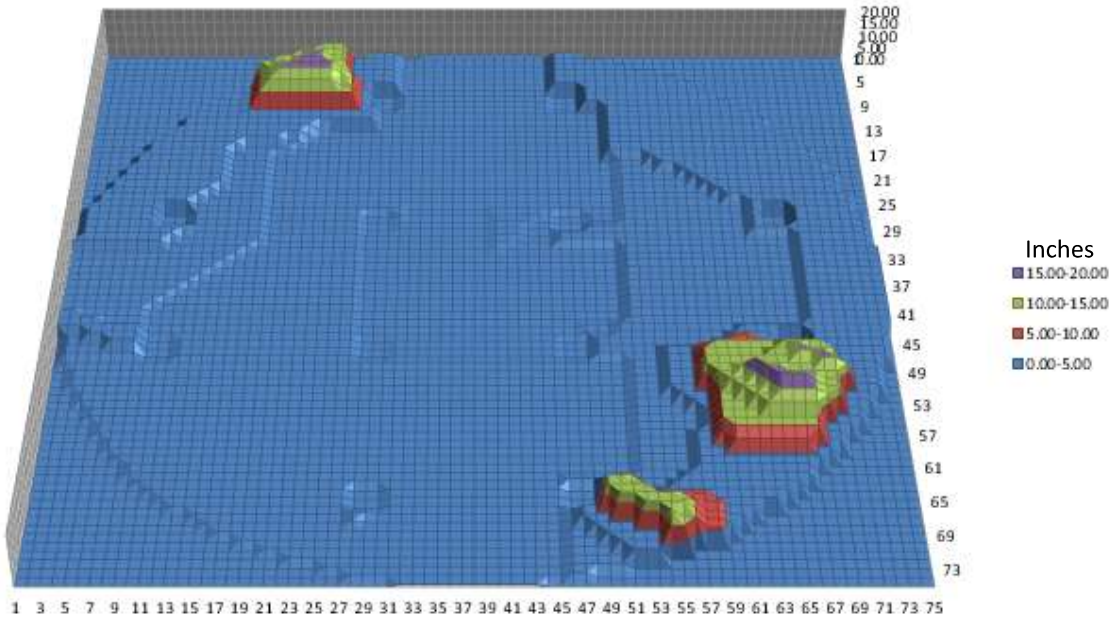
Current Status of Tank 2

Residual Solids Map Plan View

Liquid Level = 4.5”



Residual Solids 3-D Model
(height exaggerated to show detail)



Remaining Solids ~6,800 gallons

[U-ESR-F-00146]

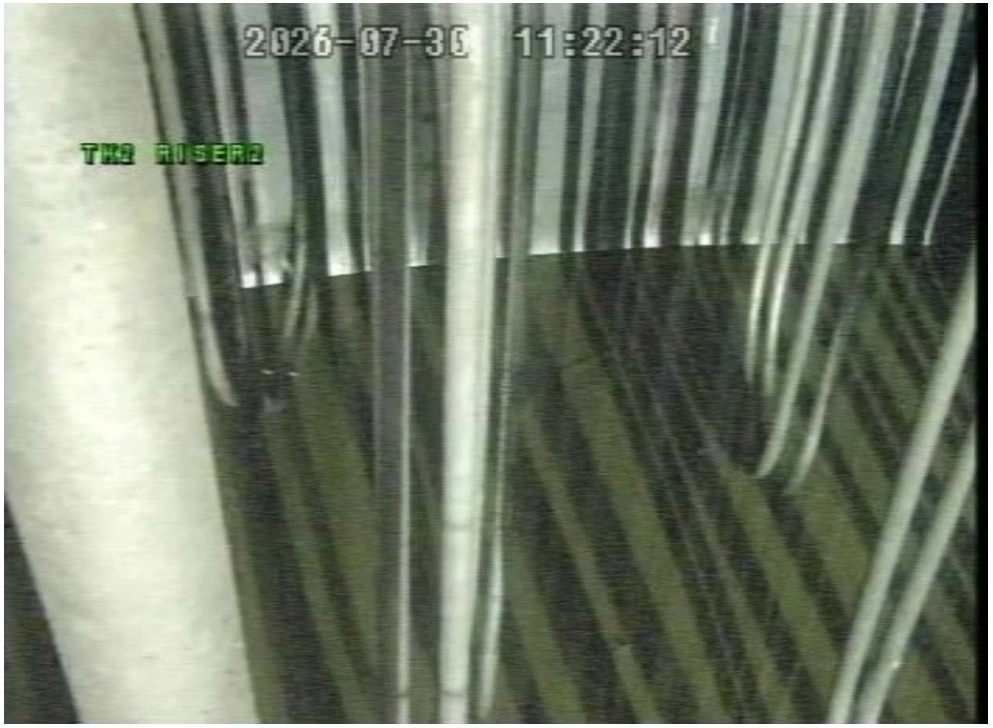
Tank 2 Prior to Waste Removal Phase II





Current Status of Tank 2

North



Northeast



Current Status of Tank 2

East



Southeast



Current Status of Tank 2

South



Southwest



Current Status of Tank 2

West



Northwest

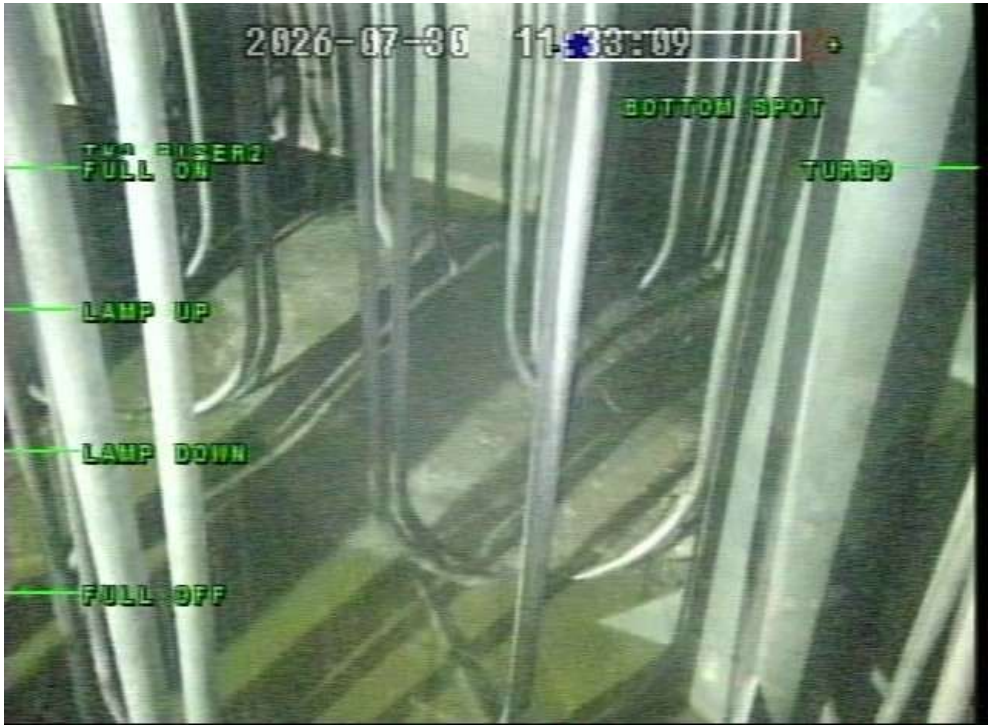


Current Status of Tank 2

Center



Northwest Mound



Current Status of Tank 2

Southeast Mounds



Southeast Mounds



Tank 2 Annulus Condition

- **Through November 2025**
  - *No leak sites have been documented and no waste is visible on the annulus floor*
  - *Four annulus risers, North, South, East, and West, are available for inspection and provide a 25% inspection capability*

[SRMC-STI-2026-00165]

Tank 2 Annulus Condition

South Looking West



South Looking East



West Looking North



West Looking South



Tank 2 Annulus Condition

East Looking South



East Looking North



North Looking East



North Looking West



Overall Cleaning Results

Maximum Waste Volume (gal)	747,960
Maximum Sludge Volume (gal)	48,780
Total Solids Remaining (gal)	~6,800[1]
Total Waste Remaining (gal)	~6,800[2]

Total Percent Waste Removed ~99%

[1] Based on a preliminary estimate of the solids remaining in the primary. Final volume determination will be included in the Closure Module.
[2] Based on a preliminary estimate of the primary plus annulus. Final volume determination will be included in the Closure Module.

[DPSPU-83-11-5, DPST-70-514, U-ESR-F-00146]

Additional Removal Options

- **Additional mixing campaigns**
  - *Additional mixing campaigns with current configuration in Tank 2 anticipated to have limited impact on additional waste removal*
    - Specific gravity and mixing pump amperage levelled off in final campaign, indicating all salt dissolved
  - *Each new mixing campaign requires a minimum of approximately 200-250k gallons of water be added to Tank 2 to allow for sustained mixing pump operation while transferring out slurry, creating additional new waste*
    - Additional new waste must be handled within the Liquid Waste System which is already challenged by available tank space to support Salt Batch compilation/qualification and Sludge Batch compilation/qualification necessary to feed Salt Waste Processing Facility (SWPF) and the Defense Waste Processing Facility (DWPF), respectively
    - Additional new waste must be run through an evaporator or must be processed through SWPF then subsequently DWPF or the Saltstone Production Facility (SPF), resulting in additional costs and impacts (i.e., extension) to the Liquid Waste System life-cycle
  - *Each new mixing or washing campaign would divert resources (i.e., funding and personnel) from other Liquid Waste System risk reduction activities*
    - E.g., impact ongoing waste removal activities in other tanks resulting in delays to waste removal (i.e., risk reduction) within those tanks
    - Waste removal from Tanks 1 and 2 must go through Tank 7. Additional campaign(s) from Tank 2 would fill Tank 7 leading to delays in waste removal from Tank 1 until space can be reclaimed in Tank 7
  - *Installation of a fourth CSMP to support additional mixing campaign(s)*
    - Approximately $2.5M – $3.5M for design, D&R and installation
  - *Level of additional waste removal uncertain, but even removing the majority of the remaining material, if possible, would have a minimal impact on final performance objective concentrations and doses*

Additional Removal Options

- **Chemical Cleaning**
  - *Any chemical cleaning campaign would require approximately 200-250k gallons of water/chemicals be added to Tank 2 to allow for mixing pump operation followed by sustained mixing pump operation while transferring out slurry, creating additional new waste*
    - Additional new waste must be handled within the Liquid Waste System which is already challenged by available tank space to support Salt Batch compilation/qualification and Sludge Batch compilation/qualification necessary to feed SWPF and DWPF, respectively
    - Additional new waste must be processed through SWPF then subsequently DWPF or SPF, resulting in additional costs and impacts (i.e., extension) to the Liquid Waste System life-cycle
  - *Each chemical cleaning campaign would divert resources (i.e., funding and personnel) from other Liquid Waste System risk reduction activities*
    - E.g., impact ongoing waste removal activities in other tanks resulting in delays to waste removal (i.e., risk reduction) within those tanks
    - Waste removal from Tanks 1 and 2 must go through Tank 7. Additional campaign(s) from Tank 2 would fill Tank 7 leading to delays in waste removal from Tank 1 until space can be reclaimed in Tank 7
  - *Level of additional waste removal uncertain, but even removing the majority of the remaining material, if possible, would have a minimal impact on final performance objective concentrations and doses*
    - Full Low-Temperature Aluminum Dissolution (LTAD) campaign anticipated to have a minimal impact due to Aluminum content in Tank 2 sludge
    - Bulk Oxalic Acid Cleaning would also have the adverse impact of introduction of additional oxalates into the system

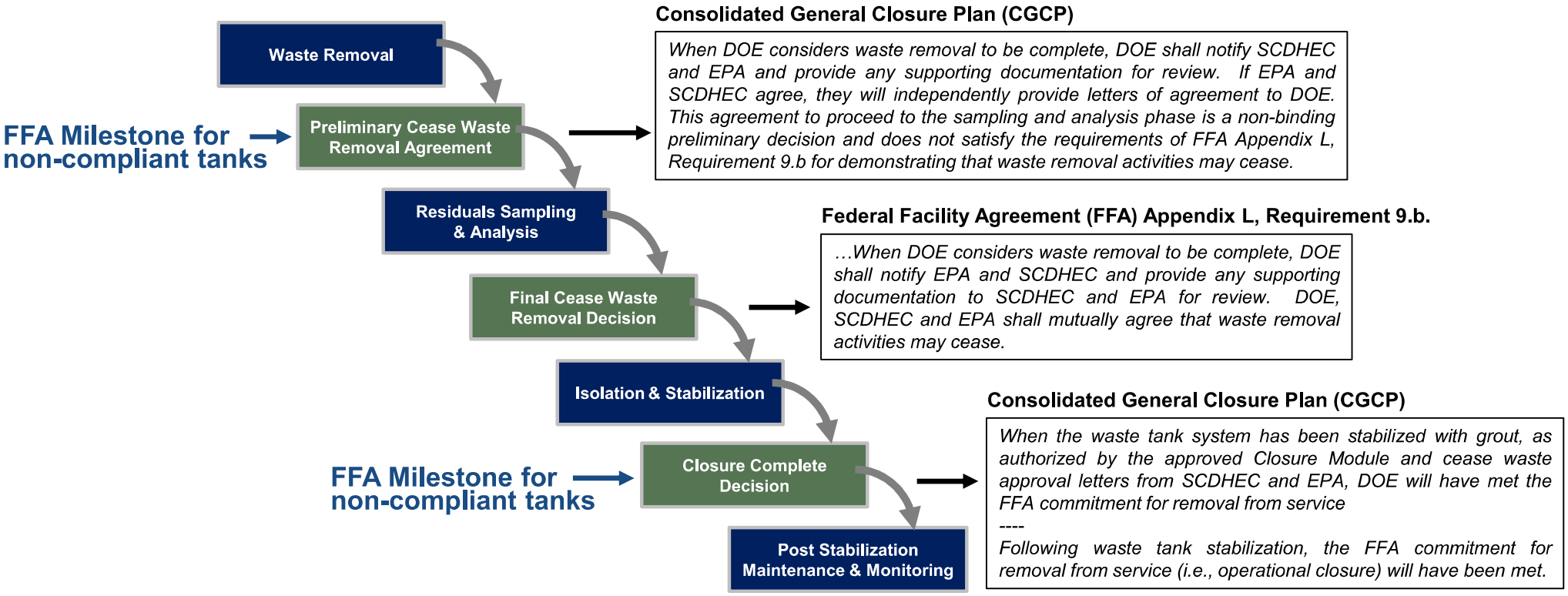
Additional Removal Options

- **Vacuum Technology**
  - *Proven Mantis technology that was utilized in Tanks 18 and 19 cannot be deployed due to in-tank obstructions*
  - *Alternate technology utilizing a smaller robotic platform with vacuum capability would require considerable development*
    - Very limited applicability at the time due to mobility around and over in-tank obstacles and associated tether management
    - Any water added to support removal, if required, would result in new waste and have same impact as previously described for additional mixing campaigns and chemical cleaning
    - Development/deployment of a new vacuum technology would divert resources (i.e., funding and personnel) from other Liquid Waste System risk reduction activities
  - *Level of additional waste removal uncertain, but even removing the majority of the remaining material, if possible, would have a minimal impact on final performance objective concentrations and doses*

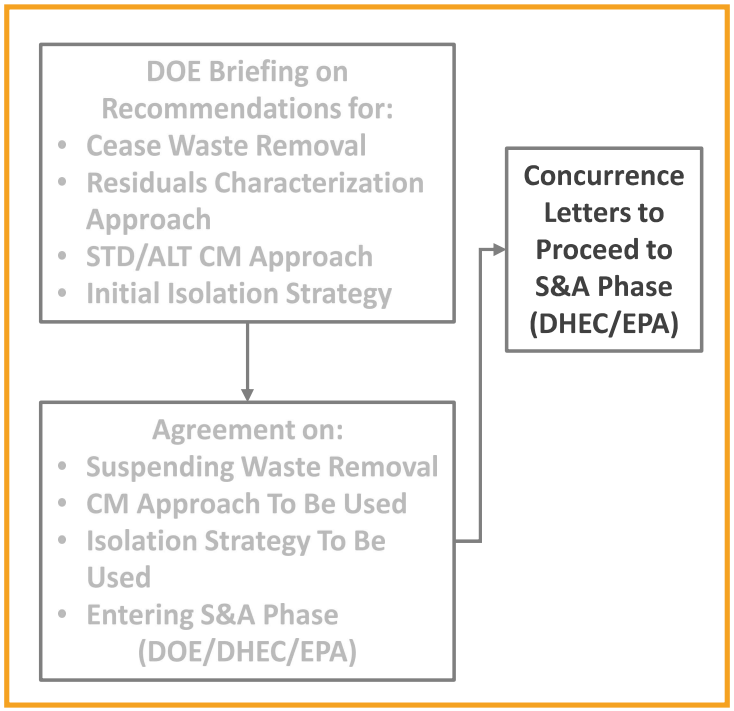
Additional Removal Options

- **Annulus Waste Removal**
  - *Based on results from annulus inspections, Tank 2 has no known leak sites into the annulus and no known accumulated waste on the annulus floor. Water additions/removal campaigns would have no impact on overall doses associated with Tank 2 while adding new waste into the Liquid Waste System.*

Tank Closure Process



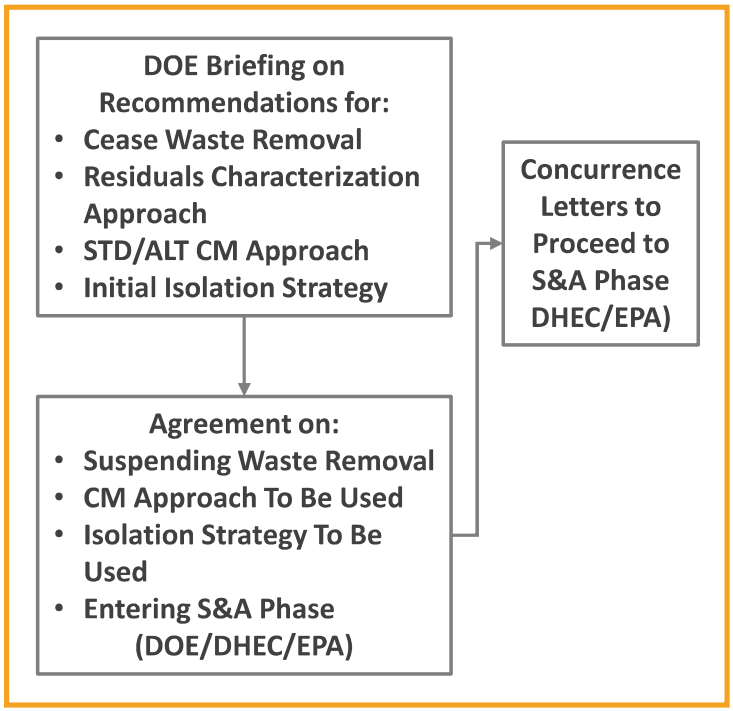
Requested Action



[SRR-CWDA-2017-00015]

The three agencies agree that, based upon the described qualitative assessment, there is reasonable assurance that it is appropriate to suspend waste removal activities and enter the Sampling and Analysis phase of the operational closure process for Tank 2.

Agreements Being Requested



[SRR-CWDA-2017-00015]

1. Suspend waste removal activities in Tank 2 and enter the Sampling and Analysis phase
2. Perform sampling and analysis of residuals per the LWTRSAPP
3. Develop Closure Module using the *Standard Closure Module a*pproach
4. The Closure Module will include appropriate isolation and stabilization provisions using the *Partial Isolation* approach

Next Steps

- **DOE will forward a letter to SCDES and EPA formally requesting concurrence to proceed to the Sampling and Analysis phase in Tank 2**
  - *This presentation will be attached as a primary reference*
  - *The requested action is a non-binding preliminary decision based on the qualitative information available at this time and presented today*
- **DOE and the Liquid Waste Contractor will proceed in developing the regulatory documentation necessary to operationally close Tank 2**
  - *DOE will coordinate with SCDES and EPA to establish a schedule for the development, review and approval of the Closure Module consistent with the approach described in the CGCP*

Common Goals & Values*

Values

1. Maintain transparency with open communication between regulators, DOE, and the contractor on program progress, and significant emerging issues.
2. Ensure DOE's strategy and plans are subject to stakeholder engagement and input, including SCDHEC permitting processes, and CERCLA, as appropriate.
3. Maximize the amount of curies (especially long-lived radionuclides) vitrified and ready for ultimate disposal out of state.
4. Limit disposal of curies onsite at SRS so that residual radioactivity is as low as reasonably achievable.

Goals

1. Reduce risk to the environment by removing waste and closing tanks with a goal of completion of the liquid waste program by 2037.
2. Reduce operational and environmental risk by aggressively removing curies from the waste tanks.
3. Reduce operational and environmental risk by optimizing operations to minimize liquid waste program total life cycle.
4. Complete waste removal and subsequent grouting of all waste tanks and ancillary structures with a risk-based priority order: first to tanks in the water table, followed by F Tank Farm tanks, followed by remainder of waste tanks, followed by ancillary structures, recognizing the potential for future emergent conditions or opportunities.

**From Federal Facility Agreement (FFA) 2022 High Level Waste Tank Milestones Agreement* [WSRC-OS-94-42]

Summary for Closed/PCWR Complete Tanks

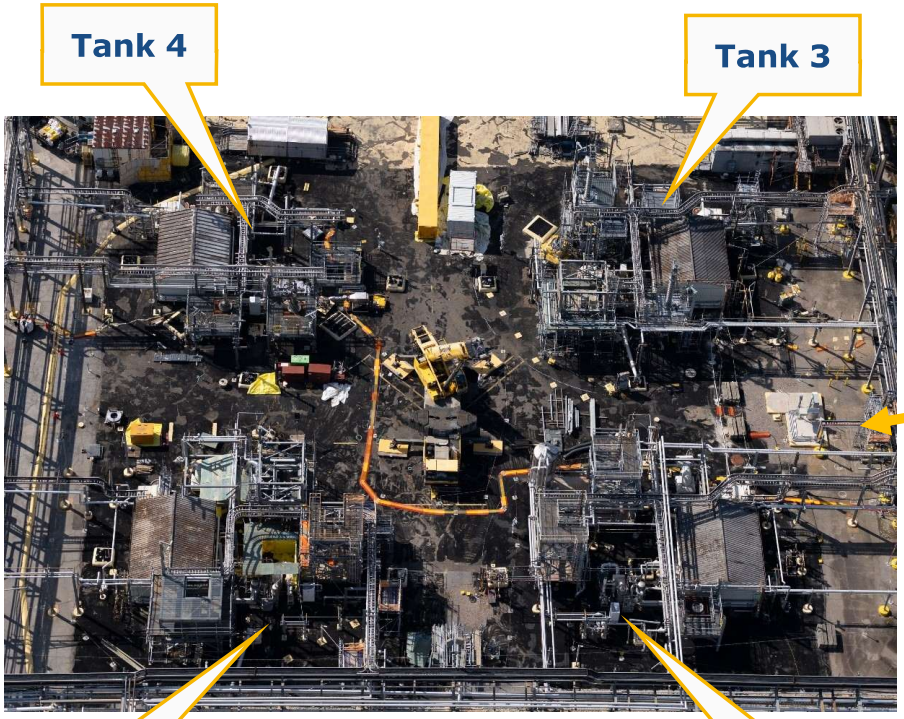
Waste Tank	PCWR Date	Operational Closure Date	Max. Dose within 10,000 years[1] (mrem/yr)	Primary Tank Residual Solids Volume[2] (%)	Primary Tank Residual Solids Volume (Gallons)	Annulus Residual Volume (Gallons)	Annulus Cleaning
3[3]	09/2025	-	<3	~1	~8,000	Negligible	No - Negligible
4[3]	12/2024	-	<5	<1	<6,000	Negligible	No - negligible
5	11/2010	12/2013	3	0.26	1,900	<15	No – negligible
6	11/2010	12/2013	3	0.41	3,000	<50	Yes ~ 100 gal
8[3]	6/2025	-	<3	<1	<7,100	Negligible	No – negligible
9[3]	10/2024	-	<3	<1	<7,500	Negligible	Yes
10[3]	5/2024	-	<2	<0.40	<3,000	<400	Yes
11[3]	5/2025	-	<4	<1	<8,000	Negligible	No - negligible
12	1/2014	4/2016	6	0.20	1,500	30	No – negligible
14[3]	3/2026	-	<8	<1	<3,800	~3,700	Yes
15[3]	5/2025	-	<6	<1	<6,000	1,800	Yes
16	4/2013	9/2015	2	0.21	356	1,910	No – not practical
17	N/A	12/1997	3	0.18	2,400	N/A	N/A
18	10/2009	9/2012	3	0.30	3,900	N/A	N/A
19	10/2009	9/2012	3	0.15	2,000	N/A	N/A
20	N/A	7/1997	3	0.08	1,000	N/A	N/A

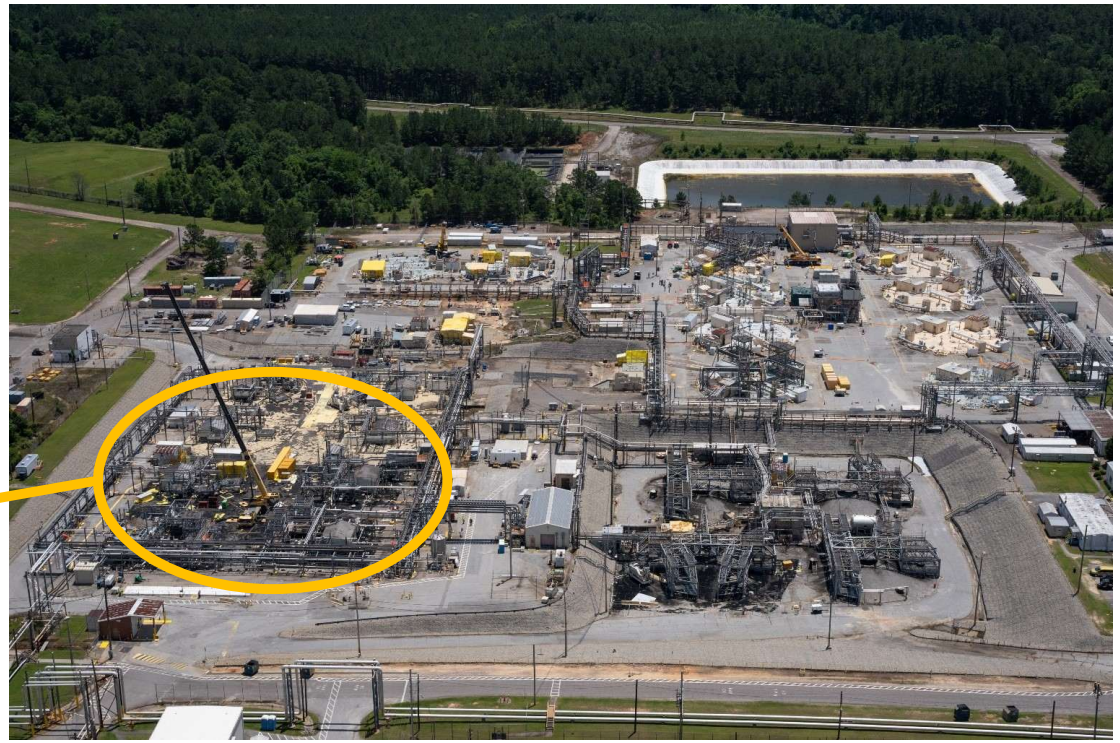
[1] Dose for FTF tanks 5, 6 and 17-20 represents maximum all sources dose utilizing actual inventories. Dose for all other tanks represents maximum contribution from individual tanks. [SRR-CWDA-2012-00106, SRR-CWDA-2015-00073, SRR-CWDA-2014-00106]
[2] Based on historic maximum waste volume for each tank. [DOE/SRS-WD-2012-001, DOE/SRS-WD-2014-001]
[3] Tanks 3, 4, 8, 9, 10, 11, 14, and 15 Values based on preliminary information

Tank 2

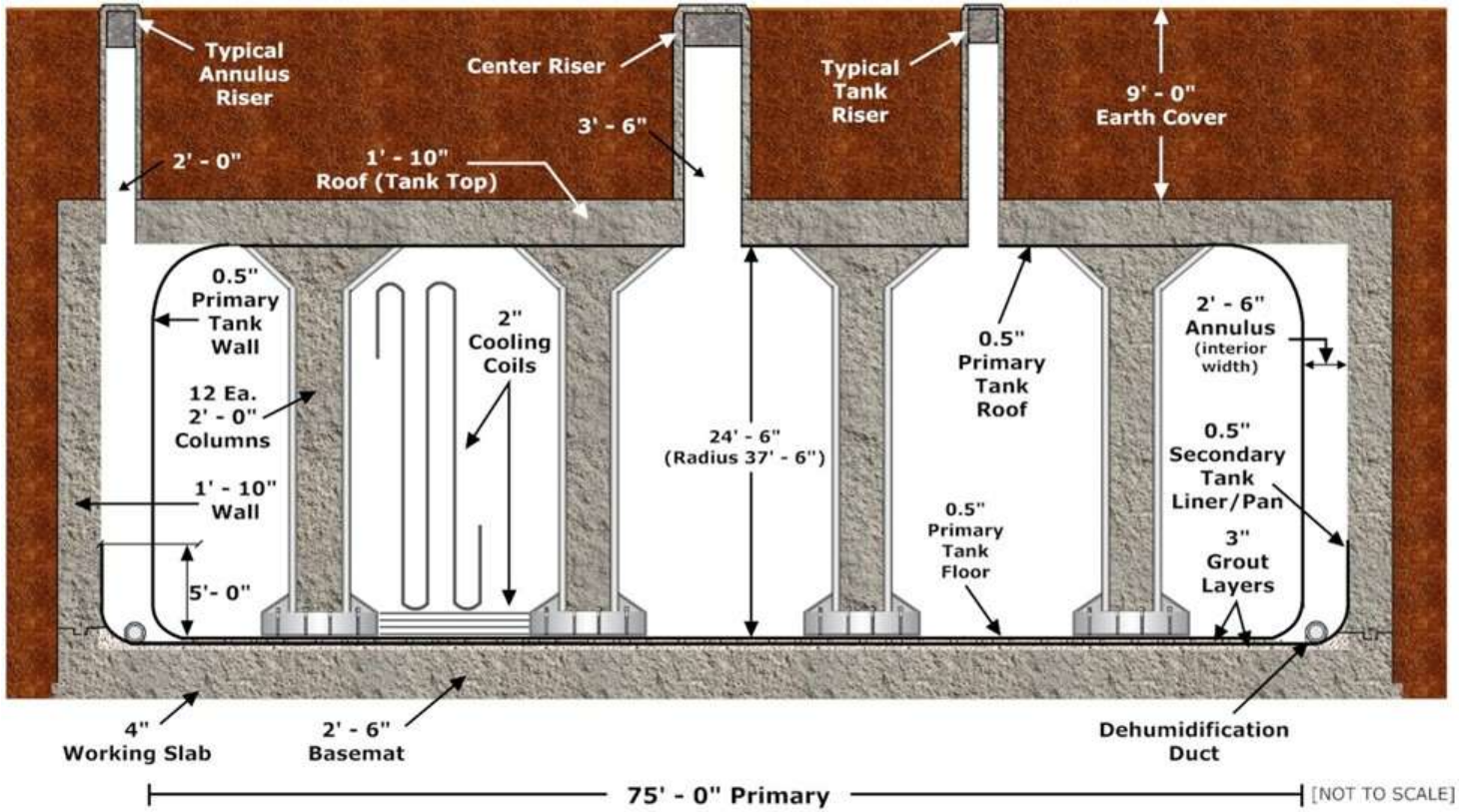
Background Information

Tank 2 Within F-Tank Farm





Typical Type I Tank



Nominal working capacity: 750,000 gallons
For a Type I Tank, 1" of waste equals 2,710 gallons

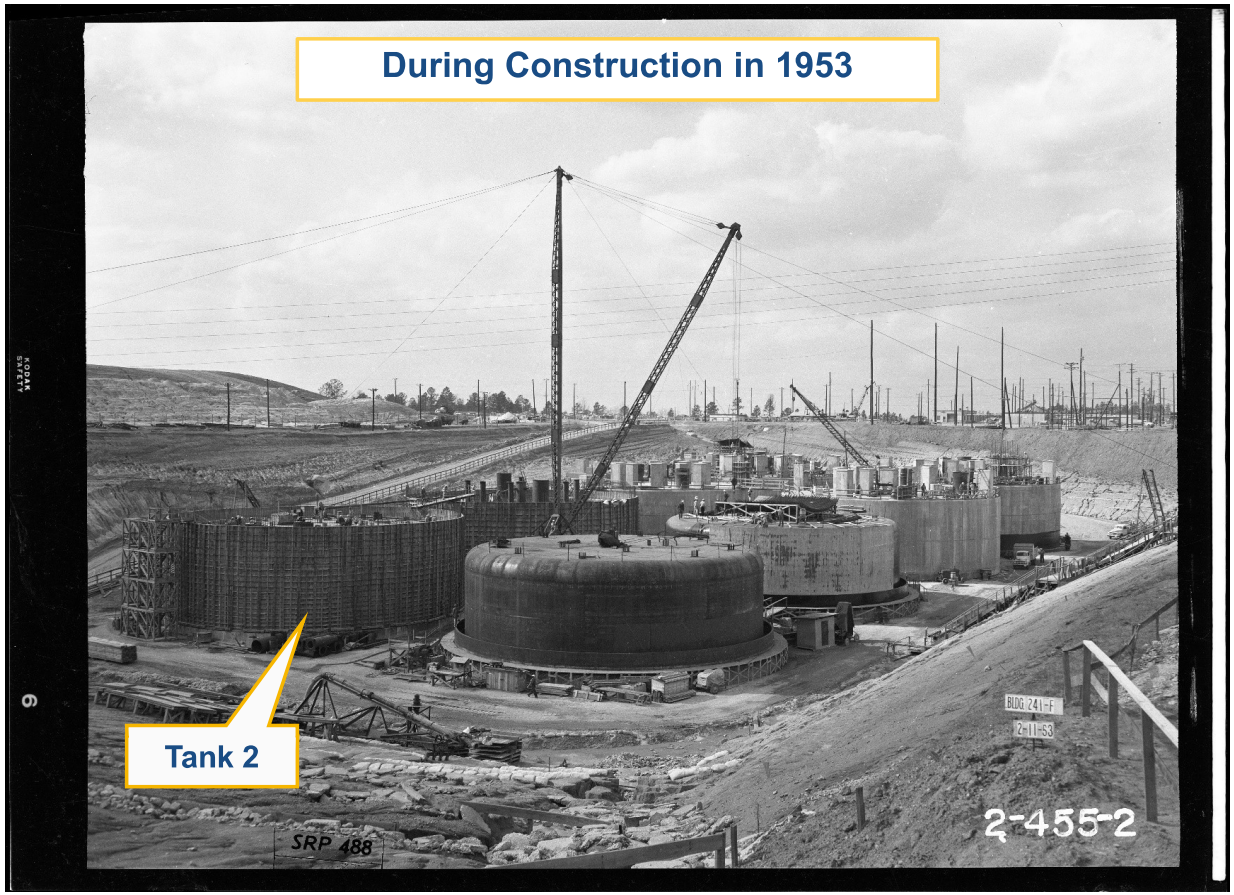
[SRR-CWDA-2017-00015]

Typical Type I Tank

- Carbon steel primary tank and secondary liner (annular pan) all contained in a concrete vault
- Nominal tank capacity: 750,000 gallons
- For a Type I Tank, 1” of waste equals 2,710 gallons
- Primary tank diameter: 75 feet
- Primary tank height: 24.5 feet
- Annular pan diameter: 80 feet
  - *2.5-foot annular space surrounding primary*
- Annular pan height: 5 feet
- 12 interior support column
  - *2-foot diameter*
- 34 vertical cooling coils runs suspended from the ceiling
- 2 horizontal cooling coil runs supported above the floor

[SRR-CWDA-2017-00015]

FTF Type I Tanks

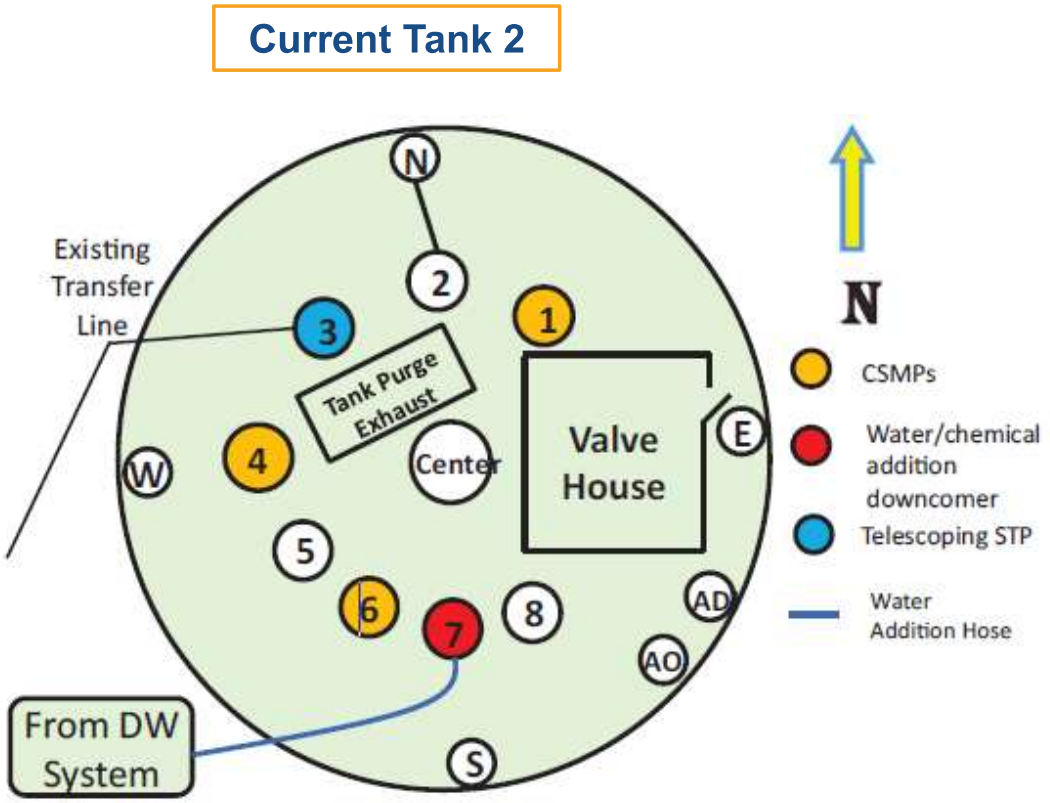


Typical Type I Tank Challenges

- **Challenges include:**
  - *Limited access ports (risers)*
  - *Presence of roof support columns*
  - *Approximately 22,800 linear feet of 2-inch diameter vertical and horizontal cooling coils*
  - *"Field-to-fit" horizontal cooling coil "fences"*
- **Tanks were not designed with waste removal in mind**

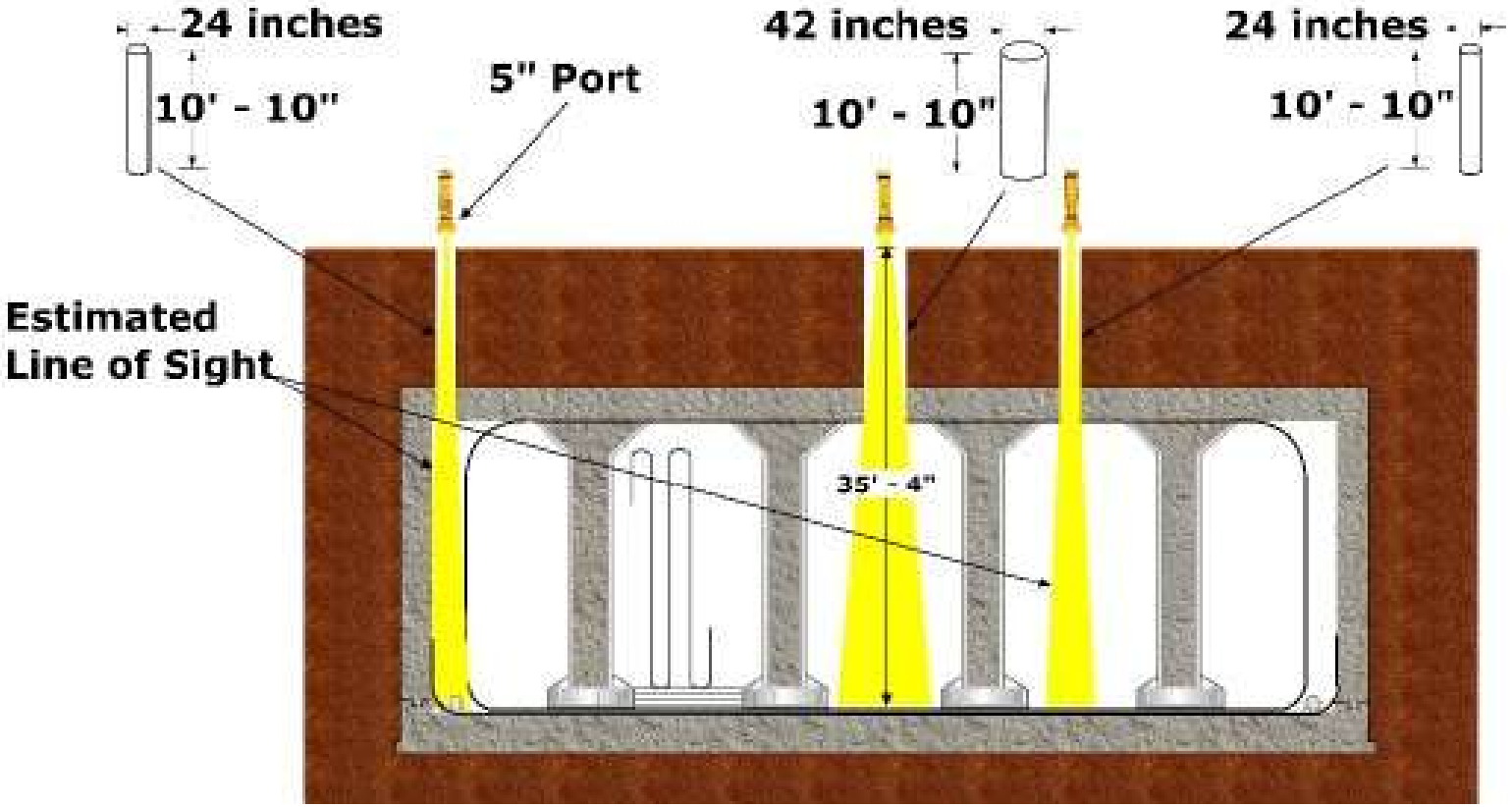
Type I Tank Riser Limitations

- **Primary access**
  - *Eight 24-inch risers*
  - *One 42-inch central riser*
- **Annulus access**
  - *Four 24-inch risers*
- **Limited riser entrances hinder:**
  - *Pump placement*
  - *Cleaning operations*
  - *Camera viewing*
  - *Sampling options*



[U-ESR-F-00141]

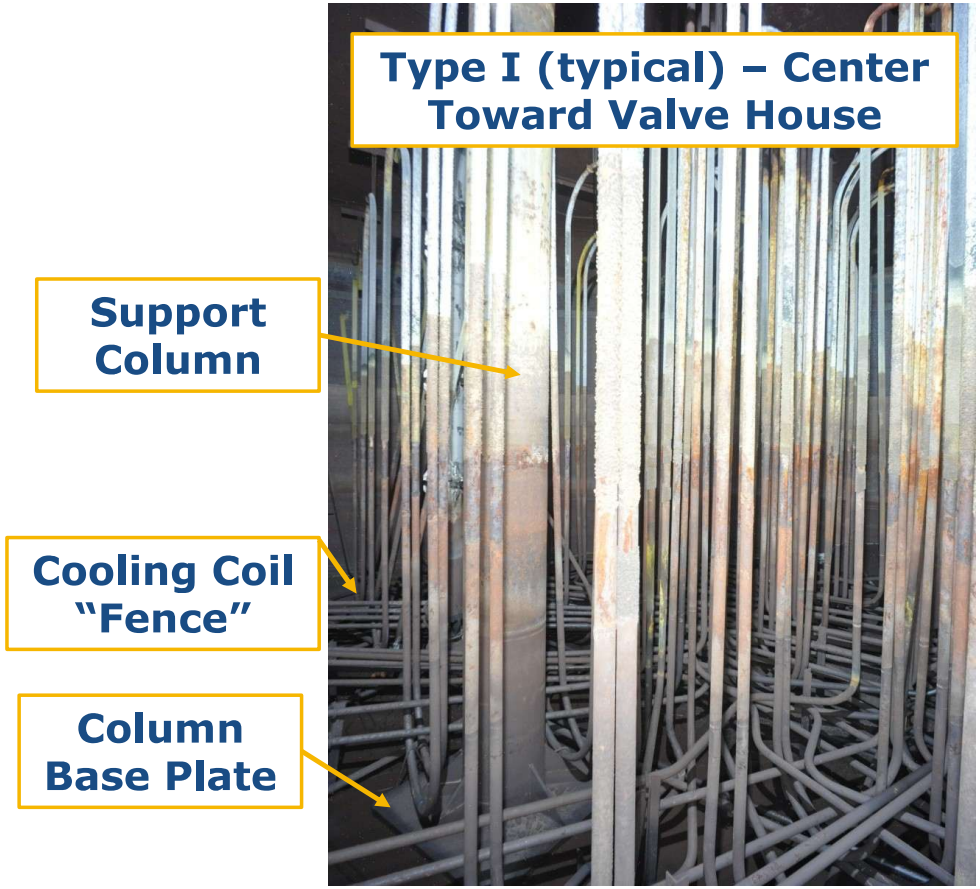
Type I Tank Riser Limitations



[NOT TO SCALE]
[SRR-CWDA-2017-00015]

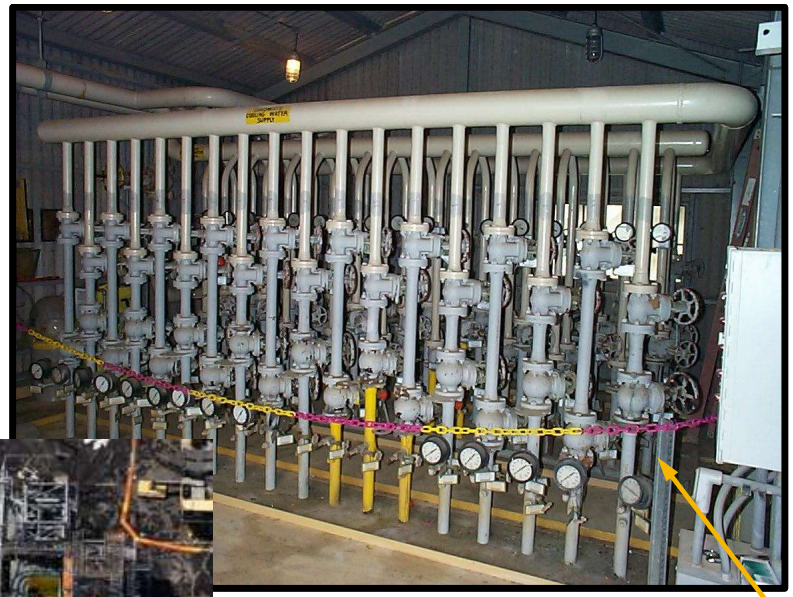
Type I Tank Columns and Cooling Coils

- **A total of 12 support columns in each Type I tank**
  - *Carbon steel filled with concrete*
  - *2-foot diameter*
  - *4.5-foot x 4.5-foot x 4.5-inch base plate*
- **Type I tanks contain approximately 22,800 linear feet of 2-inch diameter cooling coils**
- **Horizontal coils were installed "field-to-fit"**
- **Columns and cooling coils together impact installation and/or operation of waste removal related equipment**
  - *Effective cleaning radius of pumps*
  - *Full installation of pumps*
  - *Sampling device deployment*



Type I Tank Cooling Coil Valve House

Valve House Interior





Tank 2 Valve House

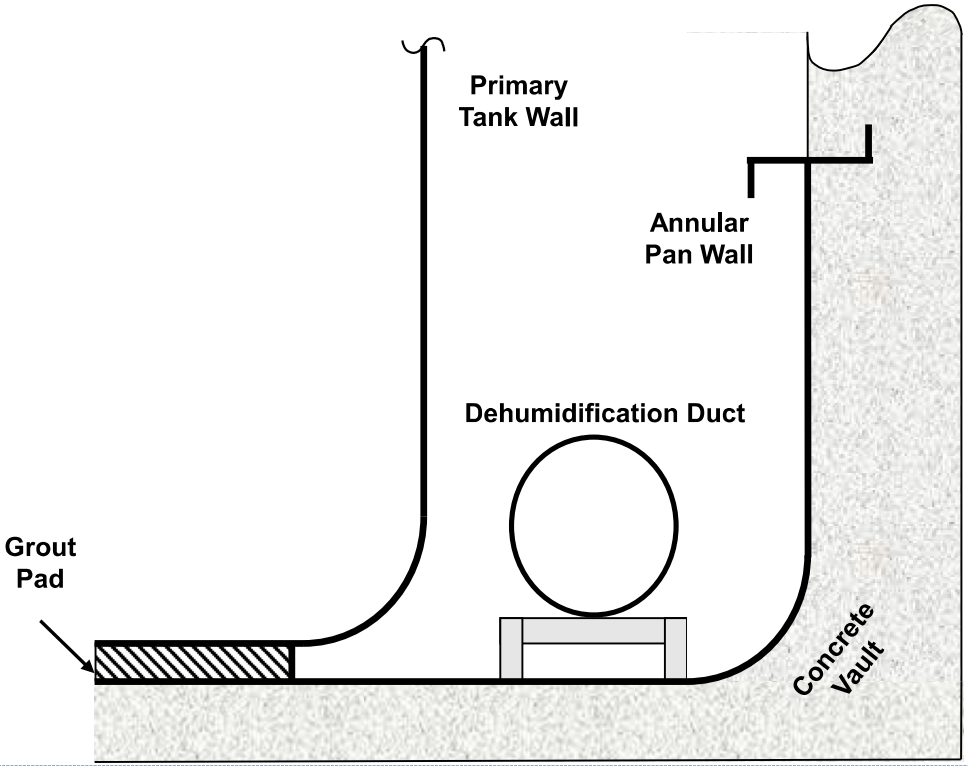
View From Inside Tank (Under the Valve House)

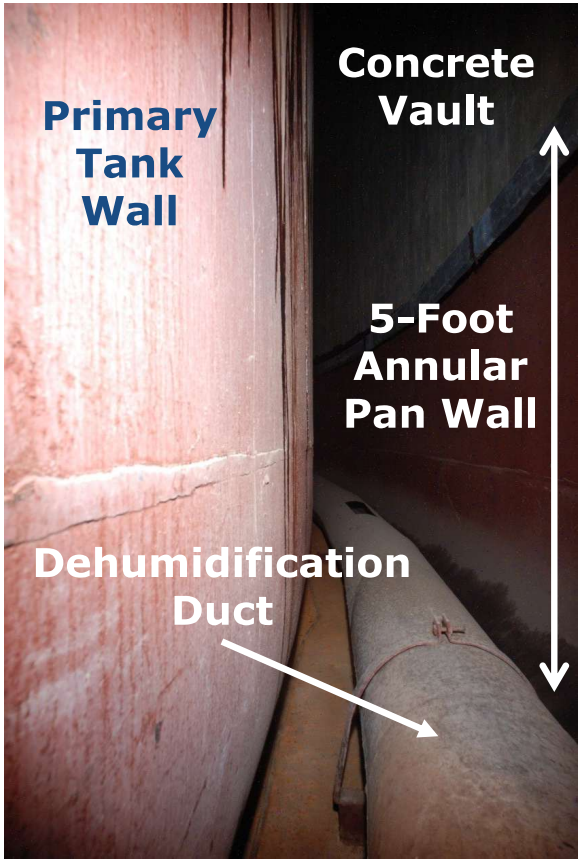


Cooling coil lines entering and exiting waste tank

Type I Tank Annular Region

5-foot high, 80-foot diameter annular pan provides secondary containment



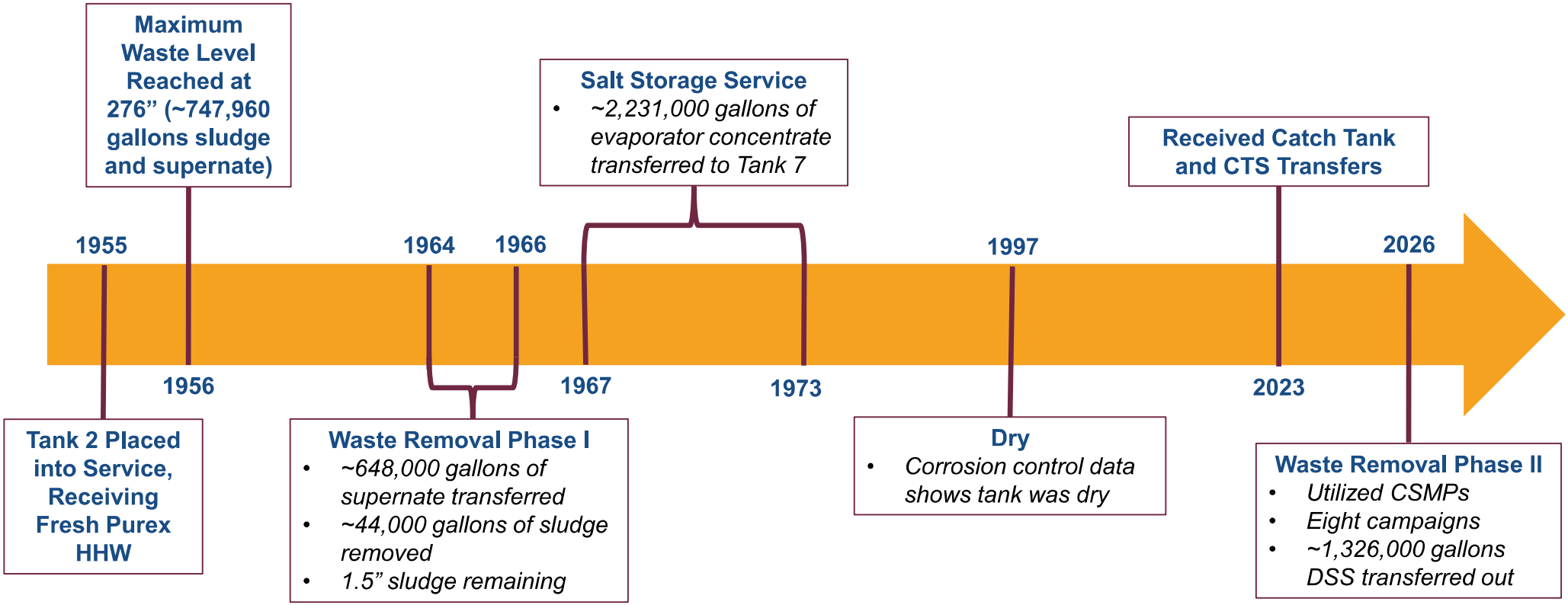


Tank 2 Operational History

- **Constructed between 1952-1953**
- **Beginning in July 1955, Tank 2 received fresh High-Heat Waste (HHW) from the Purex Process until 1956 when it was deemed full at 276”**
- **Supernate was decanted in 1964 and 1965 with 648,000 gallons going to Tank 7**
- **High pressure water jets were used to slurry the remaining sludge and transfer to Tank 7 in February of 1966**
  - *About 90% of the sludge was slurried*
  - *27,000 gallons of water added*
  - *44,000 gallons of sludge moved*
- **The tank was placed in salt storage service with receipt of the first evaporator concentrate in April 1967**
  - *~2,231,000 gallons of evaporator concentrate were transferred out of Tank 2 over multiple transfers*
  - *~1.5” of sludge left*
- **Maximum historical waste level in 1956**
  - *276”*

[DPSPU 83-11-5]

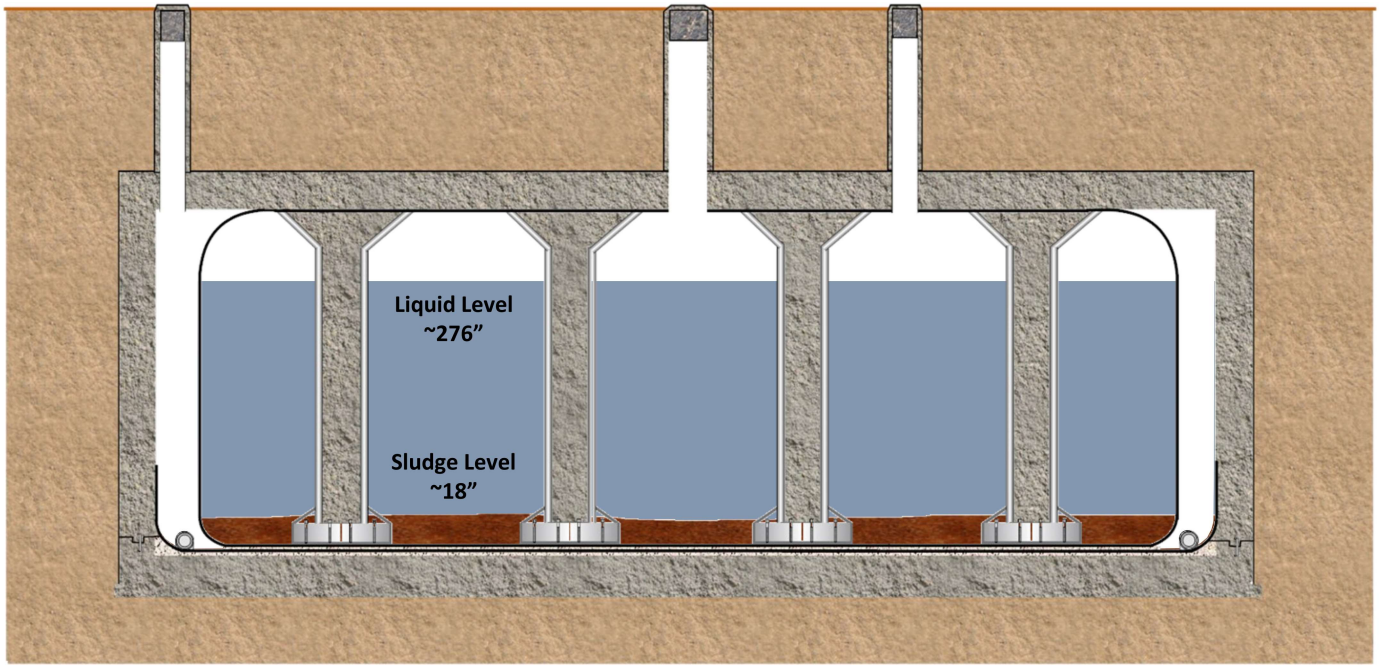
Tank 2 Historical Timeline



HHW – High Heat Waste
CSMP – Commercial Submersible Mixing Pump
CTS – Concentrated Transfer System

Waste Removal Phase I

Tank 2 Before the Start of Waste Removal Phase I (1966)



[DPSPU-83-11-5, DPST-70-512]

Waste Removal Phase I

- **Supernate and solids removed to prepare Tank 2 to be an evaporator concentrate receipt tank**
  - *In 1964 and 1965, ~648,000 gallons of supernate were transferred to Tank 7*
  - *High pressure water jets were then used to slurry the remaining sludge*
    - About 90% of the sludge was slurried
    - 237,000 gallons of water used
    - Approximately 44,000 gallons of sludge were removed
- **At the conclusion of Waste Removal Phase I, Tank 2 was estimated to have approximately 1.5” of sludge remaining (~4,000 gallons)**

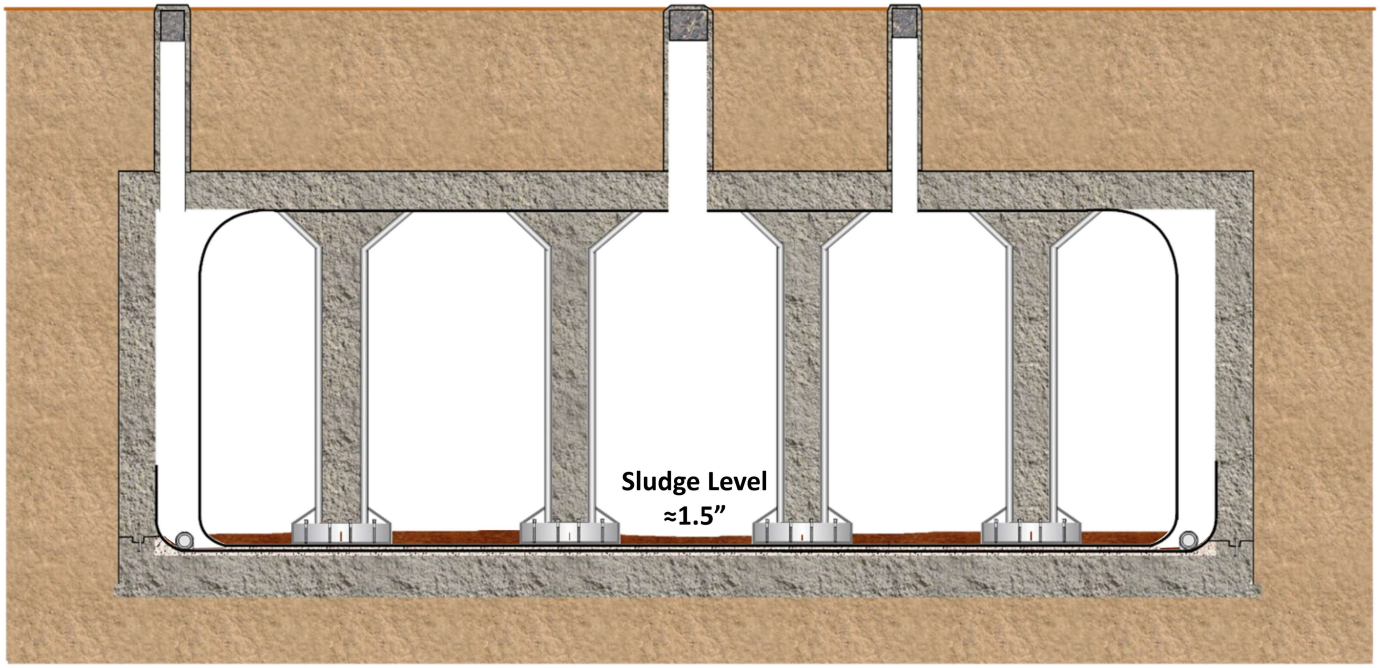
High Pressure Water Jet



[DPSP-8-11-5]

Waste Removal Phase I

Tank 2 After Waste Removal Phase I (1966)



[DPSPU-8-11-5]

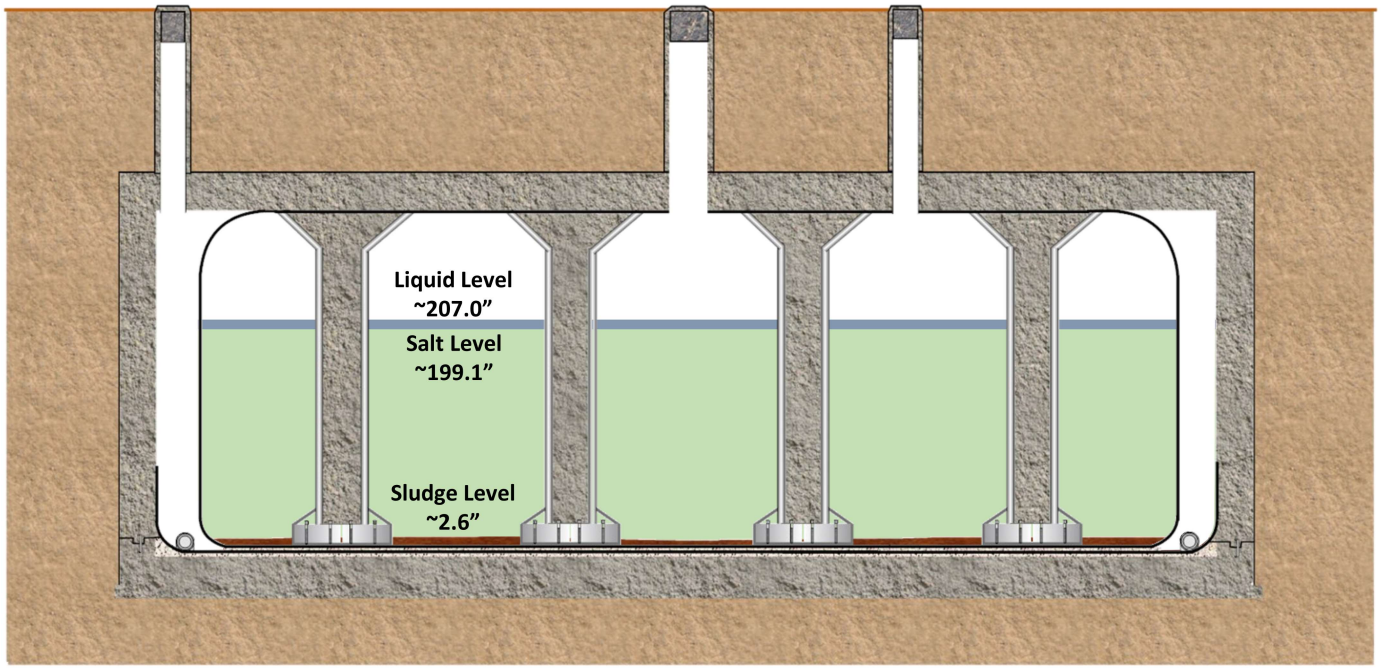
Post Waste Removal Phase I

- **Tank 2 was used as a receipt tank for evaporator concentrate from 1966 to 1973**
- **Over this time period, ~2,231,000 gallons of evaporator concentrate were transferred fromTank 2 to Tank 7 over multiple transfers**
- **Tank was left inactive until 2023, during which time the liquid level decreased due to cooling and evaporation**
  - *Corrosion control sample data showed that the tank was dry by 1997*

[DPSP-83-11-5]

Waste Removal Phase II

Tank 2 Prior to Waste Removal Phase II (February 2026)

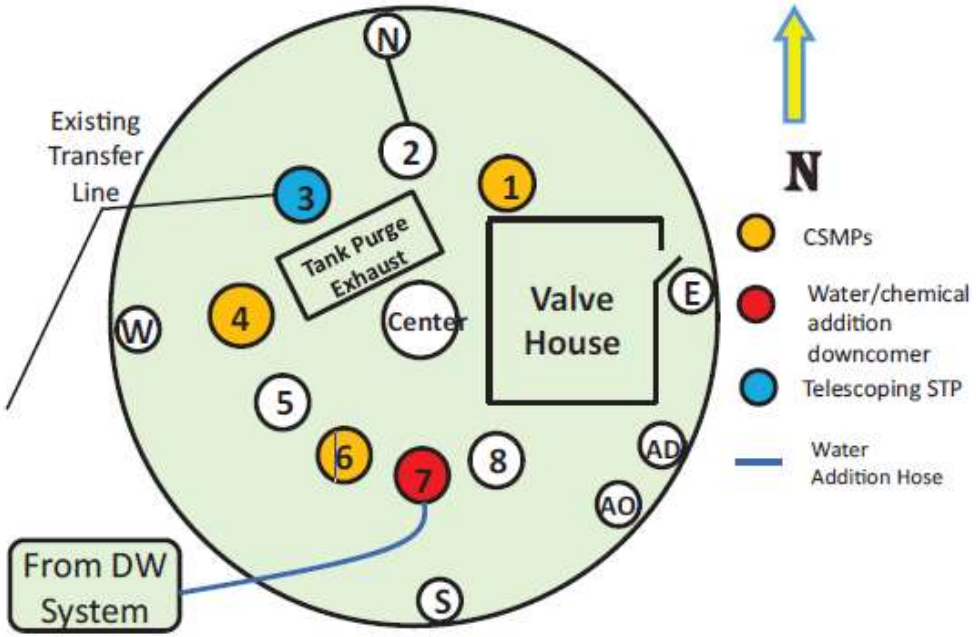


[U-ESR-F-00141]

Waste Removal Phase II

- **Starting conditions:**
  - *~21,000 gallons of free supernate (7.9”)*
  - *~540,000 gallons of salt (199.1”)*
  - *~7,000 gallons of sludge (2.6”)*
    - An estimated 1.1 inches of insoluble Aluminum solids may have accumulated in the tank (calculated, not measured)

Waste Removal Phase II Equipment Diagram



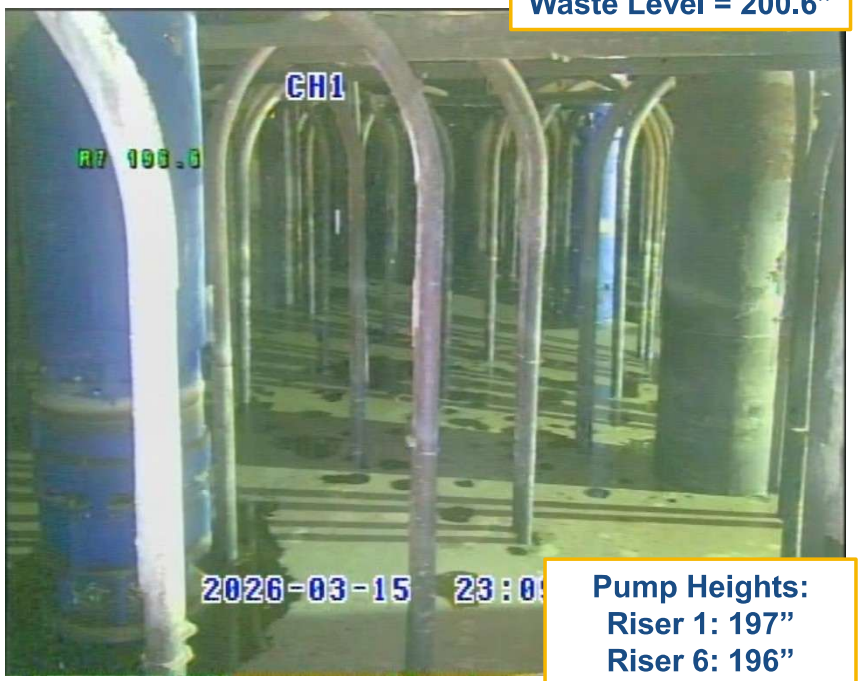
[U-ESR-F-00141]

Waste Removal Phase II – Campaign 1

- ~49,000 gallons water added
- Two CSMPs in Risers 1 and 6 operated at half speed for ~4 days
- Transfer of ~78,000 gallons DSS to Tank 7 completed on March 15, 2026
- DSS transferred had a specific gravity of 1.39
- BSL estimated to be reduced to 195”

Campaign 1

Waste Level = 200.6”



Pump Heights:
Riser 1: 197”
Riser 6: 196”
Riser (STP): 133”

[U-ESR-F-00141-0-ADD-1]

Waste Removal Phase II – Campaign 2

- ~83,000 gallons water added
- CSMPs were lowered before the campaign was initiated
- Two CSMPs in Risers 1 and 6 operated in oscillation mode at full speed for ~2 days
- Transfer of ~104,000 gallons DSS to Tank 7 completed on March 25, 2026
- DSS transferred had a specific gravity of 1.43
- BSL estimated to be reduced to 181”

Pump Heights:
Riser 1: 187”
Riser 6: 186”
Riser (STP): 133”

[U-ESR-F-00141-0-ADD-1]

Waste Removal Phase II – Campaign 3

- ~91,000 gallons water added
- CSMPs were lowered before the campaign was initiated
- Three CSMPs in Risers 1, 4, and 6 operated in oscillation mode at full speed for ~3 days.
- Transfer of ~127,000 gallons DSS to Tank 7 completed on March 31, 2026
- DSS had a specific gravity of 1.55
- BSL estimated to be reduced to 159.5”

Pump Heights:
Riser 1: 177”
Riser 4: 175”
Riser 6: 176”
Riser (STP): 133”

[U-ESR-F-00141-0-ADD-2]

Waste Removal Phase II – Campaign 4

- ~58,000 gallons water added
- CSMPs were lowered before the campaign was initiated
- Three CSMPs in Risers 1, 4, and 6 operated in oscillation mode at half speed for ~3 days.
  - *CSMPs were run again at half speed prior to and during the transfer to mitigate salt crust formation at the surface.*
- Transfer of ~73,000 gallons DSS to Tank 7 completed on April 7, 2026
- DSS had a specific gravity of 1.41
- BSL estimated to be reduced to 155”

Pump Heights:
Riser 1: 147”
Riser 4: 145”
Riser 6: 146”
Riser (STP): 133”

[U-ESR-F-00141-0-ADD-2]

Waste Removal Phase II – Campaign 5

- ~104,000 gallons water added
- CSMPs were lowered before the campaign was initiated
- Two CSMPs in Risers 1 and 4 operated in oscillation mode at full speed for ~3 days.
- One CSMP in Riser 6 operated in index mode at full speed for ~3 days.
- Transfer of ~151,000 gallons DSS to Tank 7 completed on May 1, 2026
- DSS had a specific gravity of 1.49
- BSL estimated to be reduced to 140”

Pump Heights:
Riser 1: 119”
Riser 4: 117”
Riser 6: 126”
Riser (STP): 109”

[U-ESR-F-00141-0-ADD-3]

Waste Removal Phase II – Campaign 6

- ~133,000 gallons water added
- CSMPs were lowered before the campaign was initiated
- Two CSMPs in Risers 1 and 4 operated in oscillation mode at full speed for ~4 days
- One CSMP in Riser 6 indexed to target mounding near Riser 7 for ~3 days, then operated in oscillation mode at full speed for ~1 day
- Transfer of ~267,000 gallons DSS to Tank 7 completed on May 20, 2026
- DSS had a specific gravity of 1.45
- BSL estimated to be reduced to 123.3”

Pump Heights:
Riser 1: 67”
Riser 4: 65”
Riser 6: 86”
Riser 5 (STP): 49”

[U-ESR-F-00141-0-ADD-4]

Waste Removal Phase II – Campaign 7

- ~228,000 gallons water added
- CSMPs were not initially lowered
- Riser 6 CSMP operated in oscillation mode at full speed for ~4 days
- After 48 hours, two CSMPs in Risers 1 and 4 were indexed towards Riser 8 at full speed for ~1 day then operated in oscillation mode at full speed for ~1 day
- Transfer of ~163,000 gallons DSS to Tank 7 completed on June 6, 2026
  - *STP failed during transfer with final liquid level of 59.8”*
- DSS had a specific gravity of 1.32, indicating further salt dissolution was not taking place
- BSL estimated to be reduced to 45”

Pump Heights:
Riser 1: 67”
Riser 4: 65/25”
Riser 6: 86/66”
Riser 5 (STP): 20”

[U-ESR-F-00141-0-ADD-5]

Waste Removal Phase II – Additional Steps

- **In Campaign 8, several additional steps were taken to ensure the maximum possible dissolution and waste removal was achieved**
  - *Tank 2 Temperature was raised to 70° C, allowing mixing operation up to 6° C*
  - *Dissolution water ratio was 1.86:1 based on a conservative estimate of remaining salt*
  - *A combination of oscillating CSMP operation and indexed operation (toward the valve house/ Riser 8 region of the tank) was used to target mounds and ensure even tank mixing*
  - *10k gallons of caustic was added to promote the dissolution of insoluble aluminum solids*

Waste Removal Phase II – Campaign 8a

- ~225,000 gallons water added
- 10,000 gallons caustic added
- CSMPs were lowered before the campaign was initiated
  - *Risers 1 and 4 CSMPs were unable to be lowered to final position due to obstructions*
- Riser 6 CSMP operated alone at full speed in oscillation mode for ~2 days
- After that, all three CSMPs in Risers 1, 4, and 6 operated at full speed in oscillation mode for ~4 days

Pump Heights:
Riser 1: 37”
Riser 4: 15”
Riser 6: 12”
Riser 5 (STP): 0”

[U-ESR-F-00141-0-ADD-6]

Waste Removal Phase II – Campaign 8b

- **Riser 1 CSMP was successfully lowered beyond the obstruction**
- **Three CSMPs in Risers 1, 4, and 6 operated in index mode at full speed aimed towards the valve house and East Riser for ~2 days**
  - *No solids were seen mounding under the valve house at this point, but historical data shows that mounds tend to collect under valve houses which are far away from CSMP zones of influence*
- **After this, the three CSMPs in Risers 1, 4, and 6 were operated at full speed in oscillation mode for ~2 days**
- **Transfer of ~362,000 gallons DSS to Tank 7 completed on July 30, 2026**
- **DSS had a specific gravity of 1.249, indicating further salt dissolution was not taking place**

Pump Heights:
Riser 1: 13”
Riser 4: 15”
Riser 6: 12”
Riser 5 (STP): 0”

[U-ESR-F-00141-0-ADD-6]

Waste Removal Phase II

- **There were several indications that the maximum possible dissolution had occurred prior to concluding the mixing campaign**
  - *Tank level decrease due to gas release/ salt dissolution effects had stopped*
  - *Amp trends on CSMPs had leveled off, indicating that the SpG was no longer increasing*
  - *Campaign 8A alone lasted 5 days - longer than the average 2-3 campaign required to achieve full saturation*
  - *At the time of the pause, a density measurement was taken at 1.249 SpG*
  - *Average SpG for previous campaigns was 1.43*
  - *It was expected that campaign 8 would produce less saturated solution based on the high ratio of liquid addition to estimated remaining salt*
  - *Undersaturation indicates that the solution would have supported further dissolution but was not able to dissolve more due either to:*
    - Insolubility of remaining waste
    - Distance of mound sites from direct action of CSMP discharges

Waste Removal Phase II

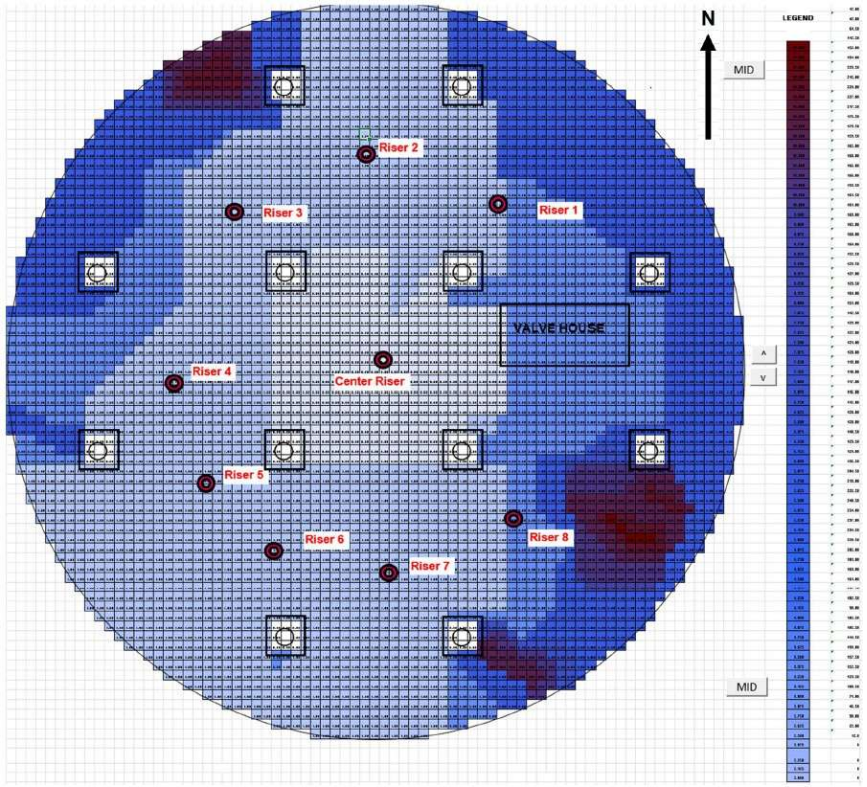
- **Video inspection of the primary tank was carried out in four risers: Riser 2, Riser 5, Riser 7, and the Center Riser and a map of the estimated remaining solids was created**
  - *Estimated ~6,800 gallons of solids*
  - *Two mounds were found near Riser 8 and northwest of Riser 2*
  - *One smaller mound was found southeast of Riser 7 behind a column*

[U-ESR-F-00146]

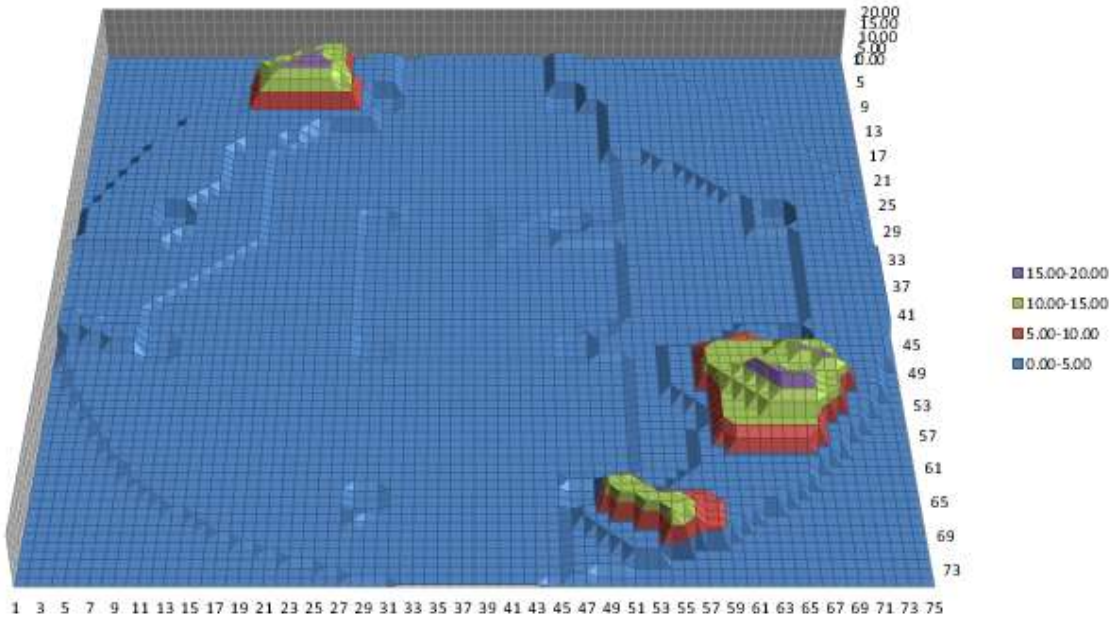
Current Status of Tank 2

Residual Solids Map Plan View

Liquid Level = 4.5”



Residual Solids 3-D Model
(height exaggerated to show detail)

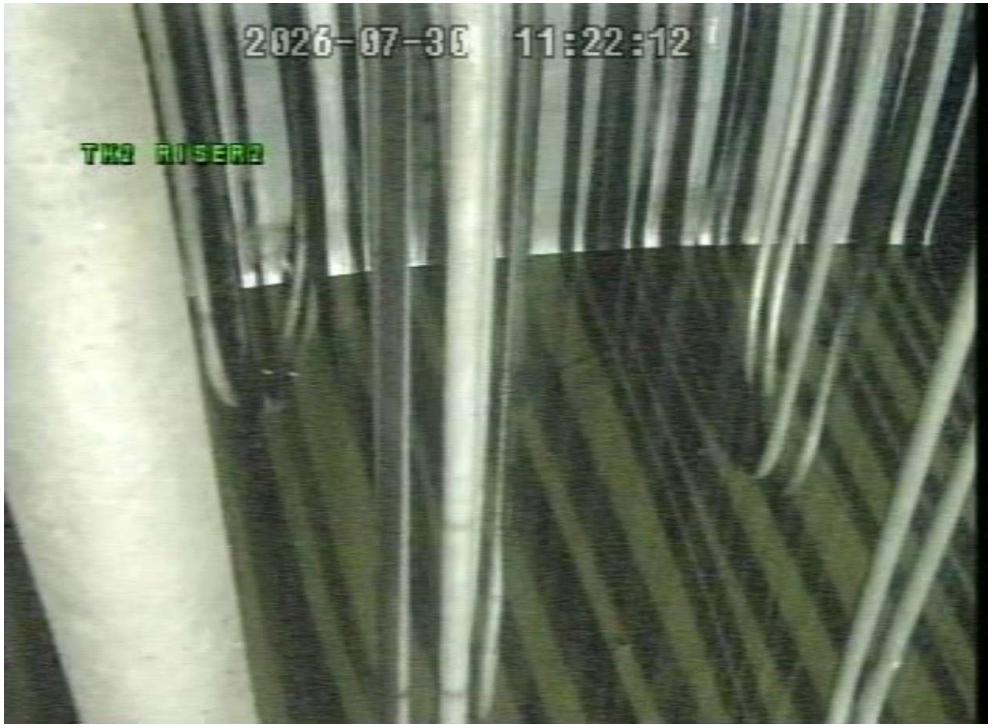


Remaining Solids ~6,800 gallons

[U-ESR-F-00146]

Current Status of Tank 2

North



Northeast



Current Status of Tank 2

East



Southeast



Current Status of Tank 2

South



Southwest



Current Status of Tank 2

West



Northwest



Current Status of Tank 2

Center



Northwest Mound



Current Status of Tank 2

Southeast Mounds



Southeast Mounds



Tank 2 Annulus Condition

- **Through November 2024**
  - *No leak sites have been documented and no waste is visible on the annulus floor*
  - *Four annulus risers, North, South, East, and West, are available for inspection and provide a 25% inspection capability*

[SRMC-STI-2026-00165]

Tank Annulus Condition

South Looking West



South Looking East



West Looking North



West Looking South



Tank Annulus Condition

East Looking South



East Looking North



North Looking East



North Looking West



Summary for Closed/PCWR Complete Tanks

Waste Tank	PCWR Date	Operational Closure Date	Max. Dose within 10,000 years[1] (mrem/yr)	Primary Tank Residual Solids Volume[2] (%)	Primary Tank Residual Solids Volume (Gallons)	Annulus Residual Volume (Gallons)	Annulus Cleaning
3[3]	09/2025	-	<3	~1	~8,000	Negligible	No - Negligible
4[3]	12/2024	-	<5	<1	<6,000	Negligible	No - negligible
5	11/2010	12/2013	3	0.26	1,900	<15	No – negligible
6	11/2010	12/2013	3	0.41	3,000	<50	Yes ~ 100 gal
8[3]	6/2025	-	<3	<1	<7,100	Negligible	No – negligible
9[3]	10/2024	-	<3	<1	<7,500	Negligible	Yes
10[3]	5/2024	-	<2	<0.40	<3,000	<400	Yes
11[3]	5/2025	-	<4	<1	<8,000	Negligible	No - negligible
12	1/2014	4/2016	6	0.20	1,500	30	No – negligible
14[3]	3/2026	-	<8	<1	<3,800	~3,700	Yes
15[3]	5/2025	-	<6	<1	<6,000	1,800	Yes
16	4/2013	9/2015	2	0.21	356	1,910	No – not practical
17	N/A	12/1997	3	0.18	2,400	N/A	N/A
18	10/2009	9/2012	3	0.30	3,900	N/A	N/A
19	10/2009	9/2012	3	0.15	2,000	N/A	N/A
20	N/A	7/1997	3	0.08	1,000	N/A	N/A

[1] Dose for FTF tanks 5, 6 and 17-20 represents maximum all sources dose utilizing actual inventories. Dose for all other tanks represents maximum contribution from individual tanks. [SRR-CWDA-2012-00106, SRR-CWDA-2015-00073, SRR-CWDA-2014-00106]
[2] Based on historic maximum waste volume for each tank. [DOE/SRS-WD-2012-001, DOE/SRS-WD-2014-001]
[3] Tanks 3, 4, 8, 9, 10, 11, 14, and 15 Values based on preliminary information

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