

# SRMC Presentation to Governor's Nuclear Advisory Council

Dr. Dave Olson, President and Program Manager

*October 26, 2023*



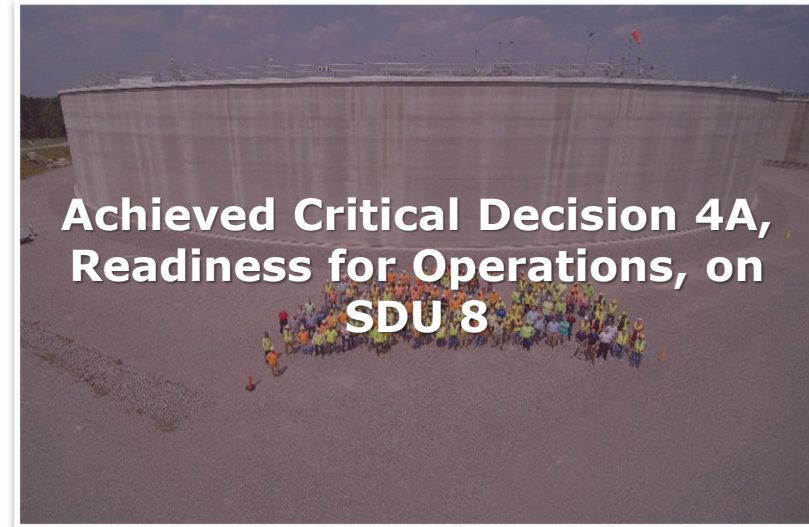
BWX Technologies, Inc.



Experience | Passion | Purpose



# Fiscal Year 2023 - Accomplishments



# DBD Model Demonstration

Pete Hill

Andrew Jung

Scott Williamson-Owens



BWX Technologies, Inc.



## ❖ Nuclear Engineering

Front end engineering solutions to regulated industries.  
De-risking engineering projects with our tools, technique and experience

## ❖ Mission Optimization

Providing digital tools and platforms to simplify key decisions and optimize our clients' complex missions.  
Maximizing the value of clients existing data

## ❖ Safety and Assurance

Mitigating risk in the decommissioning of legacy nuclear sites.  
Providing assurance to projects which keep the UK safe and secure.

## Modeling Successes

### ❖ Dounreay – Site Closure Optimization and Risk Reduction

Re-structuring and streamlining a complex project plan to achieve site decommissioning in reduced time and at reduced cost, through automated task prioritization.

### ❖ Idaho AMWTP – Multi-stream Optimization

Speeding up a complex facility with many process lines, by utilizing all of the process lines more efficiently and reducing overall plant downtime, by coordinating repairs and shutdowns.

### ❖ AWE – Waste Repackaging and Relocation

Relocating schedule for waste material from an old storage facility to a new purpose-built one, safely, and in a timely fashion that removed the need to re-assure the safety of the old facility.

### ❖ Sellafield – Effluent, Sludge and HAW Treatment

Improving a wide range of chemical engineered processes including aqueous effluent treatment, chemically-reactive sludge management and waste vitrification processing.

### ❖ Strategic Petroleum Reserve – Cavern Management

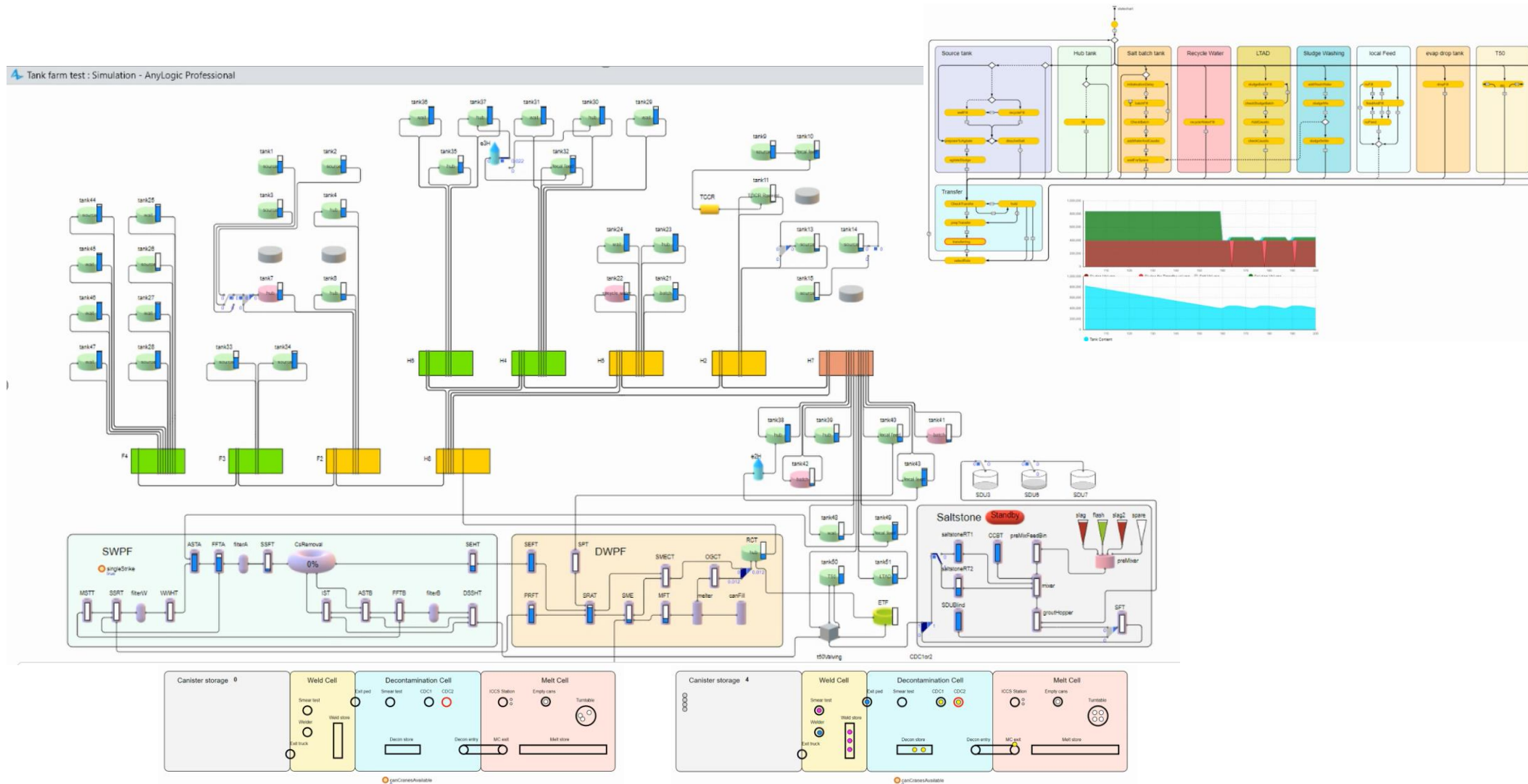
Linking chemistry models of petroleum prediction, through engineering cavern management to financial modeling of gasoline sales to benefit US government and taxpayers.



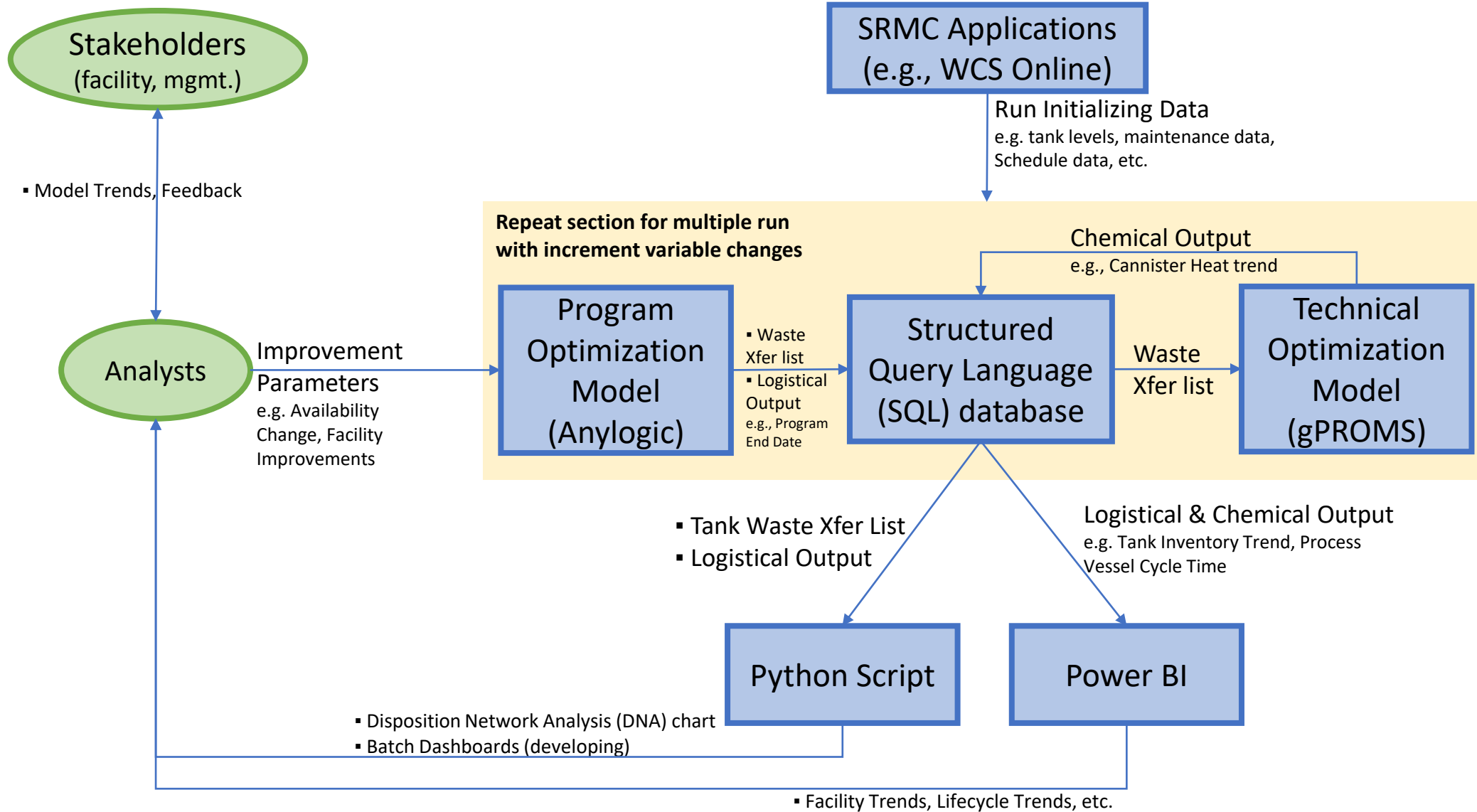
# Program Optimization Model: POM (Demo)



Tracks Fluid Movements & Resources  
Utilizes **AnyLogic** software



# Modeling Schematic



# Power BI Demo

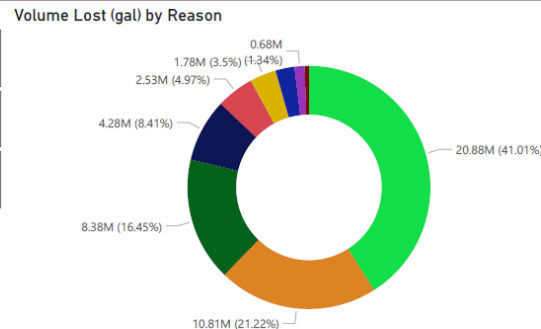




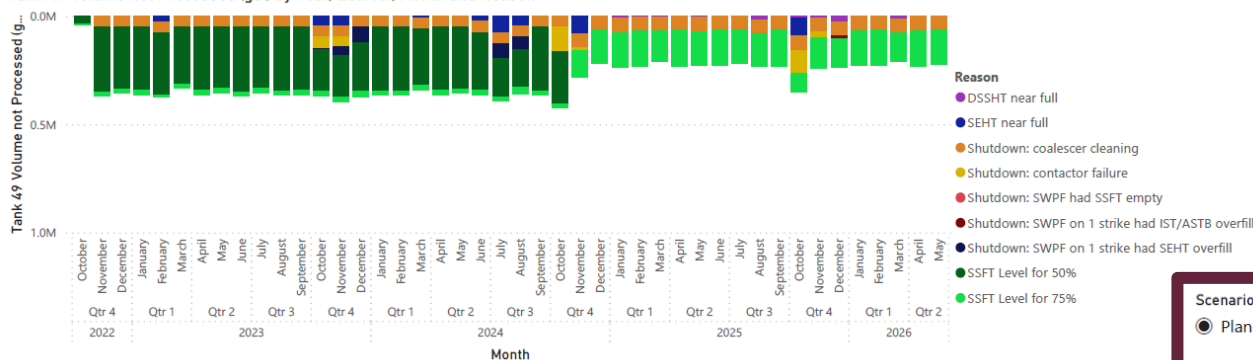
# Power BI Output

upload\_ref  
 JUWYA

Select all	2024	2027	2030	2033	2036	2039
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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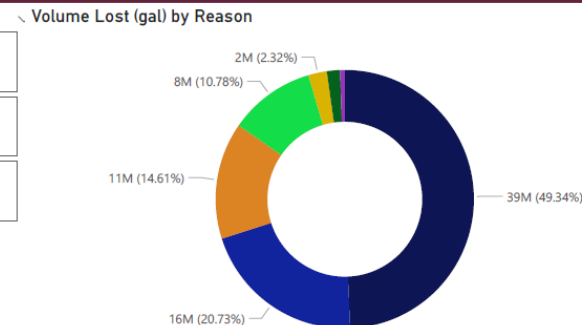
Tank 49 Volume not Processed (gal) by Year, Quarter, Month and Reason



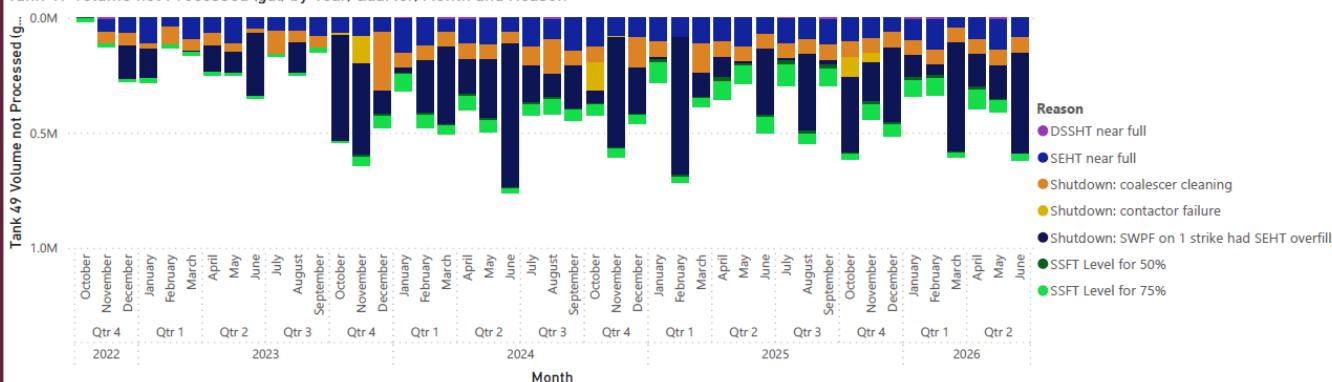
Current State: SWPF throughput limited by filtration rate

Scenario Name  
 Planned High

Select all	2023	2026	2029	2032	2035	2038
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Tank 49 Volume not Processed (gal) by Year, Quarter, Month and Reason

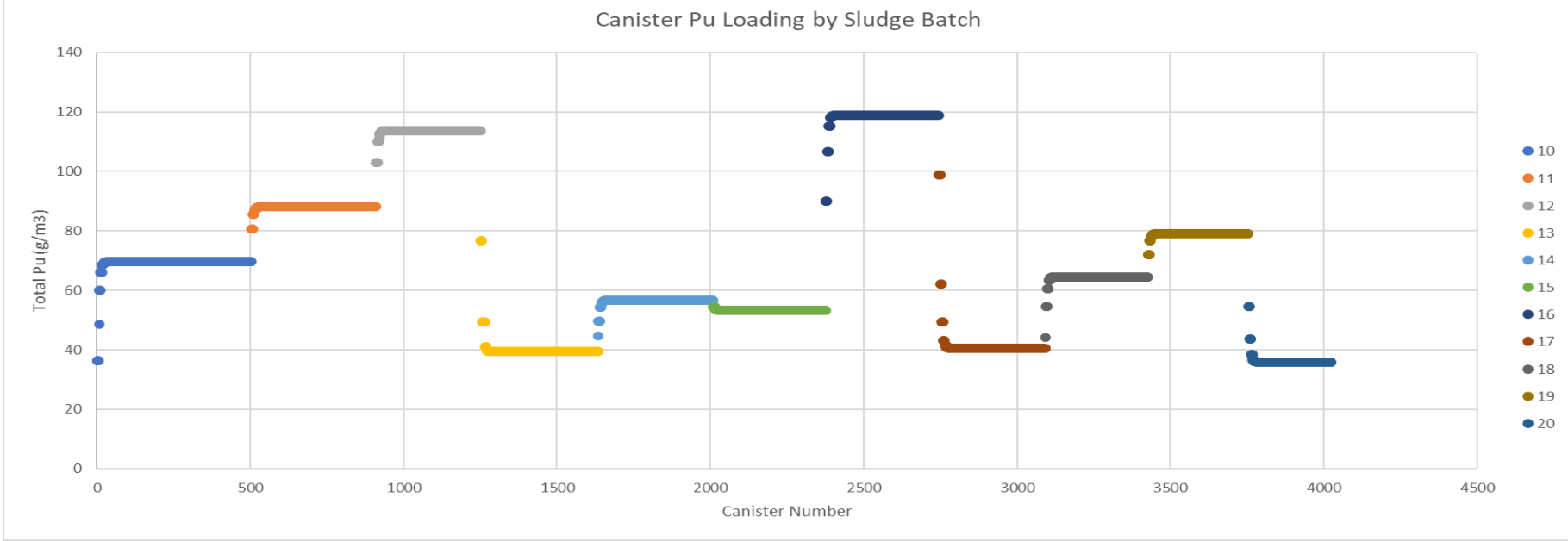
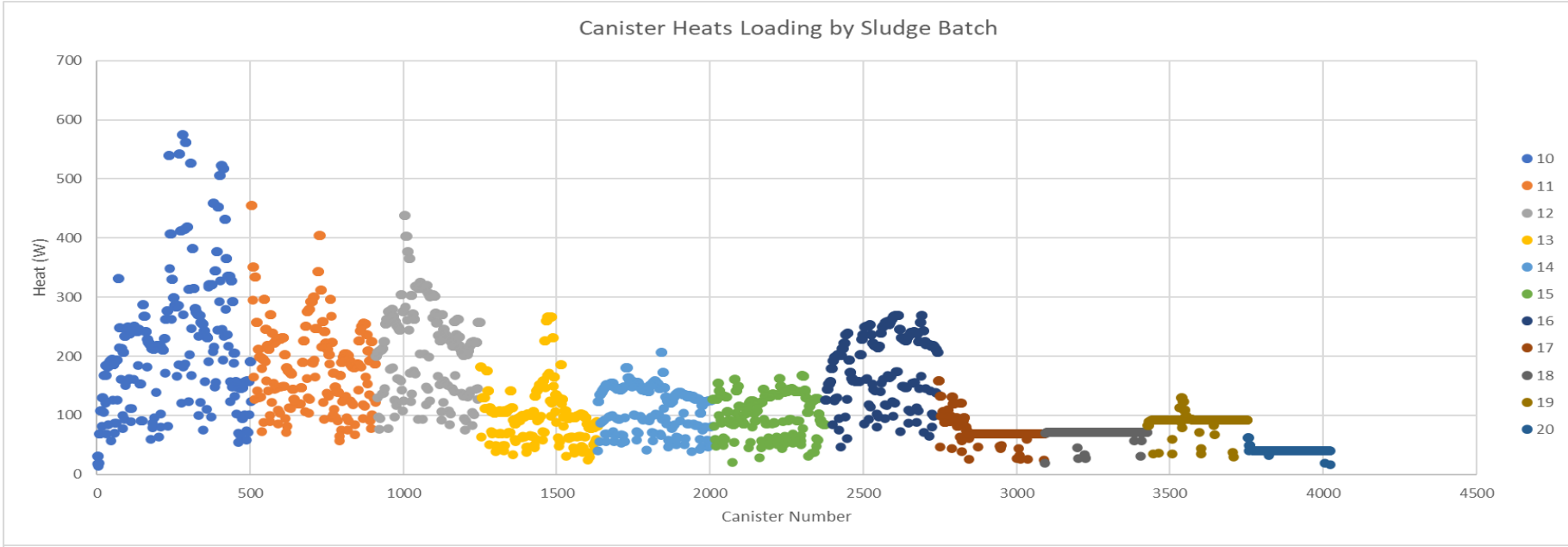


Future: When filtration rate is improved, SWPF becomes limited by DWPF



# TOM: Tracking Chemistry

Simulating Fluid Flow & Chemistry (gPROMS)

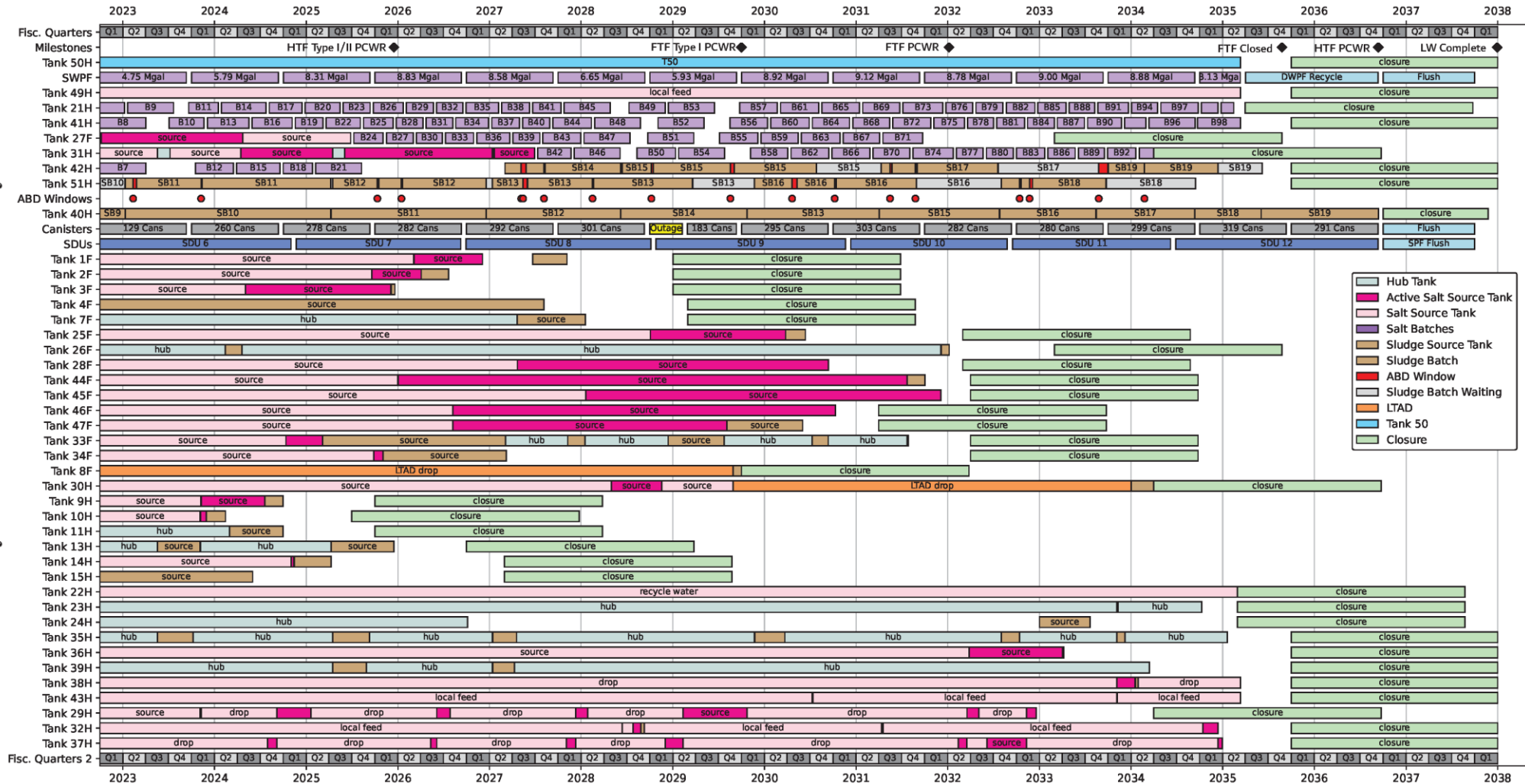


## Custom-built with Python Matplotlib

Liquid Waste System  
Plan Revision 23

### LW System Plan—Rev 23 Summary

SRMC-LWP-2023-00001  
March 2023



# Fiscal Year 2024 Objectives

Dr. Dave Olson, President and Program Manager



# Fiscal Year 2024 – Objectives



**Complete Waste Removal Modifications on 7 Tanks & Achieve Preliminary Cease Waste Removal on 2 Tanks**

An aerial photograph showing a complex industrial site with numerous large cylindrical tanks, pipes, and various structures. The terrain appears to be a mix of cleared land and some vegetation.

**Pour 260 canisters at the Defense Waste Processing Facility**

A photograph of a large, multi-story industrial building with a prominent tall chimney stack. The building has a complex facade with many windows and structural elements. The sky is overcast.

**Achieve Critical Decision 4A, Readiness for Operations, on SDU 9**

An aerial view of several large, circular industrial tanks or storage vessels arranged in a cluster. The tanks are surrounded by paved areas and some greenery.

**Demonstrate a 6 million gallons per year rate at the Salt Waste Processing Facility**

A wide aerial shot of a large industrial facility with several large rectangular buildings and a central area with some greenery. The facility is surrounded by a parking lot and other infrastructure.

**Commitment to subcontract 50% of all purchases to small businesses**

A nighttime aerial photograph of an industrial or city area, with buildings and streets illuminated by lights. The scene is dark, with the lights providing the main source of illumination.

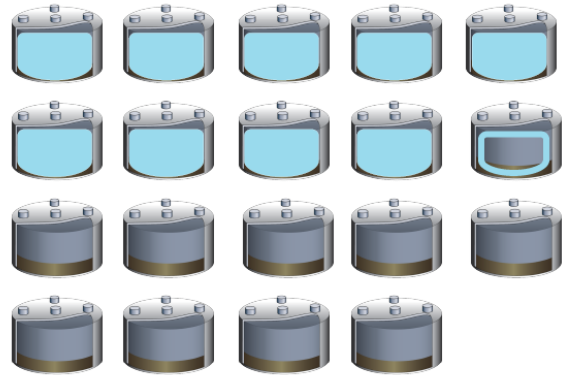
**Continue engagement with regional academic and civic organizations**

A photograph of two people, a man and a woman, sitting at a table. The man is on the left, wearing a light-colored suit and glasses. The woman is on the right, wearing a dark top. They are both smiling. The background is a blue wall with logos and the text "#TheBESTofBC".

# SRS Liquid Waste Mission Progress to Date\*



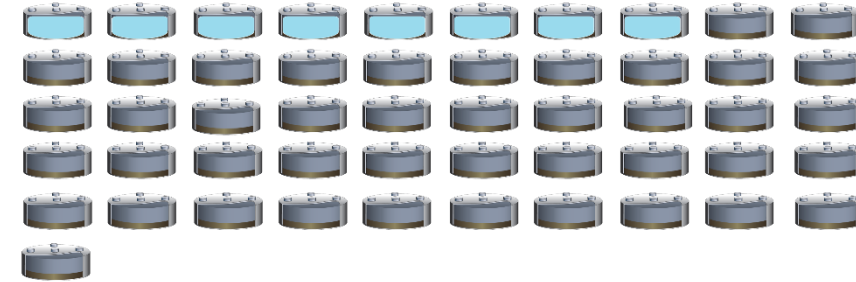
**Sludge batches processed:**  
9 of 19 projected



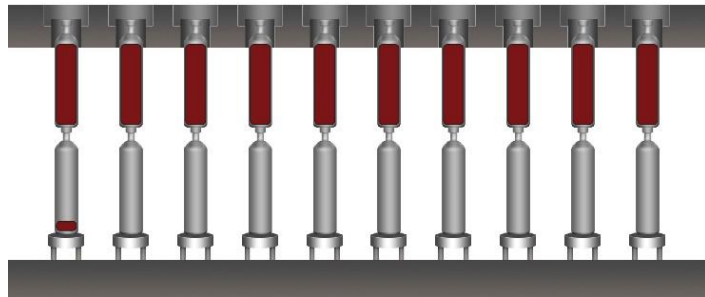
**Salt batches processed:**  
8 of 100 projected



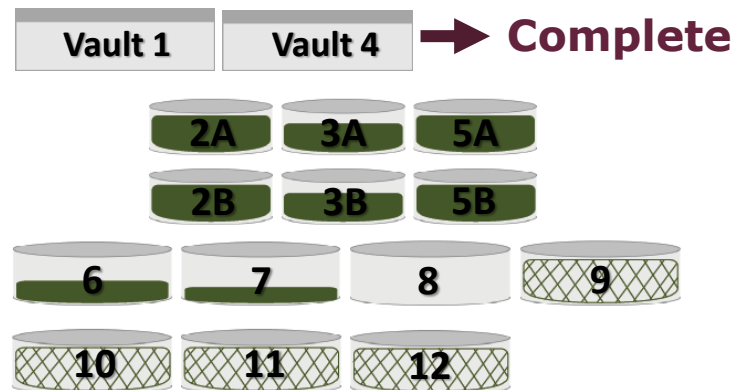
**Tanks closed: 8 of 51**



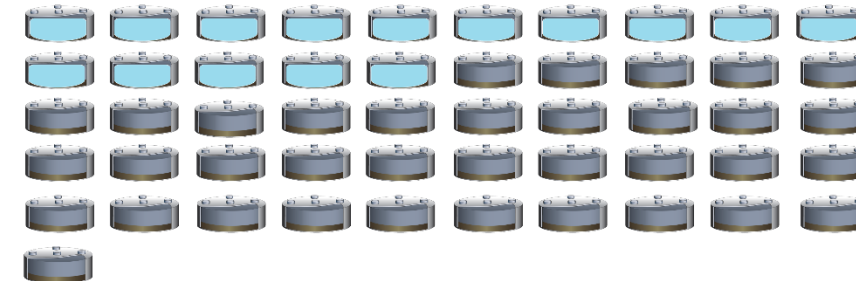
**Canisters: 4,395 total**  
**of 8,113 projected**



**Saltstone Disposal Units**



**Tanks retrieved: Waste**  
**removal complete on 15 of**  
**51 tanks**



\* As of September 30, 2023

# Questions?