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# Using Innovation to Safely Accomplish the Liquid Waste Mission

**Dr. Thomas Burns, Jr.**

**President & Program Manager**

**June 18, 2025**

# SRMC Executive Leadership



**President and  
Program Manager**  
Dr. Thomas Burns, Jr.



**Optimization &  
Integration Director**  
Steve Howell



**Chief Administrative  
Officer**  
Bret Evans



**Chief Operations  
Officer**  
Mike Borders

Tank Farms

Defense Waste  
Processing Facility

Salt Waste  
Processing Facility

Tank Closure

Capital Projects

End Stream  
Delivery

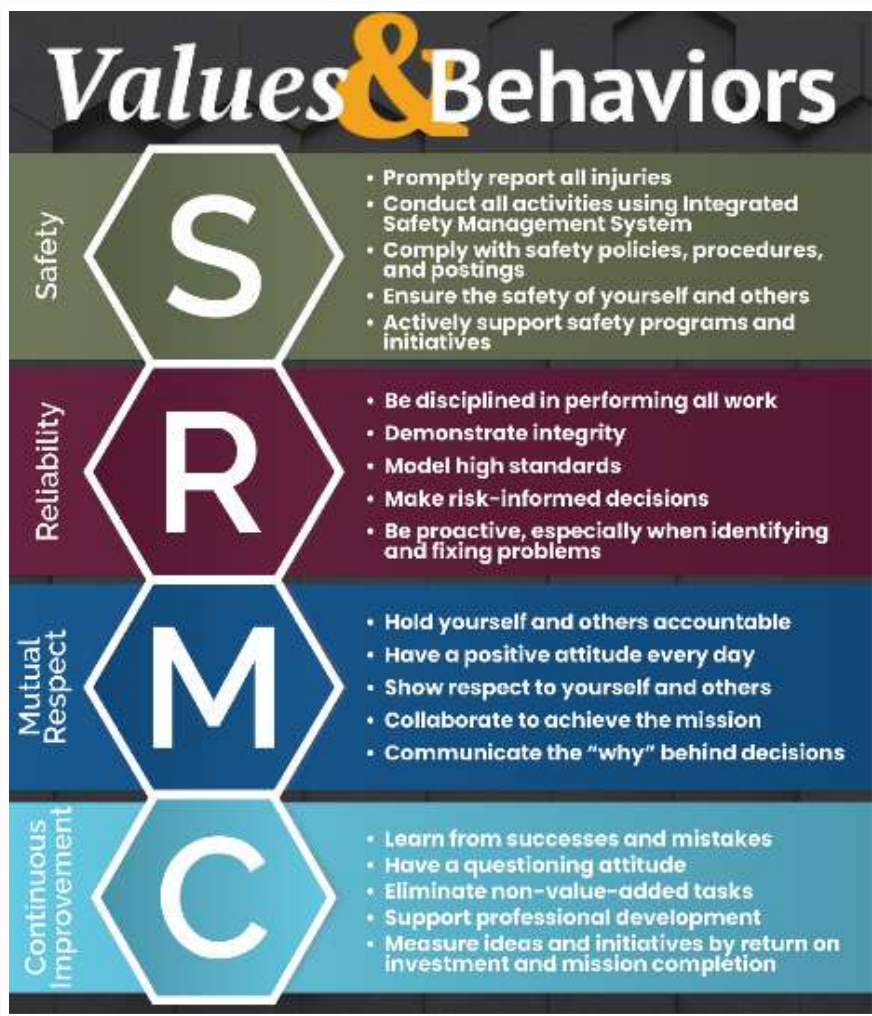


**Chief Engineer**  
Cliff Conner



**Environment, Safety, Health,  
& Quality Assurance Director**  
Wes Bryan

# Safety

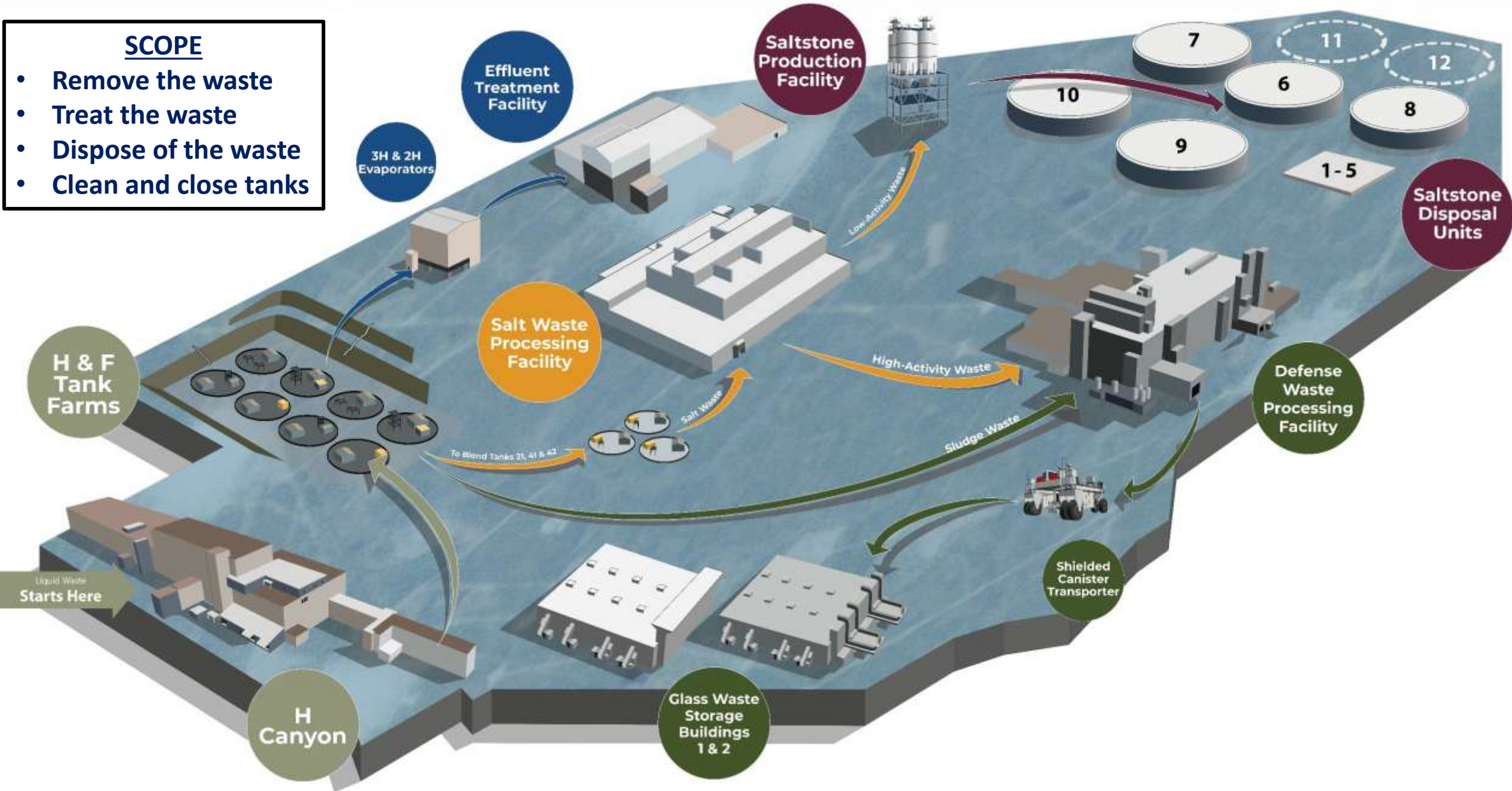




## SRS Liquid Waste Facilities

## SCOPE

- **Remove the waste**
- **Treat the waste**
- **Dispose of the waste**
- **Clean and close tanks**



# SRS Liquid Waste Mission Progress to Date\*

Sludge batches processed:  
9 of 18 projected



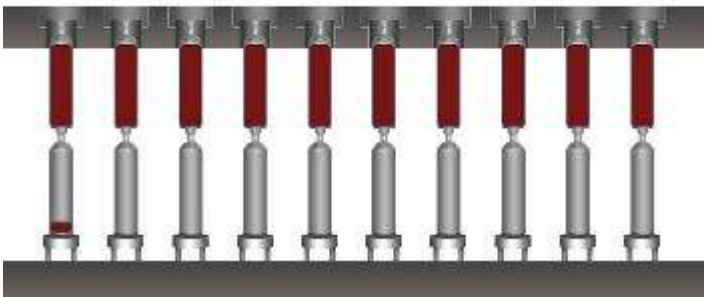
Salt batches processed:  
12 of 90 projected



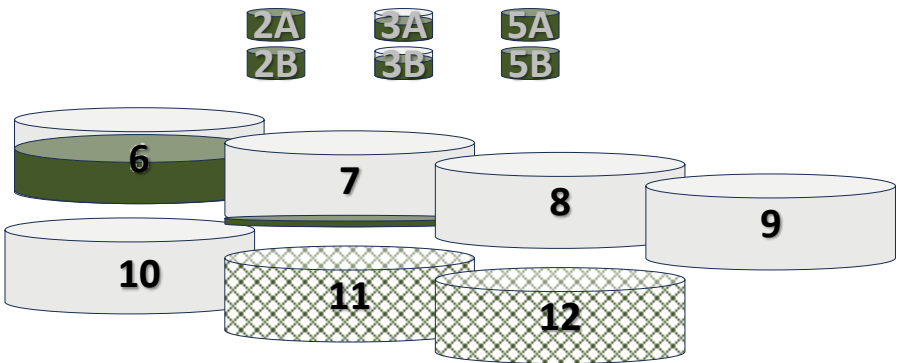
Preliminary Cease Waste  
Removal Complete:  
13 of 51 tanks



Canisters: 4,468 total  
of 8,113 projected



Saltstone Disposal Units



Tanks closed: 8 of 51



Last Updated: May 31, 2025



# Preliminary Cease Waste Removal (PCWR)

## GOALS (in priority order)

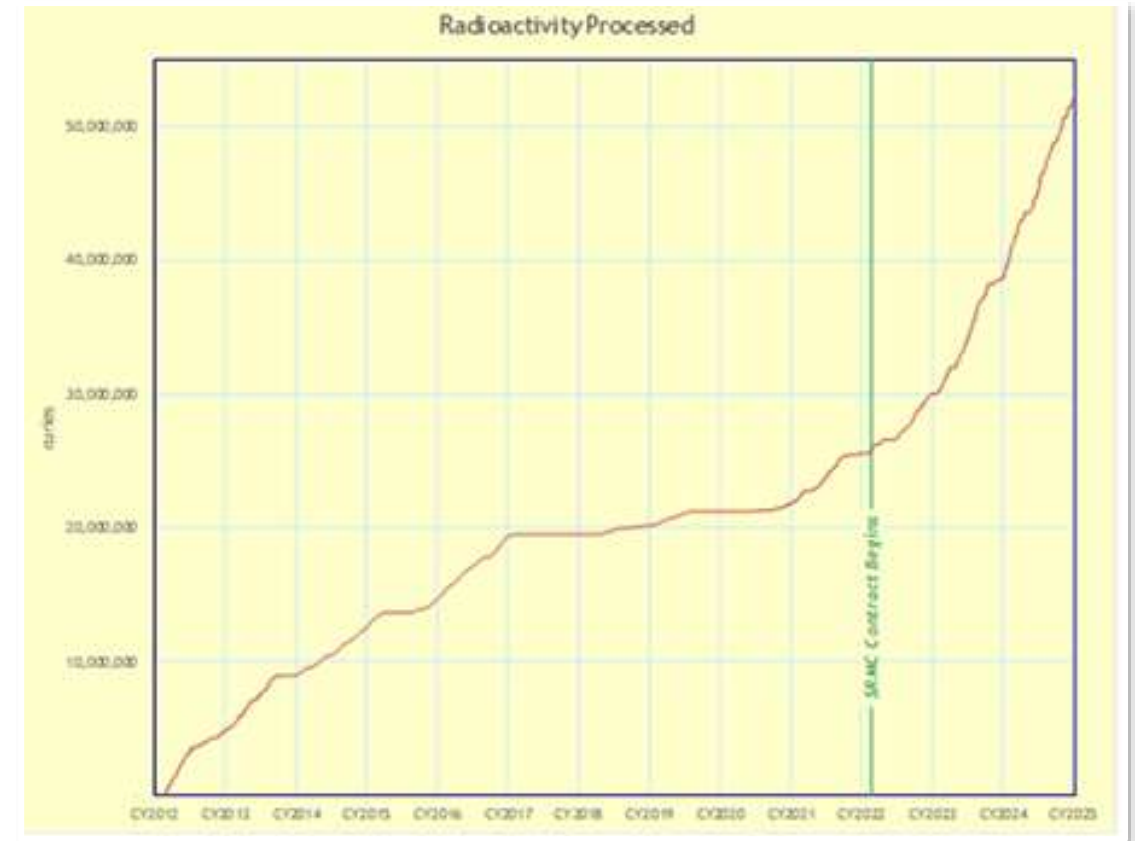
1. Reduce risk to the environment by removing waste and closing tanks with a goal of completion of the liquid waste program by 2037
2. Reduce operational and environmental risk by aggressively removing curies from the waste tanks
3. Reduce operational and environmental risk by optimizing operations to 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



- Accelerating PCWRs ahead of FFA commitments

# Recent Accomplishments

- Surpassed 21 million safe hours
- Completed cleaning of 5 tanks declaring Preliminary Cease Waste Removal, all complete months ahead of Federal Facility Agreement schedule
- Established new processing records at the Salt Waste Processing Facility (SWPF) and Saltstone facilities
- Dispositioned 26.3 M Ci of waste, > 3 times the historical rate
- Developed and implemented SWPF filter upgrade design, addressing the SWPF filtration limitations
- Approved Critical Decision (CD)-4A for Saltstone Disposal Unit (SDU) 9 supporting decontaminated material final disposal \$60M under budget and 7 months ahead of schedule
- Completed canister storage modifications to Glass Waste Storage Building 1 to provide storage for over 2,200 canisters saving \$100M
- Consolidated Saltstone and Effluent Treatment Facility (ETF) control rooms
- Upgraded all simulator training platforms, including a new ETF and Defense Waste Processing Facility Crane simulator



# Challenges and Opportunities

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- Sustaining excellence in Safety and CONOPS
- Integrating ~300 new employees per year into the workforce culture
- Maintaining equipment and system reliability
- Managing waste stream and flow sheet variability
- Preparing the next generation of leaders





# Innovation: Digital Transformation at SRMC

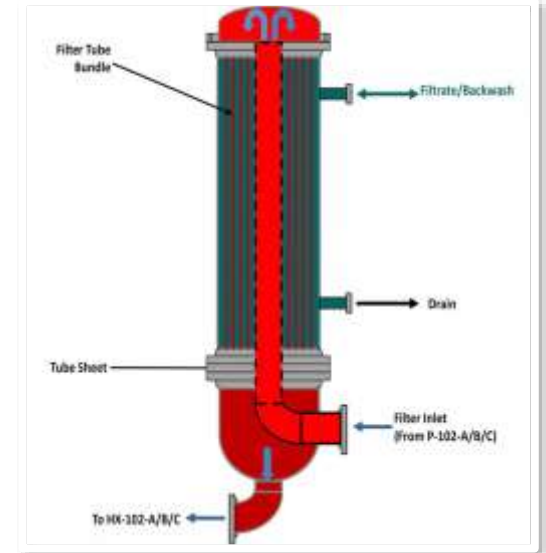
## Artificial Intelligence & Machine Learning

- Deployed multiple high fidelity training simulators utilizing machine learning and process models. These systems are used to improve operator proficiency in executing scope safely
- Collaborating with Savannah River Nuclear Solutions, SRMC fully deployed an AI system, named Chat\_SRS, that supports the entire liquid waste mission
- Deployed Machine Learning/AI to identify legacy spare parts, saving significant engineering hours
- Deployed Machine Learning System to multiple SRMC facilities, supporting engineering with facility and process throughput improvements
- SRMC piloted Generative AI within the training organization, resulting in a 70% reduction in the development time for Computer Based Training (CBT)



# Innovation: SWPF Production

- Spent 4 weeks in spring outage
- Many replacement parts in all liquid waste facilities
- One of the most notable: New SWPF cross flow filters
- SWPF has been steadily ascending to a production rate of 6M gal/yr
- Filtrate production in the cross flow filters has been limiting the final ascension to 9M gal/yr
- Engineers devised a novel way to increase the available surface area of the 3 cross flow filters by nearly 200%
  - Existing 10-foot-long filters containing 234 filter tubes were replaced with 16-foot-long filters containing 288 filter tubes
- Increasing the available surface of the filters increases the filtrate production through the filters
- Cross flow filters will no longer limit production in the final ascension to 9M gal/yr



# Innovation: Drones Going Where They Have Never Gone

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- First drone use in liquid waste was last year for the Tank 9 annulus inspection
- Successfully executed the first in-tank drone inspection in Tank 15
- Also piloted first drone sampling in Tank 10, expanded capability in Tank 11
- Using drones for inspections and sampling





# Our Employees

- **SRMC has welcomed over 480 new participants to its Production Operator Apprenticeship Program with Aiken Technical College Since 2022**
- **Largest Class of Summer Interns**
  - *72 interns from 30 colleges and universities comprised SRMC's largest class of interns in program history*
- **First Line Managers Forum**
  - *Approximately 170 first line managers participated in a leadership workshop that has now resulted in a forum to improve communication and best practices*



# Community Investment

- **SRMC's community commitment: time, talent, treasure**
  - *Employee-led campaigns to support community organizations, such as the Heart Walk and United Way*
  - *Education outreach from K-12, universities, technical schools*
  - *Many employees and senior managers serve on local boards and committees to help them thrive*



# SRMC: Execute with Excellence

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- We've set the table during the first 3 years
- Now, it's about sustained, safe execution
- To get there:
  - *Taking ownership*
  - *Valuing and driving innovation*
  - *Empowering accountability*
- **Securing these footholds = Safely accelerating our mission**





# Thank You!

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- We appreciate your support of this critical environmental clean-up mission
- Let us know how we can help you



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