

# DOE/EM Waste Management Update

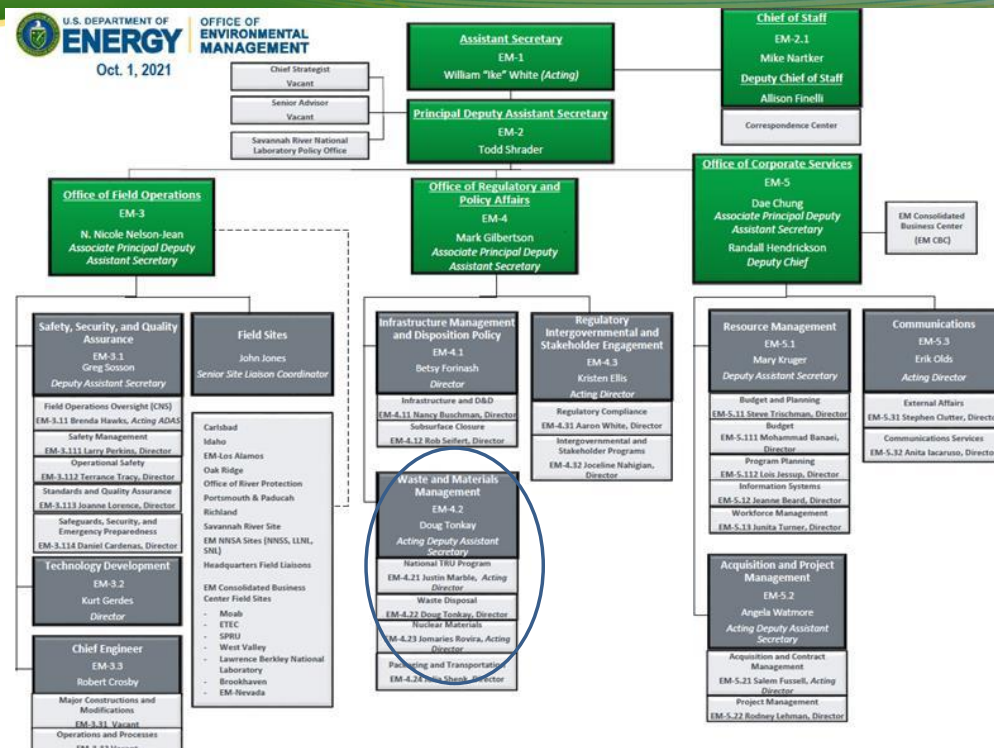
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**Acting Deputy Assistant Secretary for Waste and Materials Management**

**Presentation to the LLW Forum**

Office of Environmental Management

October 2021

## Waste Management in the EM HQ Organization



Org charts regularly updated and posted to <https://www.energy.gov/em/articles/em-organization-chart>

- DOE’s Radioactive Waste Management Manual (M435.1-1) has the current “tiered” policy on treatment, storage, and disposal:
 

*DOE waste shall be treated, stored, and in the case of low-level waste, disposed of at the site where the waste is generated, if practical, or at another DOE facility. If DOE capabilities are not practical or cost effective, exemptions may be approved to allow use of non-DOE facilities for the storage, treatment, or disposal of DOE radioactive waste ...*
- Waste disposal is always fully protective of worker and public health and the environment and in compliance with applicable Federal, state, and local requirements, with necessary permit(s), license(s), and approval(s) for the specific waste.
- Sufficient LLW/MLLW disposal capacity exists at DOE and commercial facilities to support the EM cleanup mission.

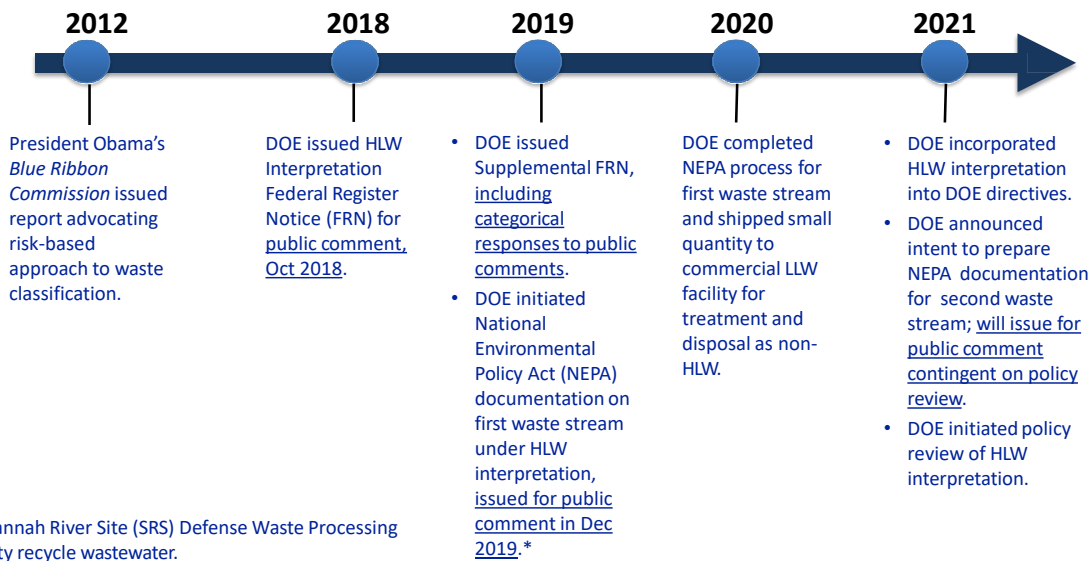


**Oversight**

**Commercial Facilities:** Nuclear Regulatory Commission (NRC), Agreement State, Other State/Federal Agencies.

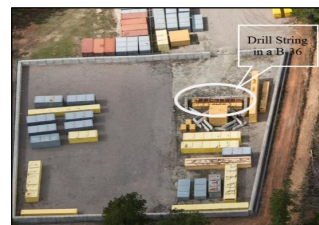
**DOE Facilities:** Regulatory; DOE-HQ Program Offices; DOE-HQ Independent Oversight; DOE Site/Field Office; Contractor; External Independent Oversight (Defense Nuclear Facilities Safety Board, Govt. Accountability Office, etc.).

- DOE has proceeded deliberately with proactive stakeholder engagement throughout the process.
- Current efforts focused on completion of policy review of DOE's HLW interpretation and analysis of 2<sup>nd</sup> Waste Stream (contingent on policy review).

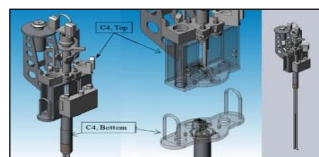


## SRS Contaminated Process Equipment Potential 2<sup>nd</sup> Waste Stream for Analysis

- **Tank 28F Salt Sampling Drill String**
  - Used to collect reprocessing waste samples from the waste storage tank.
  - Steel piping contaminated with reprocessing waste (supernatant) from Tank 28F.
- **Glass bubblers**
  - Used to increase efficiency of DWPF melter operations.
  - Approximately 60 contaminated bubblers in storage at SRS.
  - About 4 contaminated glass bubblers will be generated every 6 months until DWPF operations are completed.
- **Glass Pumps**
  - Used to support melter efficiency and are no longer in use at SRS having been replaced by the glass bubblers.
  - Approximately 10 glass pumps in storage at SRS requiring final disposal.



Tank 28F Salt Sampling Drill String in B-36 Box

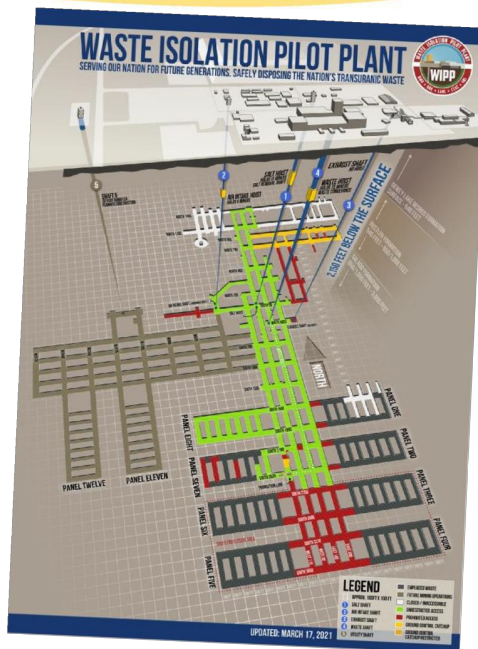


Glass Bubbler



Glass Pumps

- Total number of TRU waste sites cleaned up to date: **22**
- Total shipments (as of 7/24/2021): **12,951** traveling over **15.5 million** miles.
- Recently increased shipments from ~5 per week to ~10 per week.
- Remains a cornerstone of DOE's ongoing cleanup efforts.



## Worker Safety

- 700-C fan restart
  - Successfully completed 4-hr test in January 2021.
  - Public meeting reporting sampling results, completed on 4/15/2021.
  - Restart targeted in CY 2021.
- Ground control and routine safety

## Mine Capacity and Waste Emplacements

- Complete Panel 8 floor trimming and outfitting.
- Continue to optimize waste shipments to meet generator site cleanup goals.



Mining in WIPP underground provides needed capacity to support DOE missions.



Restarting 700 fan provides increased air flow to workers.

**Upgrade infrastructure**

- Safety significant confinement ventilation system (SSCVS).
- Utility shaft.
- Numerous general plant projects to upgrade WIPP facility infrastructure and plant systems (e.g., fire water loop, fire suppression system, replace electrical substations, etc.).



A bucket of excavated dirt is lifted out of the utility shaft.



New Filter Building construction as part of the SSCVS, which will increase HEPA filtered air to the WIPP underground, enhancing worker safety throughout the mine.

- In October 2018, EM issued the *Environmental Assessment (EA) for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste at Waste Control Specialists, Andrews County, Texas*.
  - The EA provides a site-specific analysis of the potential environmental impacts of disposing the entire inventory- 12,000 cubic meters- of GTCC LLW and GTCC-like waste at Waste Control Specialists LLC (WCS) in Andrews, Texas.
  - The EA is not a decision document.
- In June 2019, Nuclear Regulatory Commission's (NRC) issuance of the Draft Regulatory Basis for GTCC LLW disposal.
  - NRC issued its Draft Regulatory Basis for public comment in 2019. DOE provided comments to NRC.
  - In October 2020, NRC staff submitted to the Commission a paper on the path forward for the update to 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste, and whether to consolidate the rulemaking with the draft Regulatory Basis.
- "Await action by Congress" question as noted in Section 631(b)(1)(B)(ii) of the Energy Policy Act of 2005 needs to be addressed.

# LLW: Operating DOE & Commercial Disposal Facilities

## Hanford Site

- Onsite LLW/MLLW and Naval Reactors LLW
- Integrated Disposal Facility awaiting commissioning (onsite vitrified low-activity waste and LLW)

- All waste is disposed in accordance with each waste disposal facility's WAC.
- Each waste disposal site is licensed to dispose of specific waste types (see map below for examples).



★ DOE Disposal Facility    ■ Commercial Disposal Facility  
 CERCLA – Comprehensive Environmental Response, Compensation and Liability Act; RCRA – Resource Conservation and Recovery Act

## LLW/MLLW Data (MIMS and WIMS)

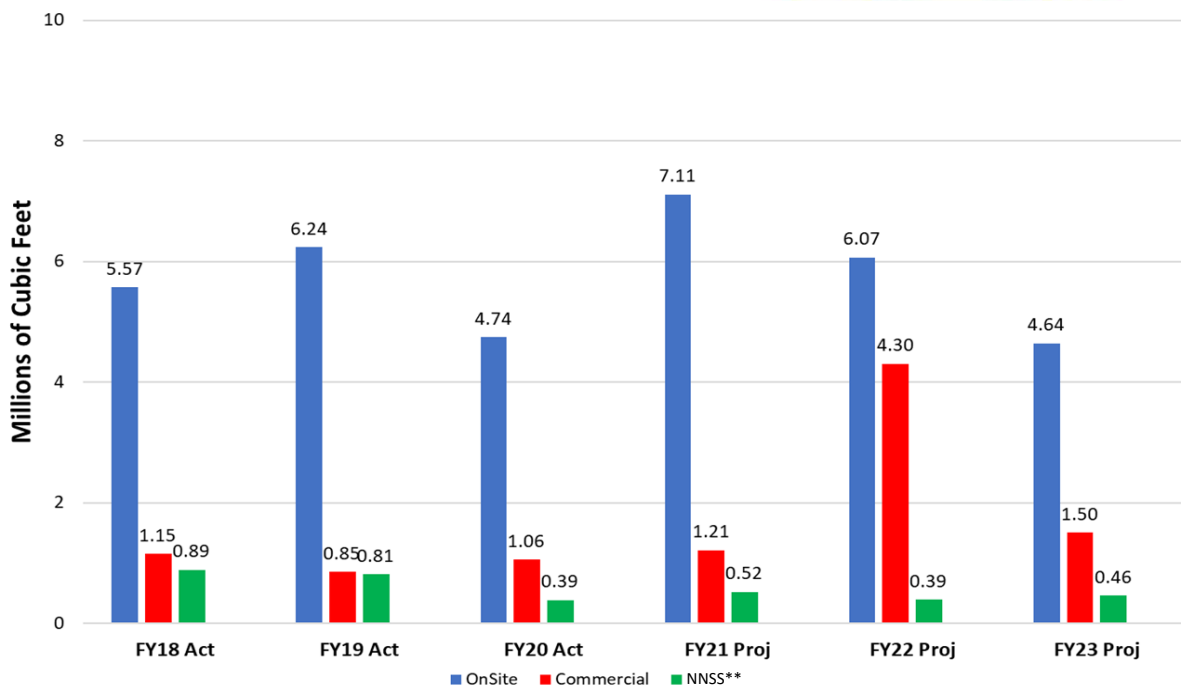
### Manifest Information Management System (MIMS)

- MIMS is the public source for manifest data of non-DOE LLW shipped to commercial disposal facilities to meet the provisions in 42 U.S.C. 2021g(a).
- States/compacts are the primary stakeholders; data collected for 35 years.
- Data is available for currently operating commercial LLW disposal facilities and the closed Beatty, Nevada, site.
  - Barnwell (Atlantic Compact), EnergySolutions of Utah, Richland (Northwest Compact/Rocky Mountain Compact), and Waste Control Specialists (Texas Compact).
- Includes calendar year 2020 data from the 4 commercial facilities.
- Visit MIMS at: <https://mims.doe.gov>

### Waste Information Management System (WIMS)

- Includes DOE planned LLW/MLLW treatment/disposal forecast
- Annually updated and website maintained by Florida International University
- Out-year data reflects uncertainty due to site funding adjustments, federal budget process, DOE priorities.
- Visit WIMS at: <https://emwims.org>

# Complex-wide LLW/Mixed Low-Level Waste (MLLW) Disposal Volume\* by Disposal Location



\*Based upon data currently compiled in EM WIMS

\*\*"NNSS" represents waste generated outside of Nevada that was disposed at NNSS

# Portsmouth Onsite Waste Disposal Facility



## Featured Site

- Oak Ridge Reservation, composed of
  - K-25 Former Gaseous Diffusion Plant Site
  - Y-12 National Security Complex
  - Oak Ridge National Laboratory

[DOE's environmental cleanup provides boost to state economy - YouTube](#)

[https://www.youtube.com/watch?v=f3uD1ez\\_0k8](https://www.youtube.com/watch?v=f3uD1ez_0k8)

## Questions?