

U.S. DEPARTMENT of **ENERGY**

Office of Environmental Management



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Waste Isolation Pilot Plant Mission



To provide safe and compliant characterization, transportation, and disposal of the United States' defense transuranic (TRU) waste while protecting workers, the public and the environment.





WIPP TRU Waste Disposal

- WIPP Land Withdrawal Act (LWA)
- Defense generated transuranic waste
- Must meet WIPP Waste Acceptance Criteria
- WIPP transuranic waste capacity 6.2M ft³
 - Current volume capacity filled = 2.7M ft³ (~45%)



Waste drums safely emplaced in a WIPP underground repository room



LWA remaining capacity



WIPP Site Operations Overview

Workers unload TRU waste containers from TRUPACT-II shipping packages







In the underground, workers systematically emplace waste drums in Panel 8 for permanent disposal



Waste Emplacement Update

425 waste shipments anticipated in FY2025

Current status:

- Emplacing waste in Panel Eight, Room 4 •
- 23,135 containers in Panel Eight •



Workers offload waste drums into the underground repository's Panel 8





Equipping the West Mains & Panel 11

MINING TO THE WEST S-250 210,193 tons of salt S-400 252,000 cubic feet of chain link mesh -1300 S-700 10,000 feet of multi-use TO PANEL 12 TO PANEL 11 ROOM 1 ROOM 2 ROOM 3 ROOM 4 ROOM 5 ROOM 6 ROOM 7



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19,000+ bolts

8 bulk heads

3 airlocks

cable

Seismic Activity in Relation to WIPP

- Tectonic activity strongly considered when choosing WIPP location
- Underground salt formations are geologically stable, absorb shock, have a plastic behavior, self-heals and closes fractures that might appear due to mined drifts and natural occurrences
- The last 10 years, no seismic activity detected in the underground
- Historical earthquake data and analysis of severe earthquake scenario determined no underground damage likely
- Staff at WIPP has access to data from 25 seismograph stations throughout New Mexico

Seismic Monitoring Stations for the Delaware Basin around WIPP





Overall Mission Accomplishments

- Total shipments: **14,273**
- FY25 shipments received: **104**
- Total loaded miles: 17,136,642
- Total miles driven: 34,273,284





Shipment Requirements



- Must pass Commercial Vehicle Safety Alliance Level VI Inspection (100% defect free)
- Two drivers per shipment
- Driver inspects truck/load within first 50 miles
- Additional inspections every 3 hours or 150 miles
- Inclement weather considerations
- States can perform additional inspections



Driver Requirements

The WIPP transportation program has strict requirements for their drivers:

- Must be a U.S. citizen
- Must have driven 325,000 miles in last five years and 100,000 miles per year in two of last five years
- Must not have repeated chargeable incidents, moving violations, or a single DWI/DUI in their private vehicles
- Must not have been charged with a moving violation in a commercial vehicle in last five years
- Must pass background check





Truck Safety

Equipped with:

- Collision avoidance •
- Active cruise with braking
- Cameras ۲
- All disk brakes •

- Speeds restricted to 65 mph
- Transcom satellite monitoring





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Safety of TRUPACT

TRUPACT Testing Requirements

- 30-foot drop onto a flat, unyielding surface
- 40-inch drop onto a 6-inch diameter steel rod at least 8 inches long
- 1475 ° F for 30 minutes
- Immersion test equivalent to external pressure under 50 feet of water





TRUPACT Testing



Infrastructure Investments

Projects will:

- Improve reliability
- Enhance worker safety
- Safety Significant Confinement Ventilation System (SSCVS)
- New Utility Shaft
- Other construction projects





Safety Significant Confinement Ventilation System (SSCVS)

Increasing airflow to the underground up to 540,000 cubic feet per minute

Progress

- ✓ Operations 90-day run *Complete*
- ✓ Management Self Assessment Phase 1 Complete
- ✓ Management Self Assessment Phase 2 Complete
- ✓ Contractor Readiness Assessment *Complete*
- > Wye connection *Installed, tie-in pending*
- System brought online Late summer 2025



Crews prepare to remove the elbow and install the wye they will use to connect the SSCVS to the under when it becomes fully operational



New Utility Shaft and Plant Upgrade Projects



Fans that will provide increased airflow into the underground from the utility shaft arrive on site

New Utility Shaft Project

- Providing higher-capacity air intake for the ٠ underground in conjunction with SSCVS
- Shaft sinking, station development and drift ٠ mining complete, horizontal connection to mine anticipated in 2025



A ramp is constructed to allow the mining machine access to the back (ceiling) in E-140

Other Plant Projects

- Salt pocket refurbishment
- E-140 refurbishment
- Completed site maintenance outage



Stakeholder Involvement

We strive to build trusted relationships through honest and transparent communication and active engagement throughout New Mexico



Strong History, Proud Future

- Successful second-annual DOE Regional Science Bowl
- Continued engagement with Southeast New Mexico College, K-12 schools
- Employee directed grants to local non-profits
- Fostering positive relationships with communities, Tribal governments and stakeholders
- Maintaining robust tour program
- Waste Minimization Program

Left: Underground tour hosted for Oregon Department of Energy team members

Inserts: SIMCO earns Carlsbad Police Chief's Award (left); WIPP Community Forum in Las Vegas, NM (middle); WIPP Roadshow in Abilene, TX





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