Waste Isolation Pilot Plant

A WIPP Status Report

Presented to

The New Mexico Radioactive and Hazardous Materials Committee

State Capitol, Santa Fe

November 12, 2013

Joe Franco, Manager

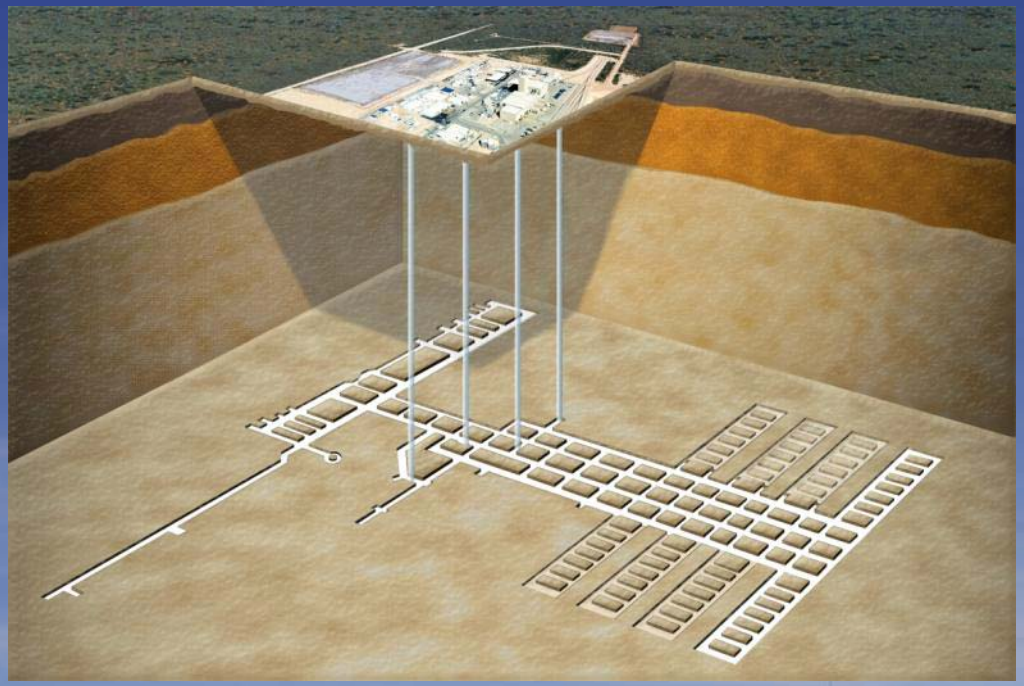
U.S. Department of Energy

Carlsbad Field Office

Today's topics

- WIPP basics
- WIPP's current status
- Key accomplishments (Since our last update - Sept. 2012)
- Questions & Answers

A national solution

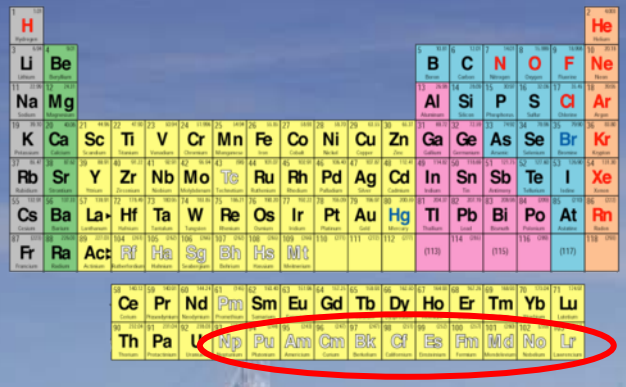


- WIPP is America's only deep geologic repository for the permanent disposal of defense-generated transuranic (TRU) radioactive waste left from research and production of nuclear weapons.

WIPP repository mined in salt

- 2,150 feet deep
- Why Salt?
  - Stable geology
  - Lack of water
  - Easy to mine
  - Plastic quality of salt allows it to close in on the waste

TRU Waste



Includes clothing, tools, rags, debris, residues and other items contaminated with man-made radioactive elements that are heavier than uranium

Types:

- Contact-handled
- Remote-handled

Waste characterization

- Waste must meet strict criteria to be eligible for disposal at WIPP
- Waste Acceptance Criteria specified in our hazardous waste facility permit from the New Mexico Environment Department

WIPP Transportation System

- Waste transported by truck in Nuclear Regulatory Commission-certified shipping containers
- Satellite tracking available to states and tribes
- First responders along routes trained for addressing radiological/hazardous incidents

Disposal

- WIPP certified by the EPA to contain the waste for 10,000 years
- More than 169,000 waste containers are permanently disposed

The WIPP Team

U.S. Department of Energy
Carlsbad Field Office
- Leads the Transuranic Waste Program
- Science Program

Nuclear Waste Partnership LLC
- Manages and operates the WIPP facility
- Manages transportation logistics and packages
- Manages waste retrieval, characterization and certification

Los Alamos National Laboratory
- Scientific advisor for waste characterization
- Mobile loading

Ma-Chis Lower Creek Indian Tribe Enterprises, Inc. – TRANSCOM
- Satellite Tracking

Visionary Solutions
- Transportation carrier

Sandia National Laboratories
- Scientific advisor for repository recertification

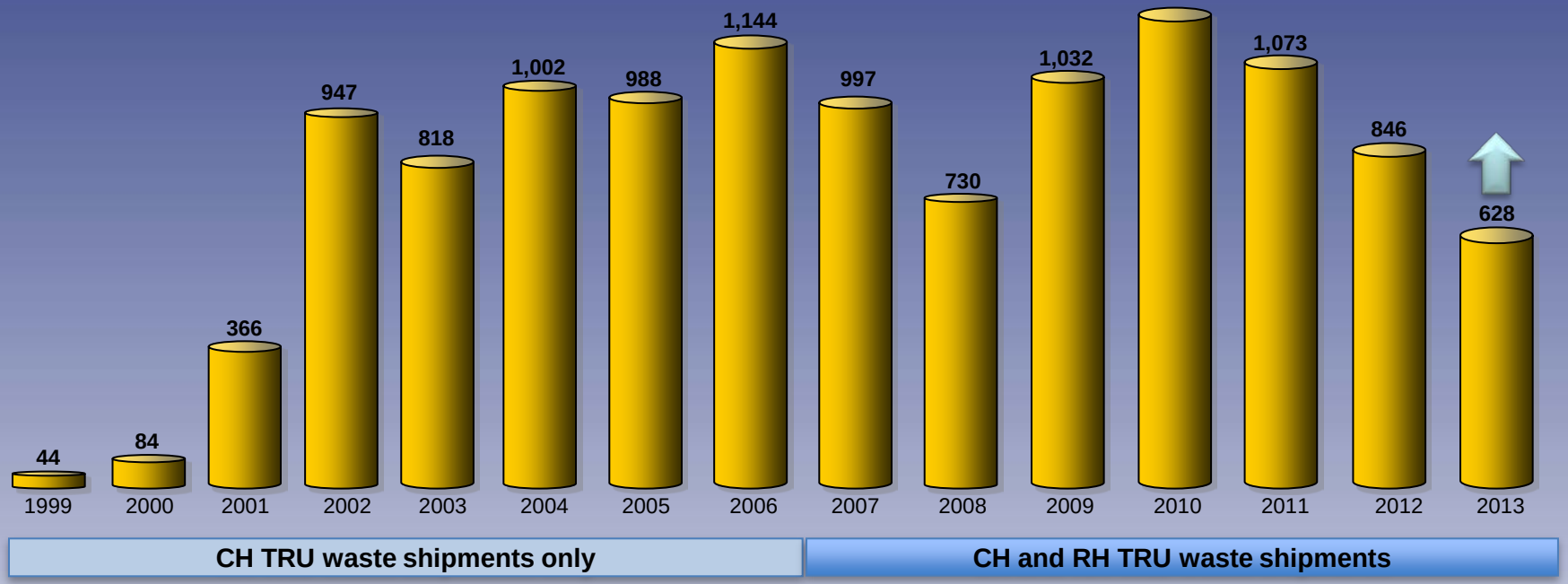
CBFO Technical Assistance Contractor
- Technical and Quality Assurance support for the Carlsbad Field Office

CAST Specialty Transportation
- Transportation carrier

Shipments Summary

Shipments received at WIPP: 11,708

Contact-handled: 10,995
Remote-handled: 713



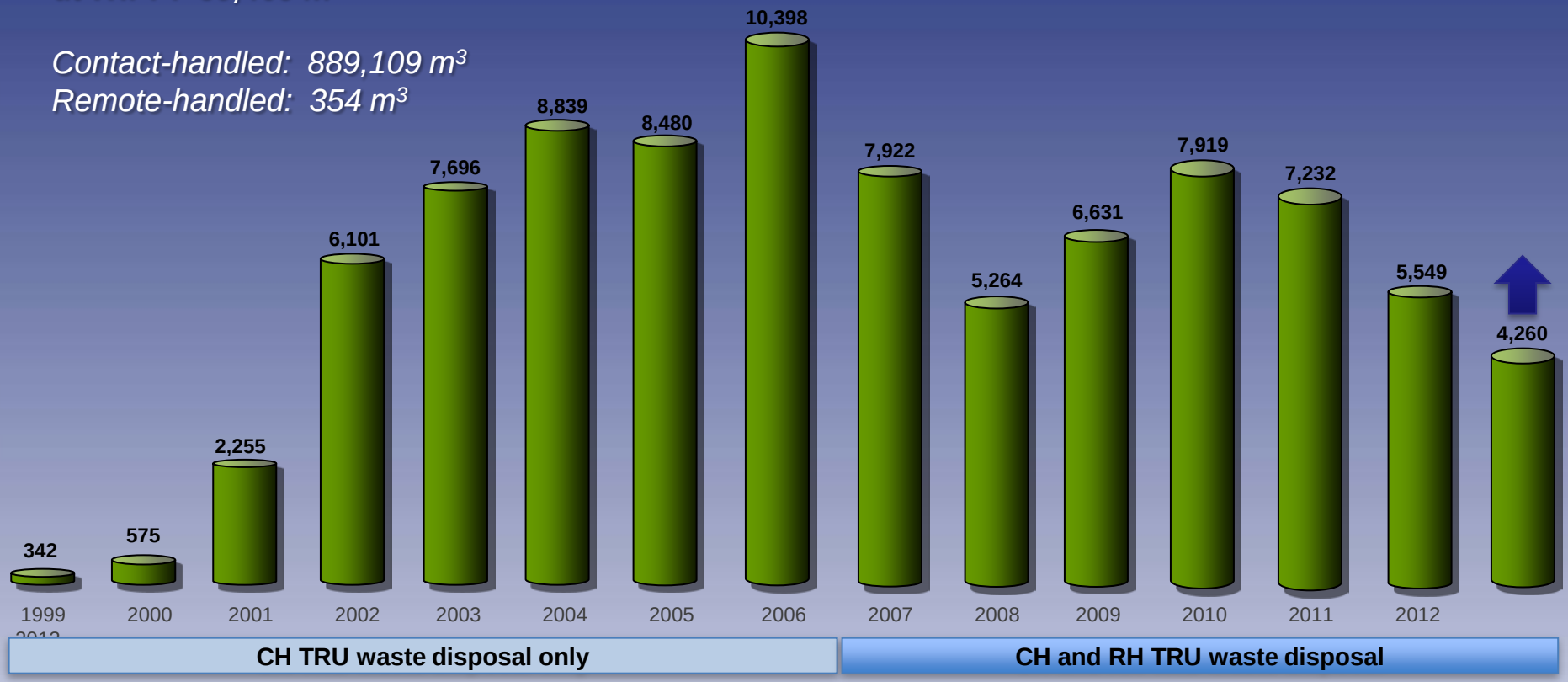
Total Shipments Received by Calendar Year
(Including intersite shipments)

As of November 4, 2013

Disposal Summary

Volume of waste disposed at WIPP: 89,463 m³

Contact-handled: 889,109 m³
Remote-handled: 354 m³



Waste Disposed by Calendar Year
(In cubic meters)

As of November 4, 2013

National cleanup

Total number TRU waste sites cleaned up of legacy TRU to date:

22

As of September 21, 2011

Key Developments since September 2012

Additional New Mexico/Texas Route

- Received approval from New Mexico and Texas
- Began using August 1, 2012
- Reduced mileage
- Continue to maintain original route
  - US 285 to US 62/180
- Seek renewal in December 2013

Temporary Carlsbad Route

- WIPP relief route (NM 200) scheduled for resurfacing January through mid-/late October 2013, resulting in road closure
- CBFO received approval from the NM State Transportation Commission for the use of NM 524 (approved truck route)

Figure 1
Preferred WIPP Route During NM 200 Construction
(Department of Energy)
CN: 2100650

Salt Disposal Investigations to Study Effects of Heat on Salt

- **Location:** Proposed SDI project is for testing and experimentation at WIPP
- **Purpose:** Investigate use of salt formations for disposal of thermally elevated waste types
- **Involves:** Data compilation, laboratory and field testing
- **Status:** Phase 1 and 2A have been completed

SDI Timeline and Expected Results

FY12 – FY14
Mining, preparation of test area(s), developing test plans, starting laboratory tests

FY14
Installing field heaters and instrumentation

FY15 – FY20
Field heater test and post-test forensics

Expected Results: Will expand knowledge, could confirm earlier studies regarding some aspects of heat effects on salt, and will provide foundation for future salt repositories for heat-generating nuclear waste.

700th RH Shipment

- Arrival: Sept. 12, 2013
- RH shipments began in January 2007
- First shipment and 700th shipment both originated in Idaho

Shielded Containers

- Lead-lined containers shield radiation down to a dose rate equivalent to CH waste
- Shipping, handling and disposal processes nearly identical to processes used for CH waste since 1999

LANL Framework Agreement

- Framework Agreement between DOE and State of New Mexico seeks to remove 3,706 m^3 of surface-stored TRU waste at Los Alamos National Laboratory by June 2014
  - Exceeded FY12 goal (800 m^3) by more than 100 m^3
  - FY13 goal (1,800 m^3) met on Sept. 26

Permit Modification Requests

- Class 3: Panel closure redesign, VOC monitoring program changes, repository reconfiguration
- Class 3: Modification of excluded waste prohibition

Questions & Answers