Environmental Management Cleanup Forum

Legacy Waste Program Overview

Ellen Gammon
N3B Los Alamos, Deputy CH TRU Program Manager

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LANL Primary Waste Streams (Simplified)

Low-Level Waste (LLW)

- Contains radionuclides
- Not classified as transuranic (TRU) waste due to radioactivity levels
- Through August 2025, of the original 1,883 containers stored above-ground at TA-54 at contract start, 30 remain

Mixed LLW (MLLW)

- Contains both hazardous and LLW waste
- Through August 2025, N3B has shipped off-site 11,006 cubic meters (m^3) of LLW/MLLW from the environmental remediation program.

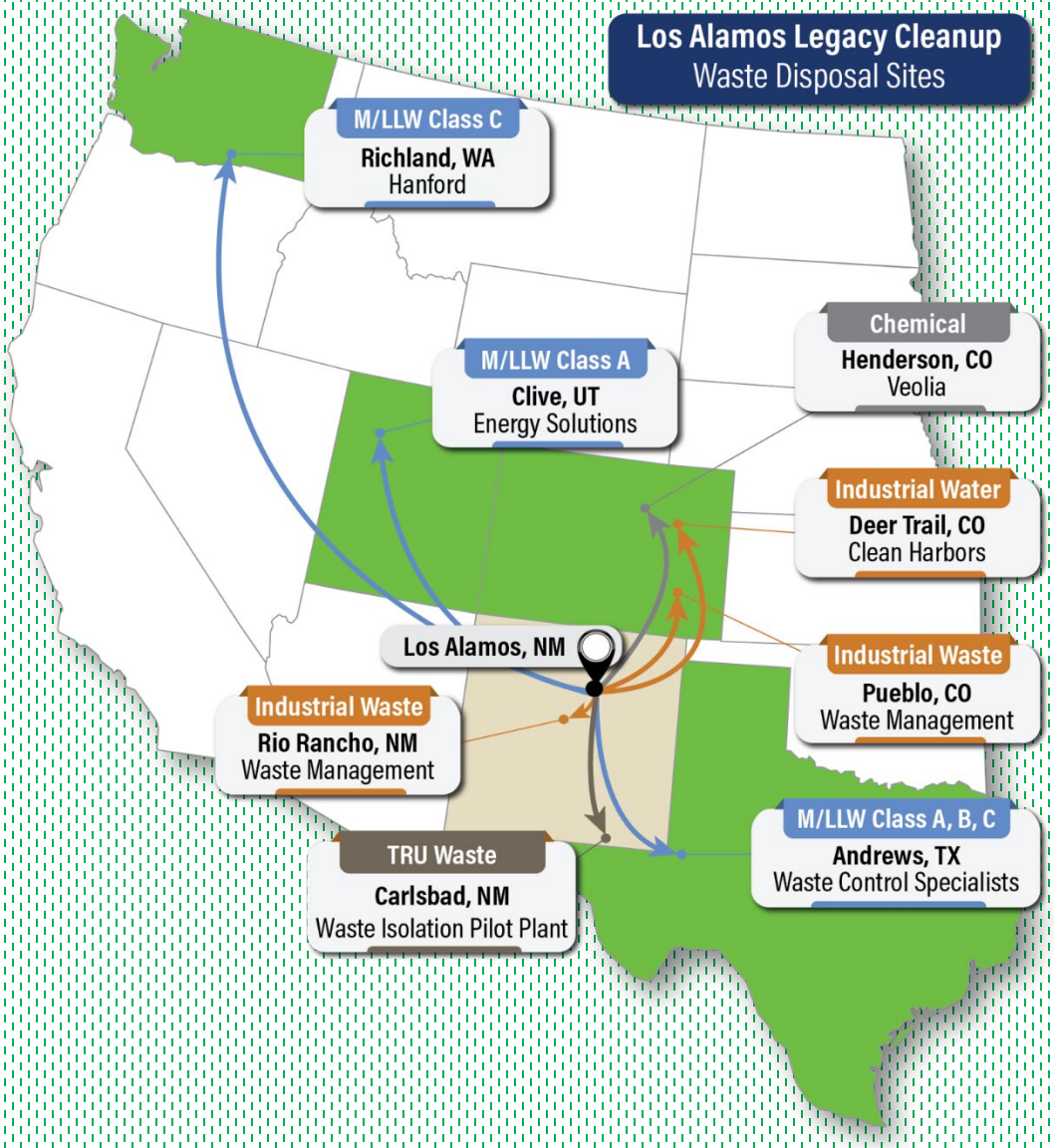
Non-Radioactive Waste Streams

- Hazardous
- Industrial
- Regulated non-hazardous
- New Mexico Special Waste

Transuranic (TRU) Waste

- Definition: Materials containing alpha-emitting radionuclides, with half-lives greater than twenty years and atomic numbers greater than 92, in concentrations greater than 100 nanocuries per gram of waste

Primary Waste Disposal Sites

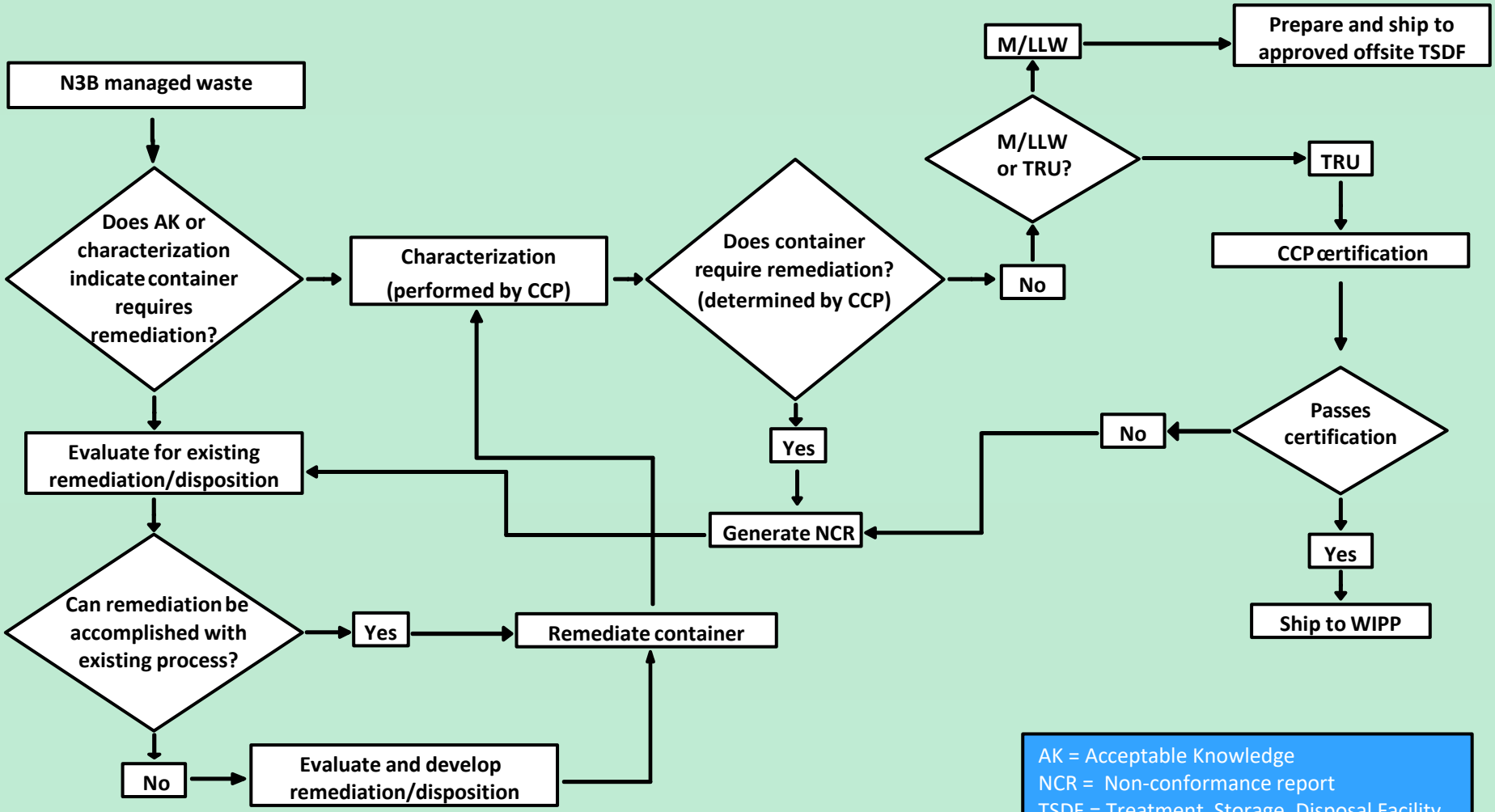


LLW is classified by its radiological hazard—Class A, B and C, with Class A being the least hazardous. Nuclear Regulatory Commission (NRC) regulations require progressively greater controls as the waste class and hazard increase.

For more information:
Code of Federal Regulations
Title 10, Section 61.55
"Waste Classification"

Aerial View of TA-54

Preparing Drums for Shipment: Multi-Step Process



AK = Acceptable Knowledge
NCR = Non-conformance report
TSDF = Treatment, Storage, Disposal Facility
CCP = Central Characterizations Project

Key Steps from Multi-Step Process

1. Does the drum require remediation
2. Can remediation be accomplished with existing processes
3. If the drum does not require remediation, Central Characterization Project (CCP) characterizes the drum
4. Characterization determines whether waste is TRU or LLW/MLLW, matches the waste description and does not contain prohibited items
5. Characterization includes real-time radiography or a visual examination along with non-destructive assay
6. If characterized as LLW/MLLW, prepare for shipment and ship off-site
7. If TRU waste, after characterization, CCP will authorize for shipment to WIPP

Glovebags: Reprocessing Waste from Legacy Drums

Daughter Drums: After Processing

Waste Compliance & Characterization

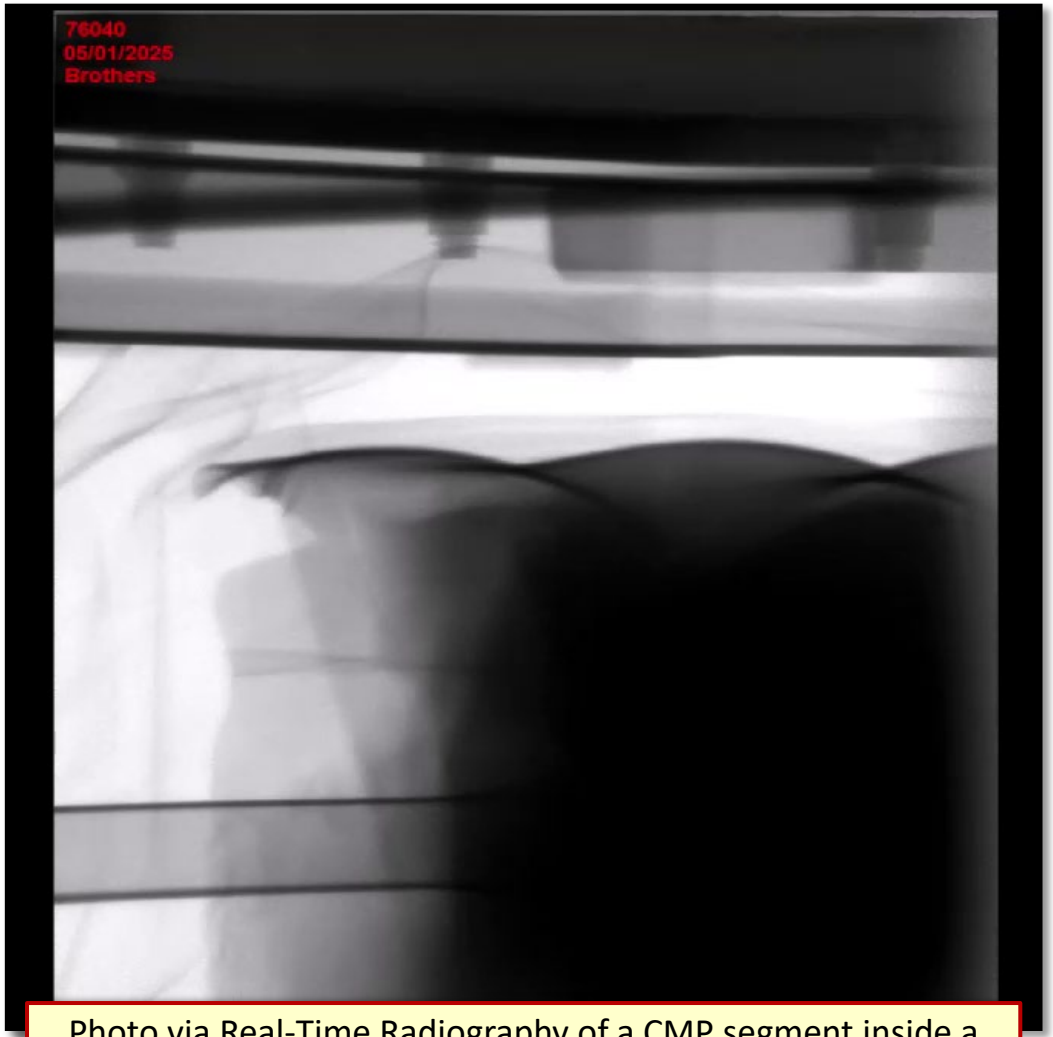


Photo via Real-Time Radiography of a CMP segment inside a Standard Waste Box - May 1, 2025

CMP characterization steps

1. **Real-Time Radiography** to identify noncompliant materials
2. **Flammable Gas Measurement** to ensure waste contents are not generating a hazardous atmosphere
3. **Radiological Assay** to determine whether material is TRU or low-level radioactive waste. Assay saves space at WIPP.

Real-Time Radiography (RTR)

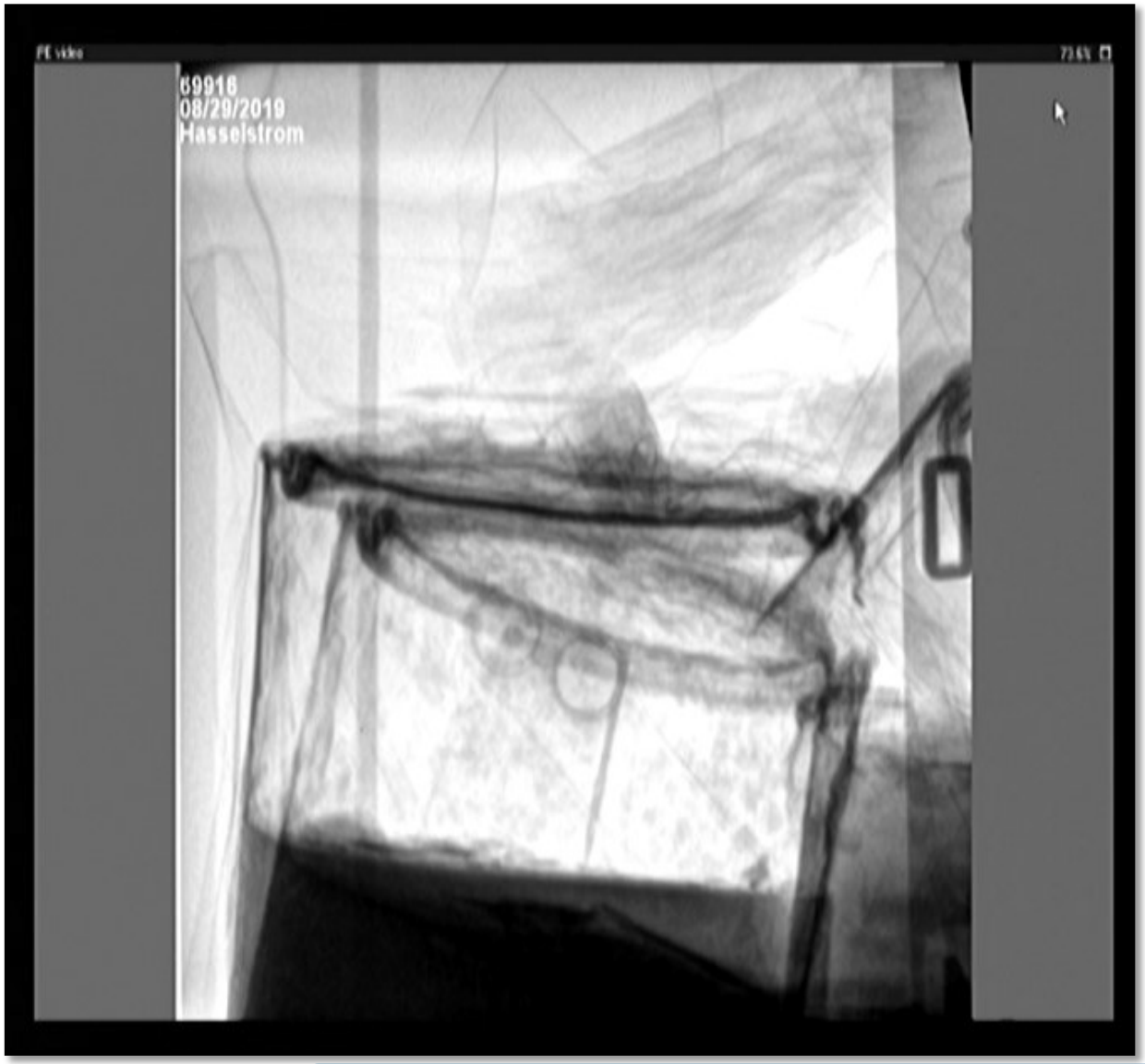


Photo of drums being assayed using RTR

Central Characterization Project (CCP)

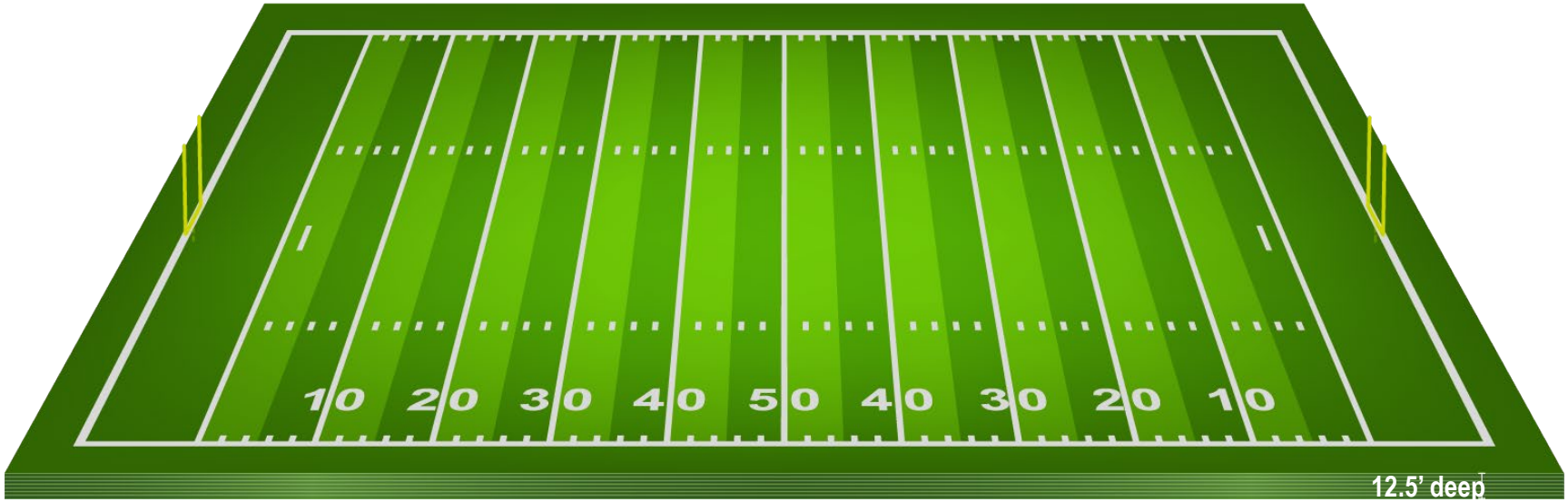
CCP was established to standardize and provide efficiencies in the characterization and certification process at DOE generator sites such as LANL

<u>Photo</u>

Mobile loading of Standard Waste Box containing Corrugated Metal Pipe segments

Total Waste Shipments Summary

Waste Shipped Off-Site From 4/30/18 to 8/31/25* = 20,390 cubic meters (m^3)



Filling up 1 football field 12.5 feet deep (bottom of goalposts are 10' high)

- TRU = 695 m^3
- Low Level/Mixed = 14,803 m^3
- Hazardous = 283 m^3
- Other Waste = 4,609 m^3

97,968 55-gallon drum equivalents

*Does not include water shipped