

3706 TRANSURANIC WASTE CAMPAIGN

Path to Success



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The Catalyst: Las Conchas Fire

- More than 150,000 acres burned in 2011
- Came to within 3.5 miles of TRU waste storage at LANL's Area G
- Heightened public concern and media attention on TRU waste
- New Mexico Governor Susana Martinez requested accelerated removal of above ground TRU waste from LANL
- DOE/NNSA and New Mexico Environment Department agree above ground TRU waste removal is highest environmental priority at LANL

Framework Agreement

Agreement between New Mexico Environment Department and DOE/NNSA for:

- Complete removal of 3,706 cubic meters of non-cemented above-grade by June 30, 2014
- Removal of all newly-generated TRU waste received at Area G during FY12 and FY13 by December 31, 2014
- Development of a schedule that includes pacing milestones for disposition of below-grade TRU requiring retrieval at Area G by December 31, 2012 (submitted December 10, 2012)
- Complete removal of above-grade cemented legacy TRU waste in an efficient and effective manner



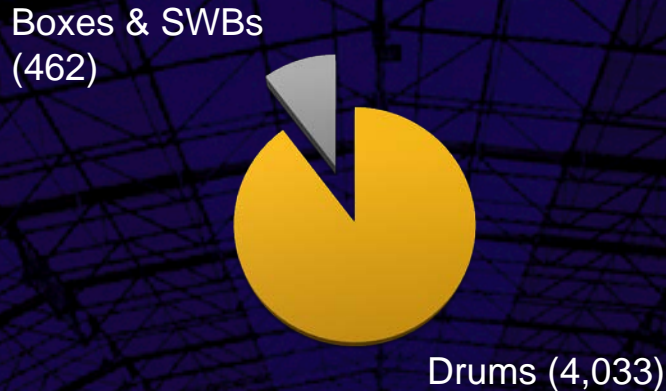
Campaign Inventory

- Total of 4,495 containers
- Total volume of 3,706 m³
- Total activity of 41,085 PE-Ci

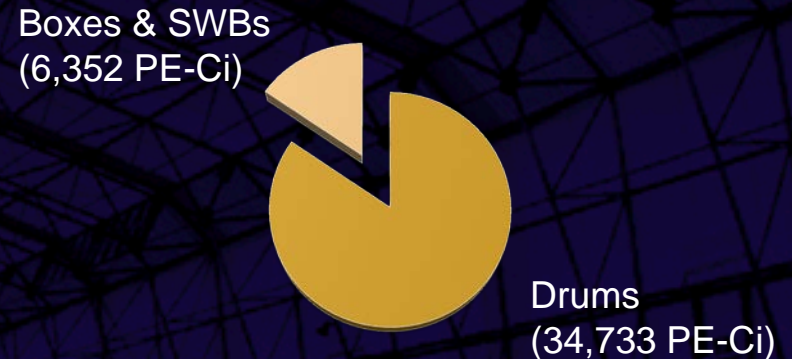
Volume of Container Types



Number of Containers

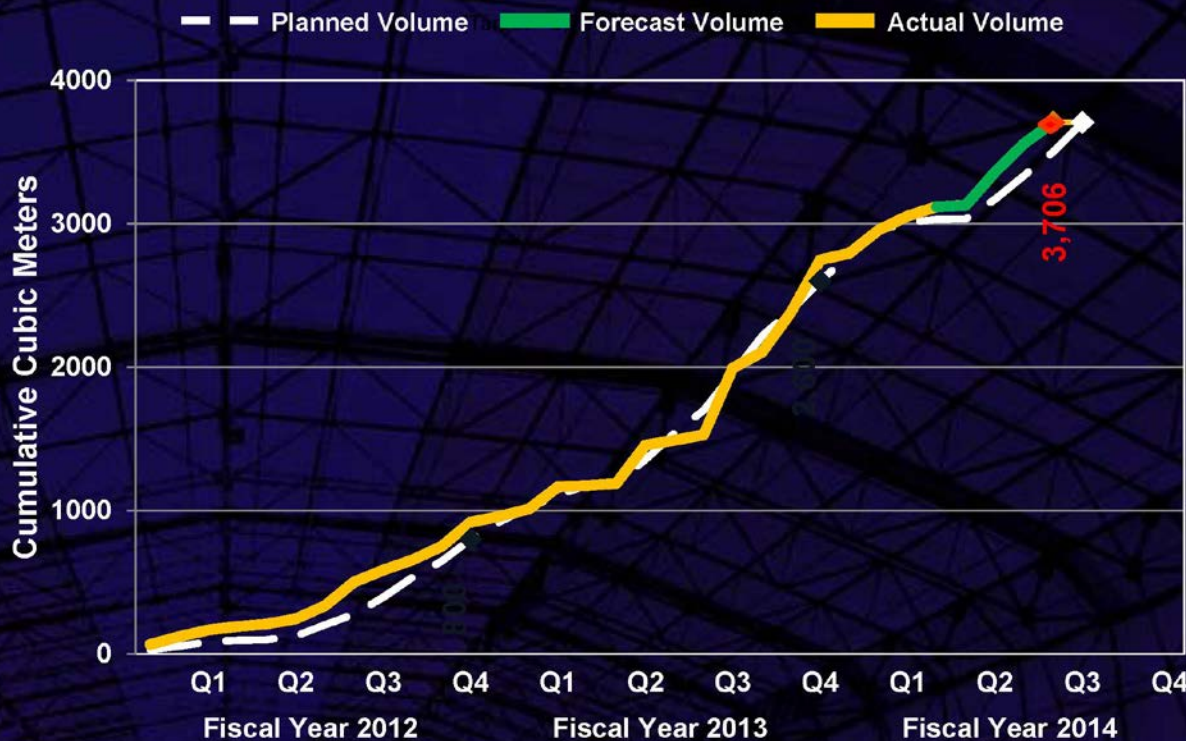


Activity of Container Types



Our Mission

“Clearing the Deck” of TRU waste during
FY s 2012, 2013 and 2014



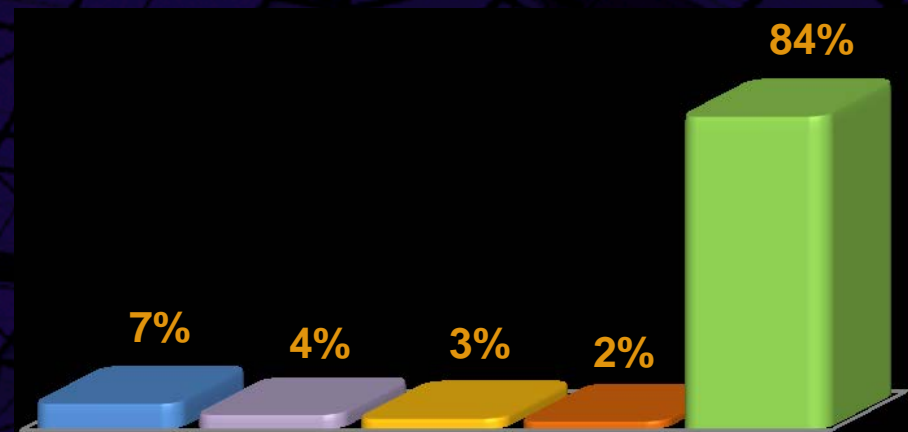
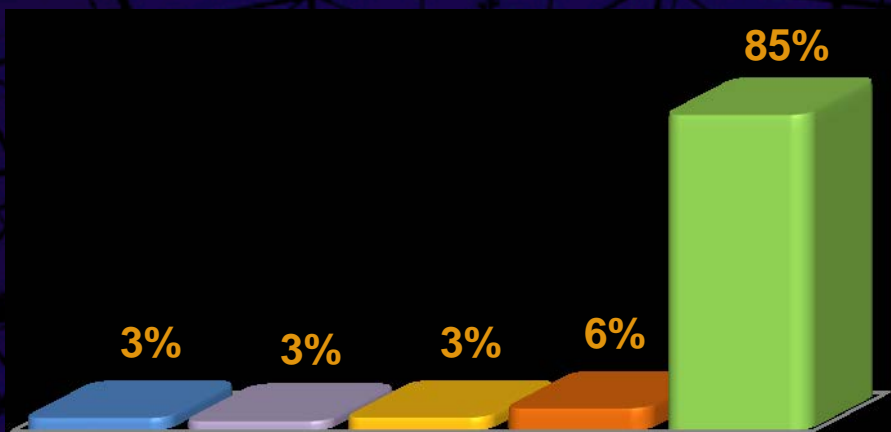
- 3,706 cubic meters of legacy waste
- 4,495 containers
- Ship 41,085 cumulative plutonium-239 equivalent curies of MAR off site

3,706 goal vs. progress thru 2/2/2014

Status of 3,706 Campaign

**MAR, Total 3,706 Campaign
(Cumulative Goal 41,085 PE-Ci)**

**Volume, Total 3,706 Campaign
(Cumulative Goal 3,706 m³)**



Status on 2/2/2014

Status on 2/2/2014

■ Remediation Planned
 ■ In Characterization
 ■ In Certification
 ■ Approved in WDS
 ■ Removed/Shipped

Key Factors in Achieving High Performance

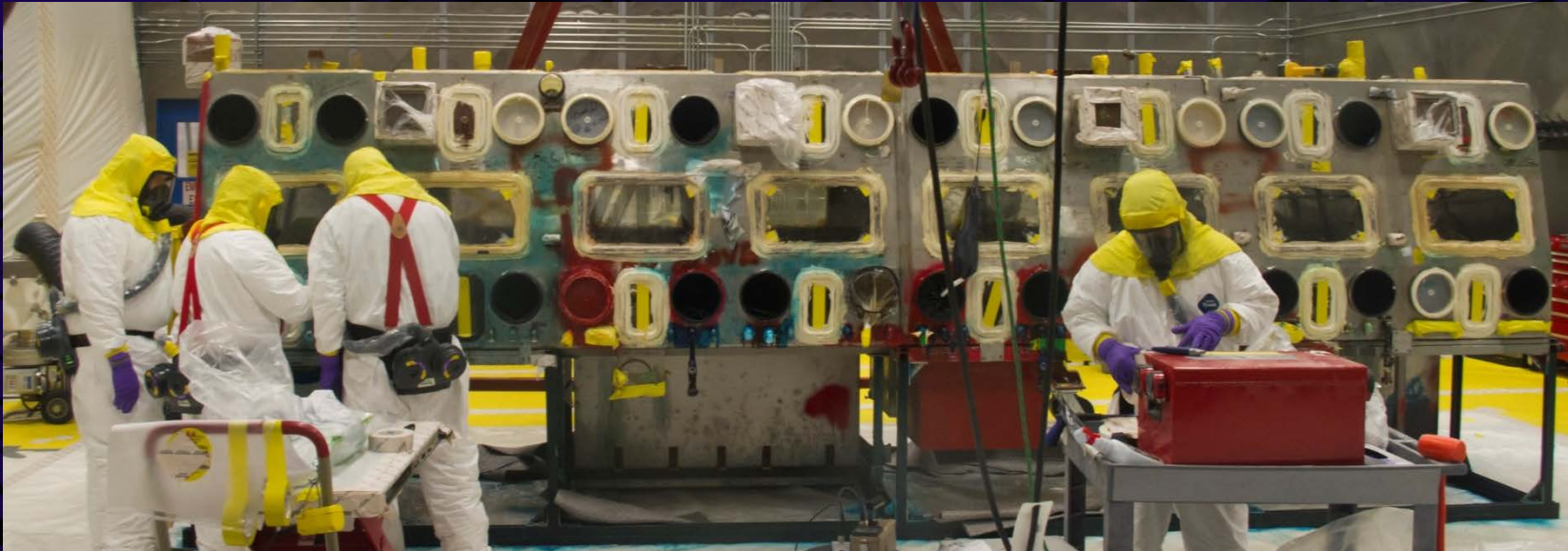
- Strong focus on safety and compliance
- Organizational changes to establish sub-projects for critical campaign elements and to integrate facility operations
- Development of integrated and detailed project management schedule
- Collaboration with stakeholders



We are safe



Key Factors in Achieving High Performance



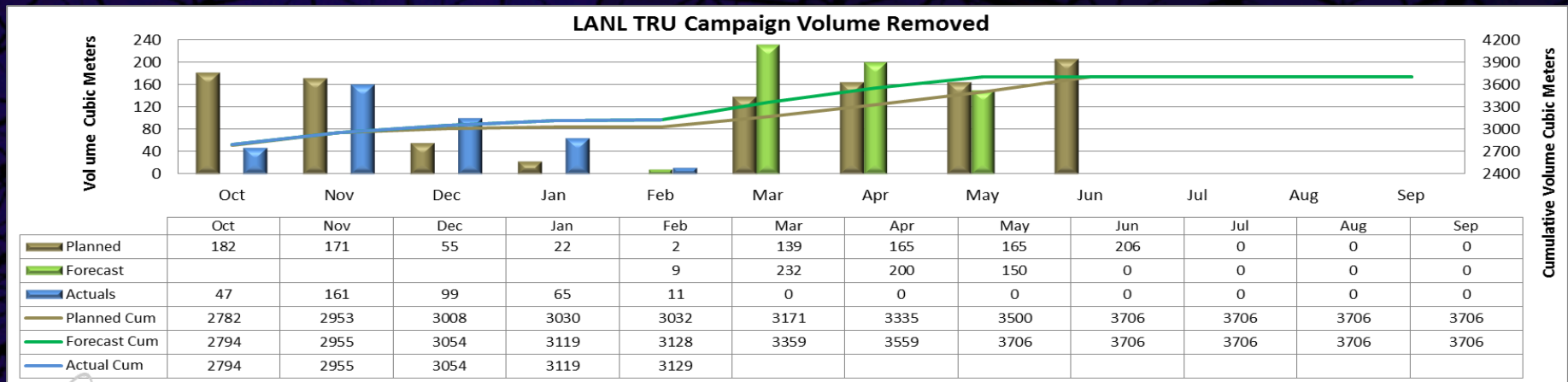
- Upgraded remediation, characterization and shipping capabilities
- Extended work shifts for remediation
- Constant attention to potential issues and progress
- Constant communication with all organizations involved
- Innovative approaches to waste processing

LANL 3706 Waste Disposition Project

Lessons Learned and Innovations



Inventory Driven Management Planning, Execution and Measurement



Inventory Driven Management Planning, Execution and Measurement

Planning - Defining Project Scope

- Scope defined based on specific inventory
- Stakeholder agreement on scope
- Transparent communications on scope
- Plan with a vision of the end

3,706 Campaign Inventory (Oct. 1, 2011)

| | # Containers | Volume (m ³) | Activity (PE-Ci) |
|---------------------|--------------|--------------------------|------------------|
| Drums | 4,035 | 909 | 35,421 |
| Oversize Containers | 249 | 2,397 | 3,092 |
| SWBs | 211 | 400 | 2,572 |
| TOTALS | 4,495 | 3,706 | 41,085 |

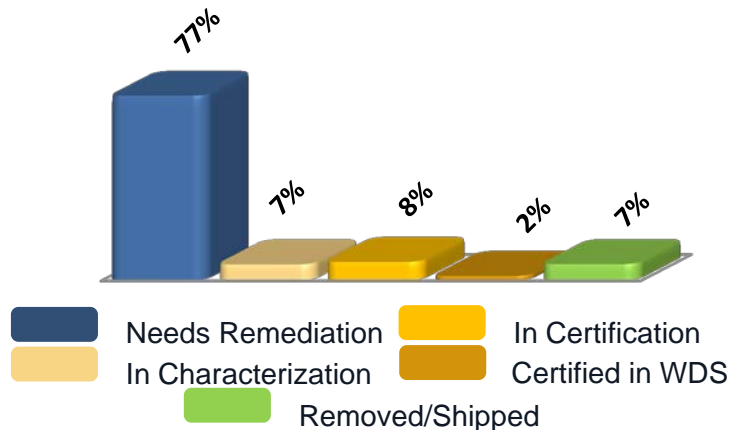
Inventory Driven Management Planning, Execution and Measurement

Planning for Execution

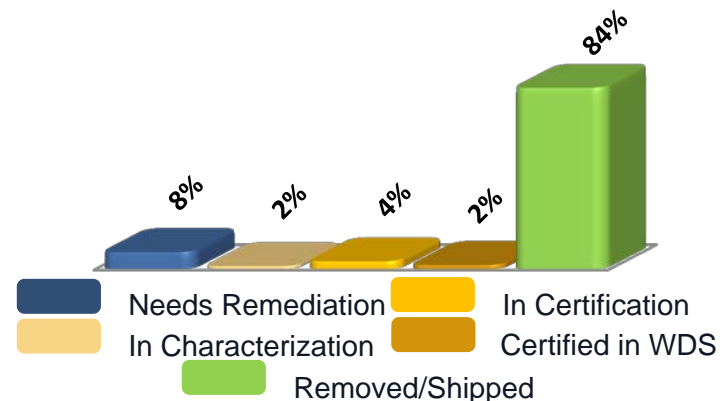
- Simple inventory process steps established
- Organizational structure adjusted to align with process steps
- Waste organized into inventories with similar disposition paths – Solution Packages
- Container management database organized by Solution Package and process steps
- Schedule developed based on processing waste through process steps
- Waste disposition output based on processing schedule

Drums

Total 3,706 Campaign



Total 3,706 Campaign



Inventory Driven Management Planning, Execution and Measurement

Execution – Commit to the Plan

- Critical path identified – open container remediation
- Solution Packages logically ordered to minimize remediation facility downtime
- Waste physically organized in storage based on planned processing
- Facility modifications, safety basis changes and readiness needs identified early and planned early
- Actual waste processing rates compared to planned processing rates for feedback loop
- Risk management – redundant crane Installed for loading shipments



Document Control Number

Solution Package Scope Definition

Solution Package Identifier - Rad Boxes <3.4 cubic meters (#9)

Developed By: _____ Date _____

CCP Reviewer: _____ Date _____

Approved By:

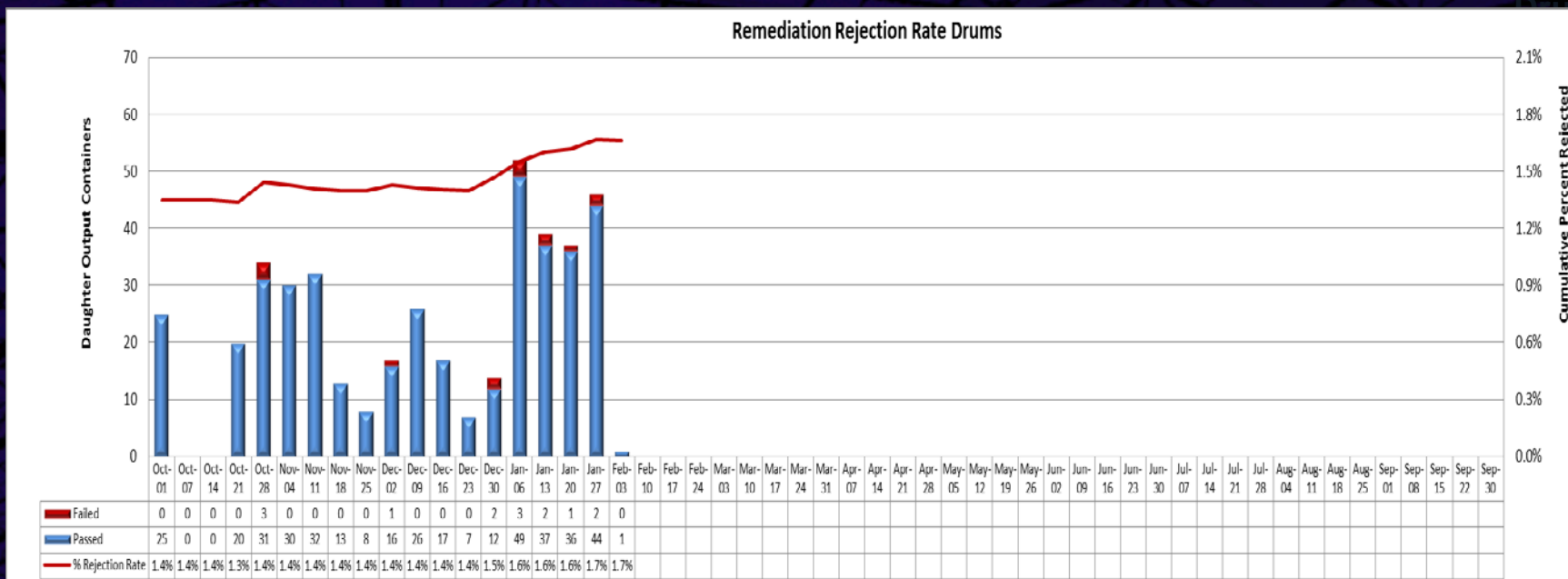
| | | |
|---------------------------|-------|-------|
| Planning & Tech Solutions | _____ | _____ |
| Disposition Project Owner | _____ | _____ |
| Shipping and Safe Storage | _____ | _____ |
| ROD | _____ | _____ |
| Projects / Services | _____ | _____ |
| LTP Program | _____ | _____ |



Inventory Driven Management Planning, Execution and Measurement

Measurement – Metrics of Value

- Actuals vs. planned
- Continuous validation of key assumptions
- Identification and understanding the leading indicators
- Transparent communication of good and bad news – soon and often



Inventory Driven Management Planning, Execution and Measurement

Lessons Learned

- **Waste container processing is not an exact science**
 - Plan for the unknowns and plan to adjust
 - Value of pre-screen NDA and NDE vs historical data
 - Legacy data is never 100%
- **Integrated planning with teaming partners**
 - Teamwork between LANL, CCP, LASO and CBFO best ever
- **Communication of waste processes to those that are experts in other fields. Enabling advocates**
 - Community leaders
 - Elected officials
 - Neighboring pueblos
 - Regulators
- **Empowering the workforce**
 - Significant contributions and innovative solutions made by individuals working outside their comfort zone.

| Waste Category | Solution Packages |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AG Any Solid Group | 3,706 Goal Misc. Solids |
| AG Any Waste Group | FY11 NNG AG Any Waste Group No Issues |
| AG Cement Cans | AG Cement Cans No Issues |
| AG Debris Boxes | Corrugated Metal Boxes 4x4x6 Boxes < 8.2 m3 AG Boxes 412 <8.2 m3 Haz Cat 3 Boxes 412 > 3.4 to < 8.2 m3 Haz Cat 3 Boxes 412 < 3.4 m3 Haz Cat 3 Boxes 375 > 8.2 m3 Inplace Processing Large Boxes Metal Boxes > 4x4x6 Rad Boxes < 3.4 m3 |
| AG Debris Drums | >200 mR/Hr Misc. Debris Drums Container Issues Misc Issues Multiple Issues NDA-Rad NDA-Uncertain No Issue Overweight PID in Matrix Tritium Unvented WIPP WAC – Chem Debris Drums > 300 PE-Ci OSRP Issue Drums Salt Waste |
| AG Debris SWB DL | SWB-DL |
| AG Debris SWB OP | SWB-OP Debris |
| AG No Waste Stream | AG No Waste Stream No Issues AG No Waste Stream Suspect TRU AG No Waste Stream Unvented |

Inventory Driven Management Planning, Execution and Measurement

Innovations

- Solution package concept
- Measurement of waste disposition using parent container volume
- Database management of waste container lineage
- Use of Six Sigma modeling to validate processing strategy and key assumptions
- Processing of low MAR TRU inventory while demonstrating readiness to process higher MAR TRU inventory
- Use of DOE-STD-1027 supplemental guidance on HAZ Cat 2 vs HAZ Cat 3 processing for 425.1D readiness determination
- Use of Surface Contaminated Object rules to allow decon of waste items to less than TRU
- Process difficult waste early and throughout campaign
- Contracting LLW disposal through federal IDIQ





3706 TRANSURANIC WASTE CAMPAIGN

New Mexicans working together to meet a national environmental challenge

