

SAND 2000-3871C

Waste Reductions & Recycling Improvements

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AT SANDIA NATIONAL LABORATORIES
IN ALBUQUERQUE, NEW MEXICO
2009-2010

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Sandia is a multiprogram laboratory operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94OR21400.

“Zero Waste to the Landfill by 2025”

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- Goal adopted by Pollution Prevention team within Sandia/New Mexico in 2008
- Not using a landfill leaves these options:
 - ❖ Waste Reduction
 - ❖ Increased diversion
 - ❖ Reuse
 - ❖ Recycle
 - ❖ ~~Landfill~~
 - ❖ Waste-to-Energy Incineration

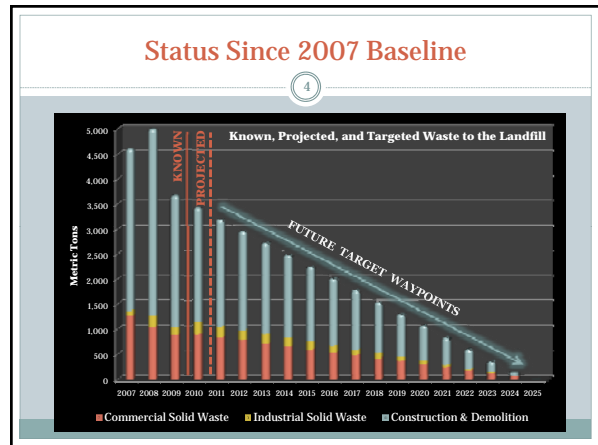
Scope of 2025 Goal

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- Commercial Solid Waste
 - ❖ Office Waste
- Industrial Solid Waste
 - ❖ Non-hazardous laboratory & operations waste
- Construction & Demolition Waste

Not in Scope:

- Hazardous Waste (RCRA) 
- Radioactive Waste 

Know Thy Waste

⑤

Approaches

Commercial Solid Waste

- Waste Audits
 - ❖ At largest office building
 - ❖ At medium off-site office building & museum for visiting researchers
 - ❖ At small office building (for LEED®)
 - ❖ At on-site cafeteria





Recycle Stream Assessment

⑥

Approaches

Commercial Solid Waste

- Cardboard
 - ❖ 25% was being recovered from trash rather than through recycle dumpsters ... so...
 - ❖ Mapped out all dumpsters in GIS
 - ❖ Removed excess trash dumpsters
 - ❖ Added more cardboard where missing
 - ❖ Upgraded cardboard dumpster sizes to reduce overflow to trash
 - ❖ Changed dumpster styles at docks for easy loading




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Recycle Stream Assessment

Approaches
Commercial Solid Waste

Also:
#1-2 bottles
#1 transparencies
#2 natural bottles
#2 Tyvek®
#7 miscellaneous

- **Plastics**
 - ❖ Identified top five generators of clean shrink wrap for collection/baling
 - ❖ Collect clean, natural #5 (PP) rigid containers from a semiconductor fabrication facility
 - ❖ Bought a packing foam compactor
 - × #4 LDPE/EPE
 - × #6 EPS/Styrofoam®




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Recycle Stream Assessment

Approaches
Commercial Solid Waste

- **Alkaline/Carbon Zinc Batteries**
 - ❖ Launched Earth Day 2009
 - ❖ ~190 collection points
 - ❖ ~800 pounds diverted
 - ❖ Includes: AAAA, AAA, AA, C, D, N, 9V and alkaline button cells
 - ❖ Primary Constituent: Scrap Metal



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Industrial Solid Waste (ISW)

Approaches
Industrial Solid Waste

- **What is ISW?**
 - ❖ Only 4-7% of total waste landfilled
 - ❖ 69% in FY09 was solid waste and C&D waste contaminated with beryllium
 - ❖ Remainder:
 - × Non-regulated chemicals
 - × Contaminated oils
 - × Contaminated soils
 - × Coolants
 - =1,320 semi-unique waste streams

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Path Forward

Approaches
Industrial Solid Waste

- **Become educated about beryllium**
- **Prioritize remaining waste streams**
 - ❖ Soils contaminated with oil
 - ❖ Oil/water mixtures
 - ❖ Coolants
- **Team with generators and waste processors to reduce quantities and improve handling**





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Building – Rebuilding – Unbuilding

Approaches
Construction & Demolition Waste

- C&D Waste down 30% - 2008/09
- C&D Recycle Rate: 89% in 2009
- Remaining 11%...?

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Major Factors

Approaches
Construction & Demolition Waste

- **Green Contractual Language**
 - ❖ Better product procurement
 - ❖ Construction Specifications
 - ❖ Active monitoring on large, new construction projects
 - ❖ Thorough process for demolition
- **Known Problem**
 - ❖ Untracked small remodel jobs

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Moving Forward

Problems

- **Recycling creates jobs**
 - ✦ Funding?
 - ✦ Capacity?
- **American independence**
 - ✦ You can lead a horse to water, but...
- **Undeveloped markets**
 - ✦ Refurbishment of furniture
 - ✦ Plastics