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Cost Recovery for Waste Processing at Los Alamos

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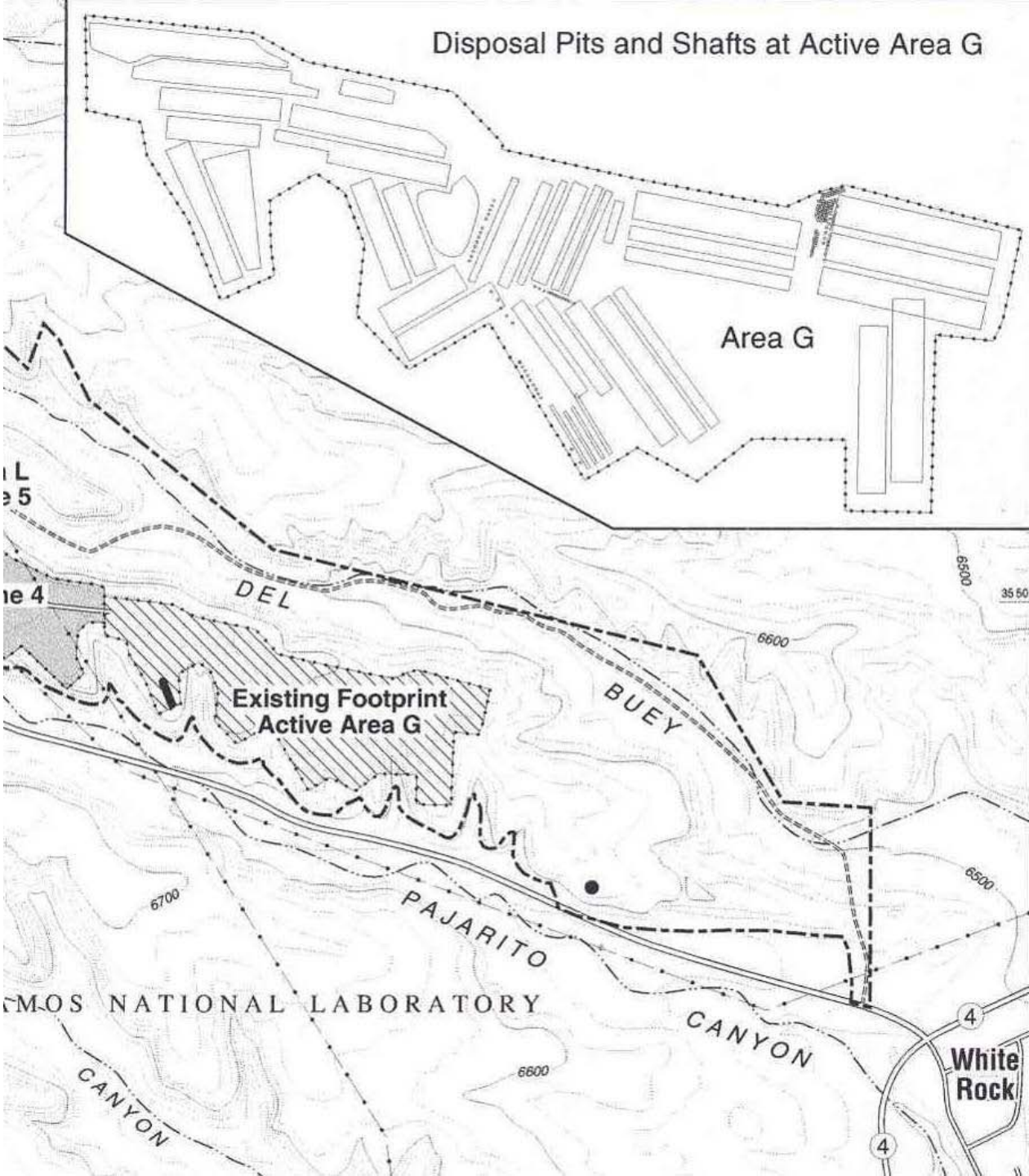
Los Alamos NATIONAL LABORATORY

Technical Area-54, Material Disposal Area G

TA-54, Area G is the primary disposal site at Los Alamos for radioactive wastes. Complete closure is scheduled for early FY2016.

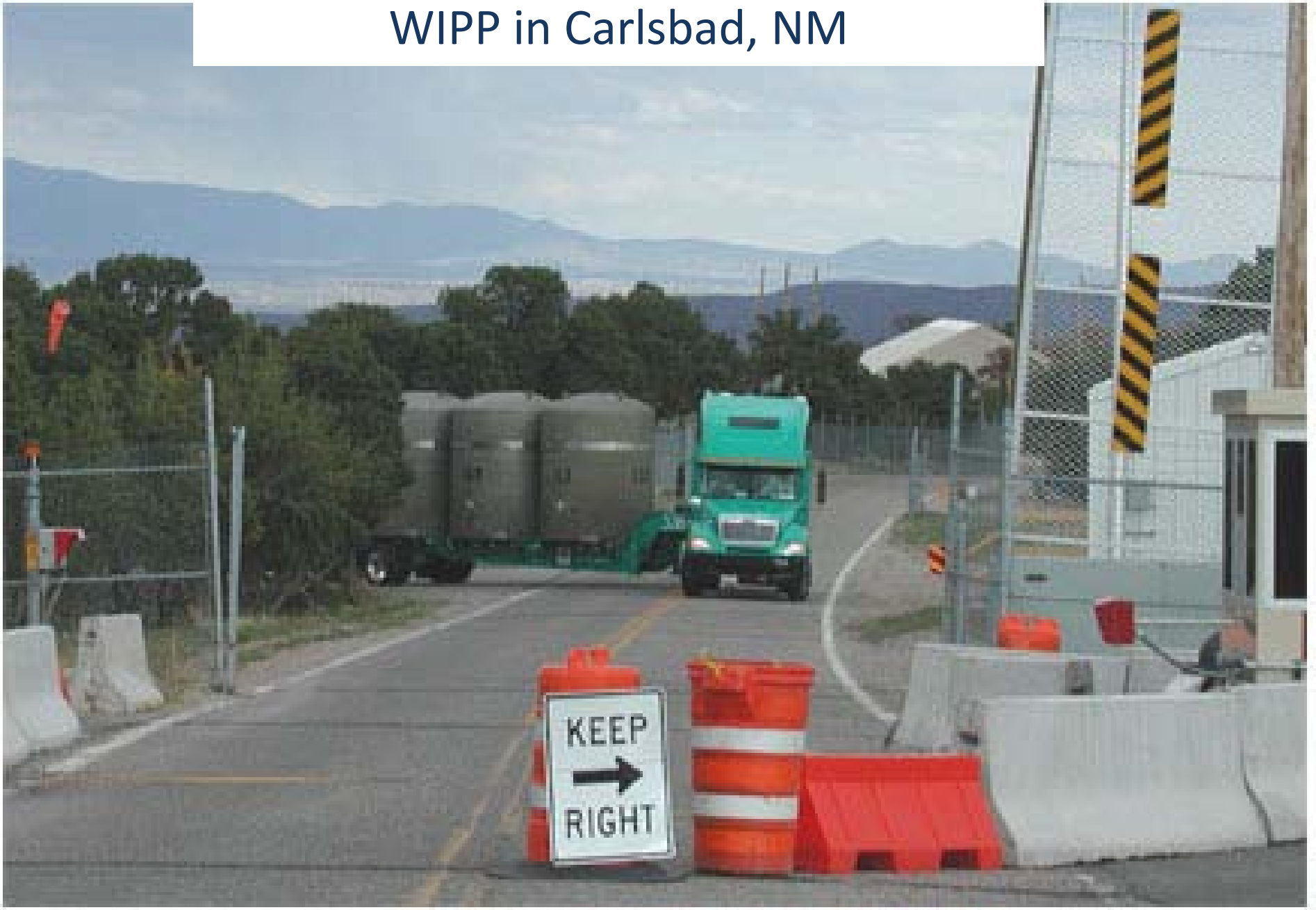


Low-Level Waste is buried in pits at Tech Area-54, Material Disposal Area G

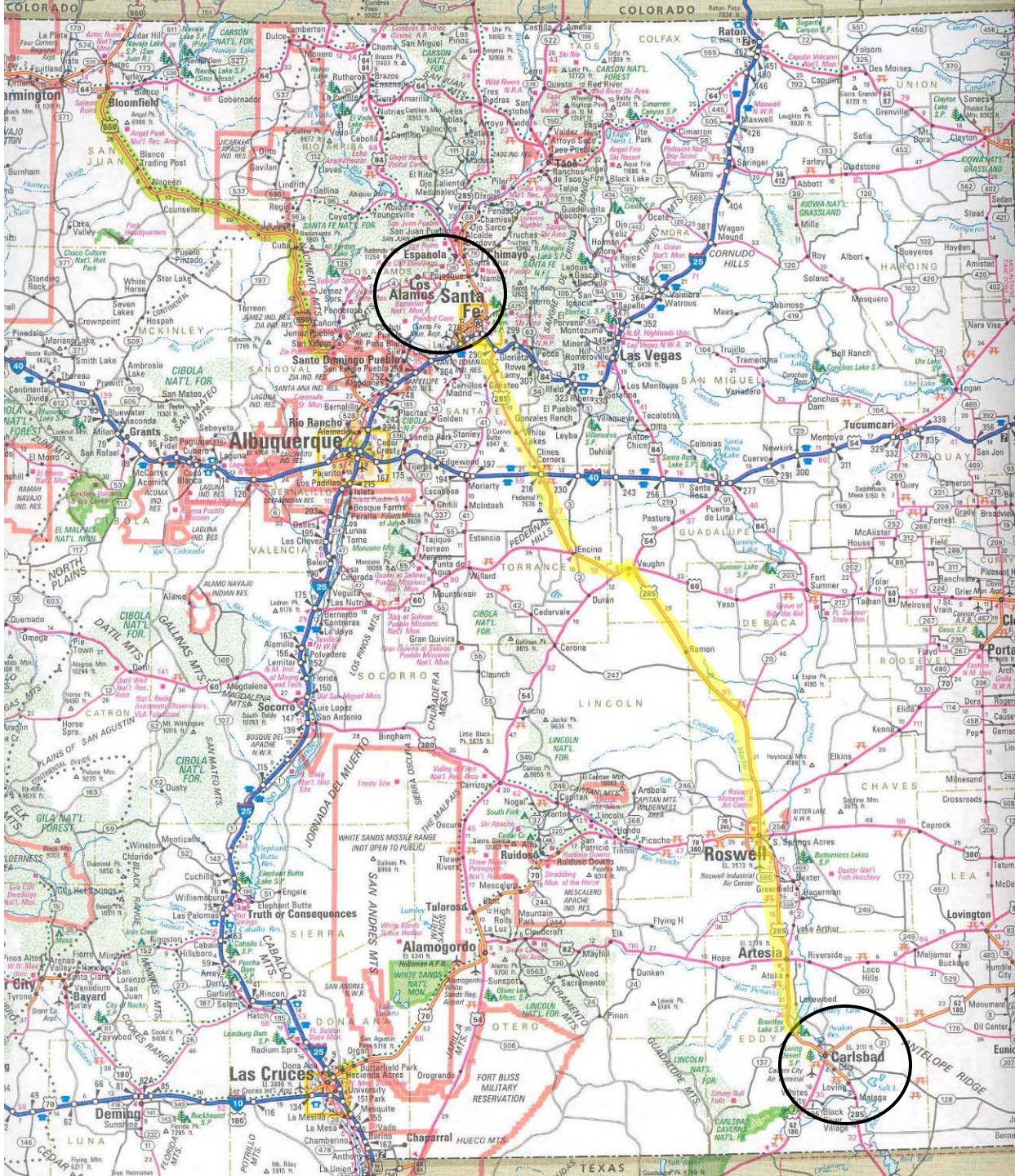
Inside a TRU Waste Storage Dome

Loading TRU drums into TRUPACT II containers for transport to WIPP

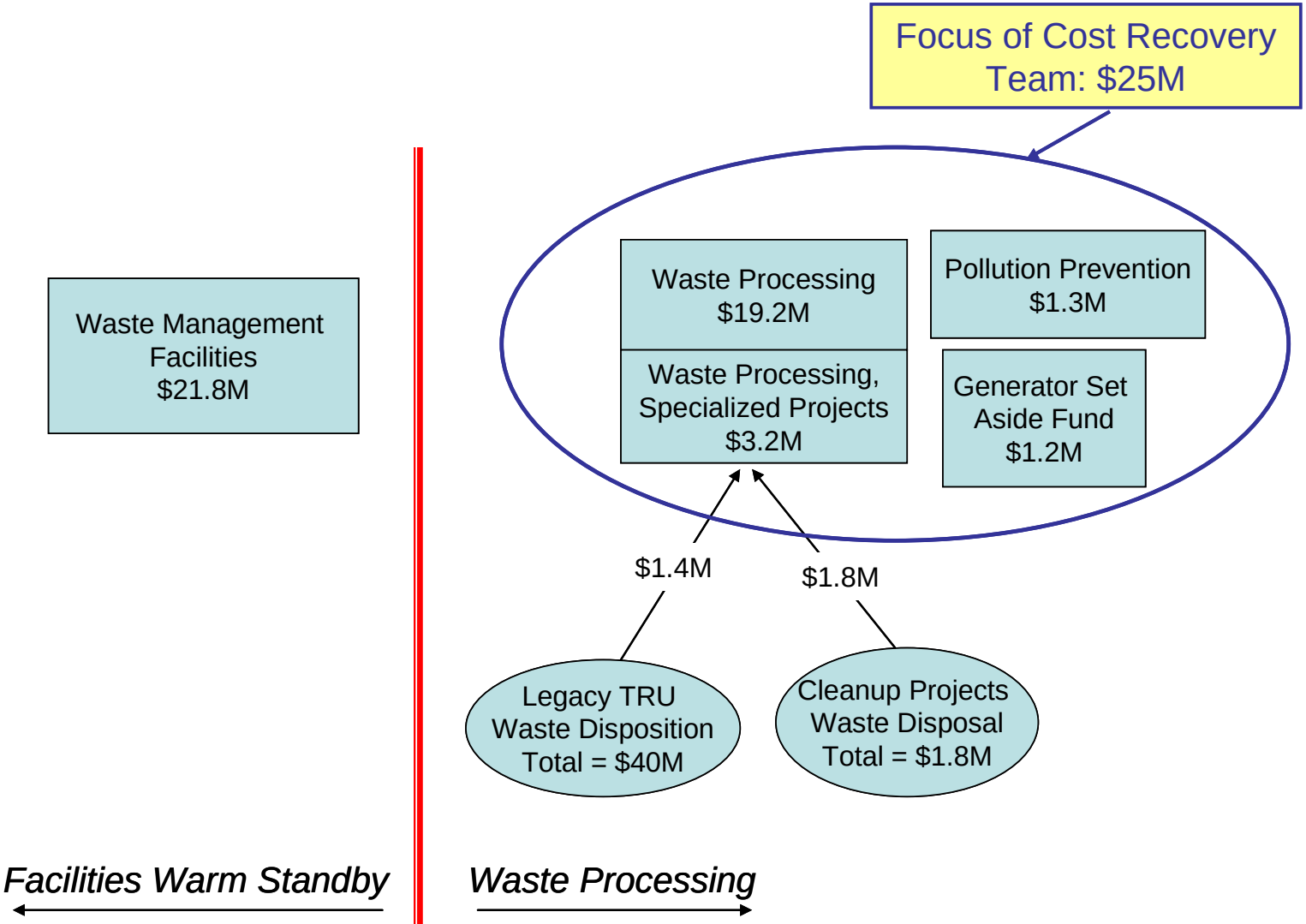
WIPP truck leaving TA-54 on its way to WIPP in Carlsbad, NM



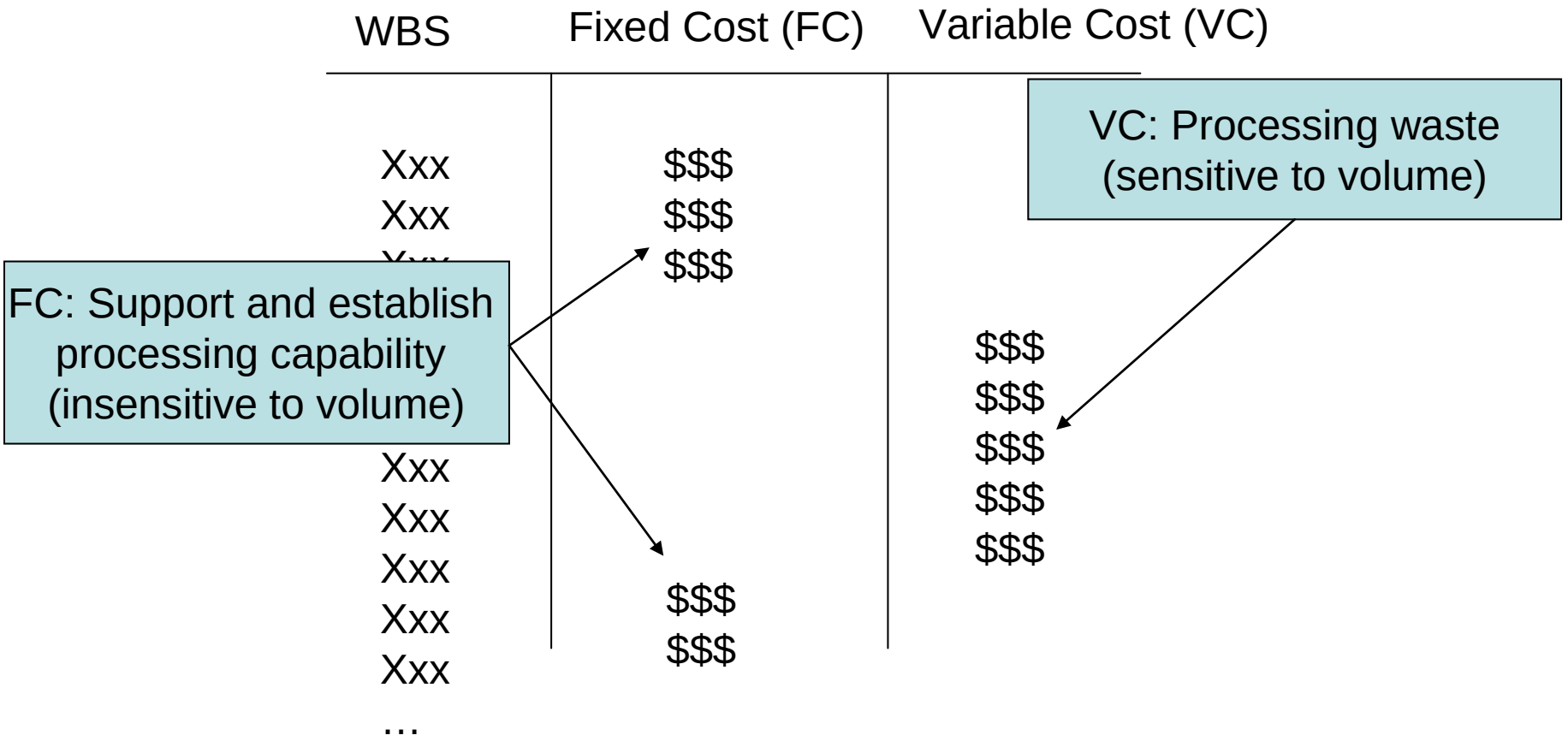
The WIPP route follows Highway 285 from Santa Fe to Carlsbad, NM (300 miles).



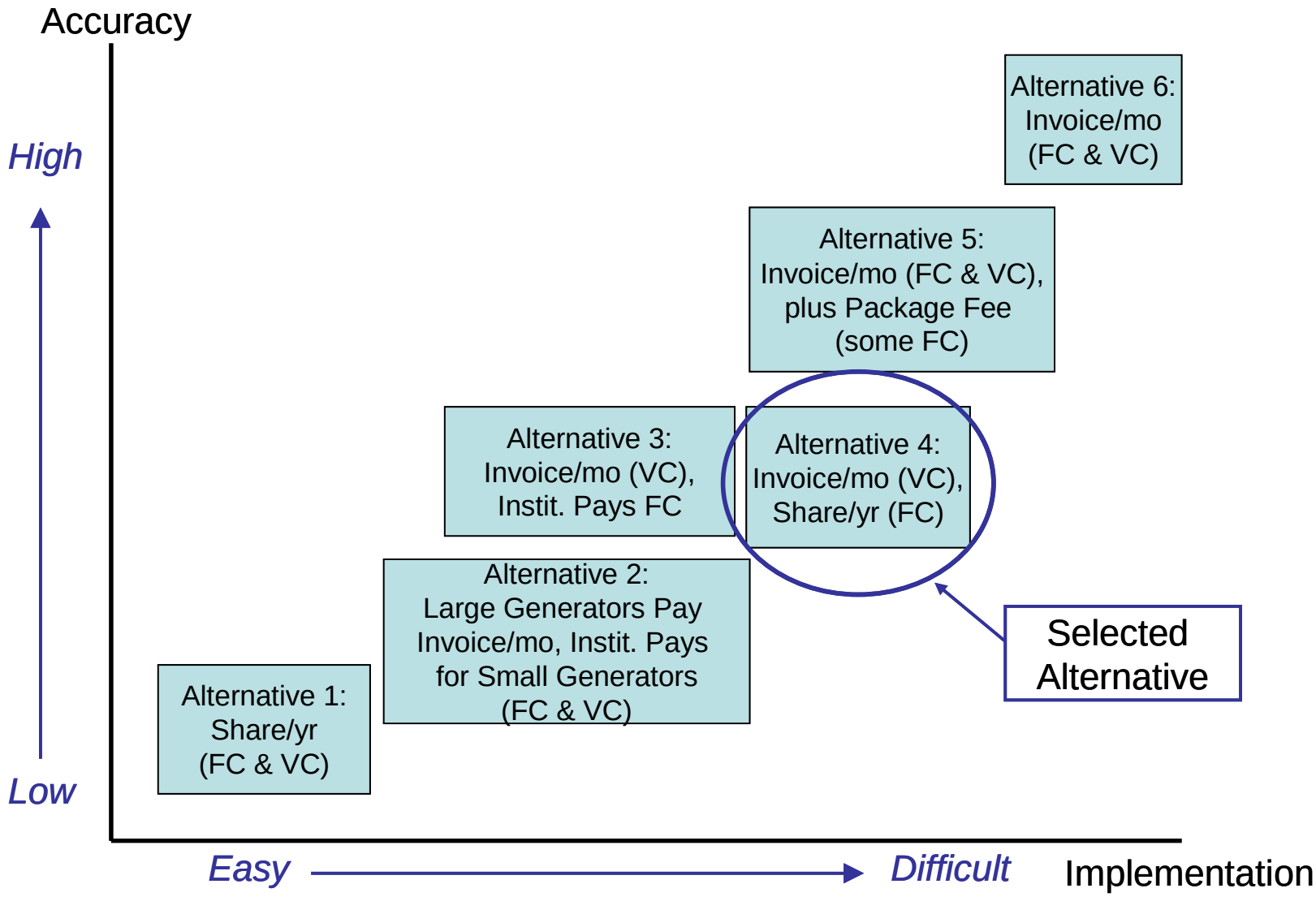
Waste Management at Los Alamos in FY2008 (fully burdened costs)



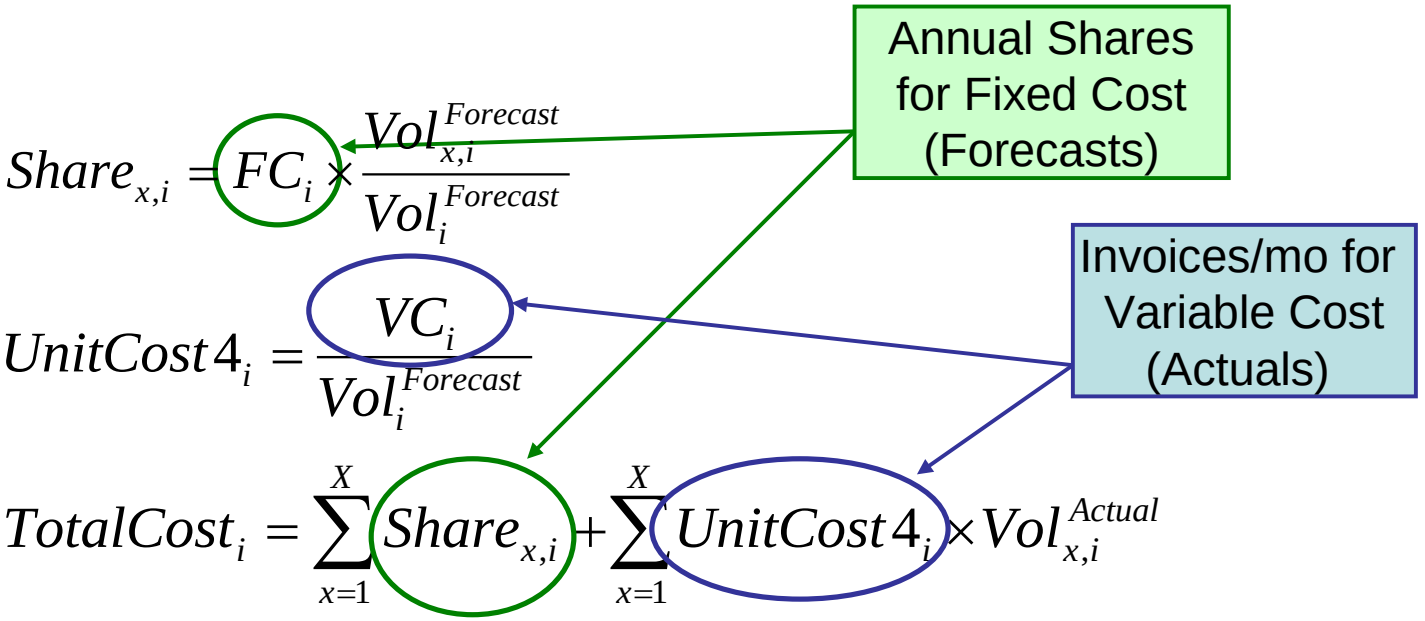
Waste Processing Cost Basis: Definition of Fixed and Variable Cost



The Team Considered Six Alternative Cost Recovery Models



The Two Components of Alternative 4: Annual Cost Shares and Monthly Invoices



where $Share_{x,i}$ = annual waste processing fee paid by generator x for waste i,
FC_i = annual fixed cost for processing waste i,
$Vol_{x,i}^{Forecast}$ = annual volume forecast of waste i for generator x,
$Vol_i^{Forecast}$ = annual volume forecast of waste i over all programs,
$UnitCost4_i$ = Alternative 4 cost per unit volume for processing waste i.
VC_i = annual variable cost for processing waste i,
$Vol_{x,i}^{Actual}$ = actual annual volume of waste i generated by generator x, and
$TotalCost_i$ = annual cost to process all Los Alamos waste i,
i = waste type by stream (LLW, MLLW, haz/chem, RLW, TRU) and category (1 to 8 depending on waste stream),
x = waste generator, (e.g., pit manufacturing, RTBF, etc.), and
X = total number of waste generators.

Implementation Issues: Annual Cost Shares

1. Need incentives to reduce FC

$$Share_{x,i} = FC_i \times \frac{Vol_{x,i}^{Forecast}}{Vol_i^{Forecast}}$$

2. Need accurate volume forecasts
- ready by middle of prior year
- prevent cheating

$$TotalCost_i = \sum_{x=1}^{X} Share_{x,i} + \sum_{x=1}^{X} UnitCost4_i \times Vol_{x,i}^{Actual}$$

3. Who must pay a share? (e.g., small, variable generators)

4. Can a new generator "join" mid-year?

Implementation Issues: Monthly Invoices

$$UnitCost4_i = \frac{VC_i}{Vol_i^{Forecast}}$$

$$TotalCost_i = \sum_{x=1}^{X} Share_{x,i} + \sum_{x=1}^{X} UnitCost4_i \times Vol_{x,i}^{Actual}$$

1. Need accurate waste tracking system

2. Need strong cost accounting verification

3. How to handle over- or under-collection?

4. Disruptive to adjust unit cost mid-year

Conclusion: Implementation Realities from Idaho and Sandia

$$Share_{x,i} = FC_i \times \frac{Vol_{x,i}^{Forecast}}{Vol_i^{Forecast}}$$

1. Need accurate volume forecasts

5. Balance data fidelity with ease of implementation (INEL)

$$UnitCost4_i = \frac{VC_i}{Vol_i^{Forecast}}$$

2. Need accurate waste tracking system

$$TotalCost_i = \sum_{x=1}^{X} Share_{x,i} + \sum_{x=1}^{X} UnitCost4_i \times Vol_{x,i}^{Actual}$$

4. Use a large pool of generators (SNL)

3. Need strong cost accounting verification