



New Mexico Recycling Conference

CITY OF LAS CRUCES COMPOSTING FACILITY


PRESENTERS: **Tom Parker, PE, BCEE**
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June 16, 2010




Agenda

- Site/Facility History
- Feedstock Material
- Facility Operations
- Tonnage and Cost Summary
- Lessons Learned and Challenges



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SITE /FACILITY HISTORY



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Site/Facility History


- Open Monday - Friday 8-4, Saturday 9-3
- 40 Acre Borrow Pit - 5 Acre Composting Area
- Located Adjacent to Old Foothills MSW Landfill
- Landfill Closed in 1996
- Continued to Accept Clean Fill Material at Site
- Began Chipping Yard Waste in 1997 at Recycling Center and Hauled to LF



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Site/Facility History

- Moved Entire Operation to Landfill - 2006
- 1997 to 2004 - Placed Chipped Material Over "Closed" Landfill
- Re-closure Plan Removed Chipped Material From "closed" sideslopes
- Contractor mixed chipped material with 6" vegetative layer



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Aerial Photograph



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FEEDSTOCK MATERIAL

CDM 7

Feedstock Material

- All Material Is Weighed and Recorded at Scalehouse
 - Pickups (30%)
 - Pickups with Trailers (70%)
- City Allows Grass, Leaves and Tree Trimmings (Less Than 5' In Length and 5" Diameter)
 - 60% Brush/Tree Limbs
 - 30% Leaves/Grass
- Customers
 - Residential (40%)
 - Commercial (60%)


CDM 8

Feedstock Material (continued)

- Scalehouse Operator Performs Inspection Before It Enters Composting Area
- Process Approximately 4,000 Tons Per Year (13 tpd)

CDM 9

Feedstock Material



CDM 10

Feedstock Material



CDM 11

FACILITY OPERATIONS


CDM 12

Facility Operations

- **One Scale Attendant**
 - Screen loads
 - All material is weighed and recorded at scalehouse
 - \$\$\$ Transactions
- **3 Heavy Equipment Operators**
 - Perform other duties at Facility
- **CAT 966 Loader or John Deere 444j**
- **Morbark Wood Hog Model 3600 - Over 90% Usage**
- **Universal Tub Grinder - Used As Backup**
- **3,500 Gallon Water Truck**


CDM 13

Equipment - Morbark



CDM 14

Equipment - Universal



CDM 15

Operations

- **Material Is Chipped and Placed In Rows 8' high x 8' Wide - Length Varies**
- **Turn and Add Water Every 3 to 4 Weeks**
- **Check Temperature Every 1 to 2 Weeks**
- **If Temperature Is Less Than 100 Degrees**
 - Turn and water pile
- **Average Composting Time**
 - 4 to 6 month period - winter
 - 2 to 3 month period - summer

CDM 16

Operations

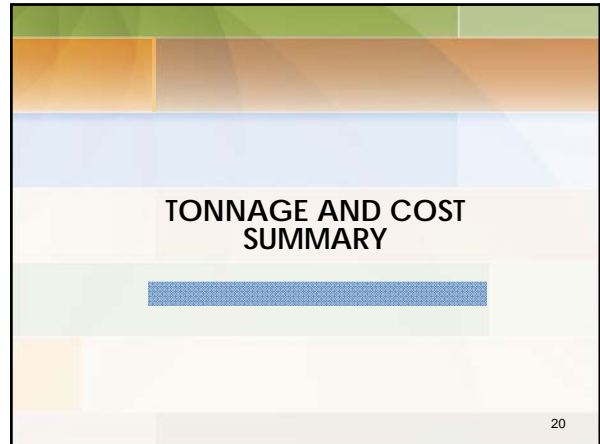
- **Additional Oxygen Is Introduced by Turning Pile Using Front End Loader Bucket Or Fork Attachment**
- **Started Screening Material In 2007**
 - Produce material that meets NMDOT Specifications
- **Screen Is Rented Once Per Year (\$15,000 for 2 to 3 Months)**

CDM 17

Windrows



CDM 18



Tonnage and Cost Summary

- **Processed Material**
 - 2007 3,928 Tons
 - 2008 4,087 Tons
- **Processed Material**
 - All material is free to residents that can self-load
 - City charges customers
 - \$6 per cy loading charge
 - \$14 per cy for screened material
 - \$6 per cy for un-composted material
 - Use Front End Loader Bucket to estimate cubic yards

CDM 21

Tonnage and Cost Summary

- **Incoming Tipping Fees**
 - Residents not charged
 - Commercial customers charged \$20 per ton
 - Local MSW Landfill Tipping Fee - \$30 per ton
 - Large Tree limbs and stumps

CDM 22

Tonnage and Cost Summary

- **Morbark O&M Cost**
 - 2006 Purchase Price - \$280k
 - 2009 O&M Cost
 - Fuel \$8 k
 - Maintenance \$13 k
 - Total \$21 k
 - Approximately \$5.25 per ton (Equipment O&M cost)

CDM 23



Lessons Learned and Challenges

- **Take Certified Composter Class!!!**
- **Check Pile Temperatures Often**
 - Check piles every 1 to 2 weeks
 - If pile temperature is less than 100 or more than 140 degrees
 - turn and add water
 - One small fire in 2006
- **Metal Is Problematic**
 - Replace conveyor belts once per year
 - Purchase chipper with metal removal
- **Too Much Water Creates Problems**
 - Staff notice additional flies
 - Impact on adjacent access roads

CDM 25

Lessons Learned and Challenges

- **Add Water at Chipper - Provides Even Distribution Of Moisture**
- **Trash Containers at Site for Small Amounts of Solid Waste**
- **Monitor Unloading Area**
- **Adjust Size of Drop-off Area to Accommodate Varying Material Volumes**
- **Regulatory Requirements**
 - NM Agricultural Department Permit Requirements
 - Fees and testing requirements

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Future Programs

- **Possible Long Term Integration of Biosolid and Yard Waste Composting Operations**
- **Biosolid Composting Operations**
 - *Performed at WWTP*
 - *Process approximately 1,500 tpy*
 - *Class A Biosolids*
 - *Material is free*
- **Organics - Represent 3.5 to 4% Diversion Rate**

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Questions?

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