

# Partial Closure of the Cerro Colorado Landfill - Lessons Learned

2023 New Mexico Recycling  
and Solid Waste Conference



Albuquerque, NM

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SCS ENGINEERS

**Parkhill**

## AGENDA

- Project Background
- Project Procurement
- Final Cover Design
- Final Cover CQA Testing
- Partial Closure Advantages
- Lessons Learned

## Project Background

- Project Team
  - City of Albuquerque – Owner
  - CDM Smith – Design
  - CH2M/Jacobs – Bidding/Construction Oversight
  - Parkhill Smith & Cooper – Final Cover CQA
  - Mountain States Constructors – Contractor
- Competitive Bid Process
- \$2,168,000 Total Construction Cost
  - Approx. \$60,000 per Acre

**Parkhill**

## Project Background

- Cerro Colorado Landfill
    - 550,000 tpy
    - Opened 1990
    - 9 – 20 Acre Cells Constructed
  - Cells 1 to 3 Partial Closure
    - Approximately 36 Acres
    - Stormwater Channel Improvements
  - Project Timeline
    - Bid/Award March – May 2020
    - Construction June 2020 – Jan. 2021
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## Final Cover Design

- Monocover or ET Cover Design
    - 30" Thick On-site Soil Layer
    - 6" Thick Vegetative Layer
      - Wood Chips
  - Fabric Formed Concrete Downdrains
  - Final Cover Construction
    - Infiltration Layer- 150,000 cy
      - July 15 thru September 15, 2020
    - 6" Vegetative Layer
      - September 15 , 2020 thru January 21, 2021
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## Final Cover CQA Testing

- Intermediate Cover Layer
  - 38 Test Pits to Confirm 12" Thick Soil Layer
- 30" Thick Infiltration Layer
  - One Density Test Per 10,000 sf per Lift
    - 483 Density Tests
  - One permeability per 5,000 cy of Soil
    - 30 Permeability Tests
  - One Sieve Analysis Per 1,000 cy of soil
    - 150 Sieve Tests
- 6" Thick Vegetative Layer
  - 65 Thickness Tests

## Existing Landfill – Before Closure



## Soil Placement and Compaction





## Fabric Formed Concrete Down Drain



## Existing Concrete Crushed and Re-used



## Stormwater Channel – Drop Structures



## Sideslope Access Road



## View Looking Northwest



## View Looking West



## View Looking West



## View Looking Northeast – Next Closure Phase





## Completed View – Sept. 2023



## Completed View – Sept. 2023



## Completed View – Sept. 2023



## Partial Closure Advantages

- Reduced Maintenance of Intermediate Cover Layer
    - Soil Cost to Repair Slopes After Storms
    - Less Hours on Heavy Equipment and Operators
    - Less sediment transportation
    - Reduced Wind Erosion
  - Re-Use of Green Waste Material and Concrete
    - City Stockpiled Chipped and Screened Mulch
  - Heavy Equipment and Operators Can Work on Other Projects
  - Reduction in Financial Assurance
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## Lessons Learned

- Start Closure Planning/Design Early
  - Budget \$\$\$ for Partial Closure Projects
  - Meet with Regulators to Discuss QC Testing Requirements – On-Site Soils
  - Mono or Evapotranspiration Covers Require Different Testing Approach
  - 6" Thick Vegetative Layer Requires Alternative Thickness Testing Procedures
  - Make Sure Adequate Water is Available for Compaction
  - Perform QC of Chipped Green Waste Material
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- Questions???
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