THE PAINTED LANDFILL
Daily Cover and the Beneficial Re-use of Waste Latex Paint

Presented By: Jennifer Richardson, Regulatory Compliance Manager, Mesa County Solid Waste Management

Contact Information

Cameron L. Garcia
(970) 255-0754
cameron.garcia@mesacounty.us

Daily Cover

- 40 CFR 258.21
  - Must cover with 6 inches of earthen material at the end of each operating day
  - Control disease vectors, fires, odors, blowing litter, scavenging
  - Approved alternatives can include:

Why Consider an ADC

- 20% - 50% loss of airspace
  - Resulting in loss of revenue
  - Saving airspace can increase the life of the landfill by an average of 25%
- Costly
  - Fuel
  - Vehicle maintenance
- Environmental Impact
  - Fossil fuels
  - Emissions
  - Fugitive dust
Selecting an ADC

- Things to consider when selecting an ADC
  - Capital Investment
    - Regionally available materials
  - Application

Case Study - Mesa County Landfill (Background Info)

- Mesa County Landfill
  - Grand Junction, Colorado
  - Services ~150,000 residents
  - Receives 500 tons of garbage per day
  - On site HHW offers free disposal of hazardous materials to Mesa County residents
- Utilizes onsite soils for:
  - Daily cover
  - Intermediate cover
  - Final cap layer
- Soil deficit of 3.2 million cubic yards

Case Study - Mesa County Landfill (Demonstration)

- CDPHE granted a 90 day demonstration period
  - Tried 2 commercially available spray slurries and various combinations of the 2
  - Slurry was applied in all types of weather conditions
  - Documented degradation within 24 hours - 72 hours
  - Opted for a mineral mortar spray slurry blended with 10% waste latex
- The addition of the waste latex created a potential for VOC emissions
  - Sought approval from the CDPHE and the APCD
  - Submitted Report of Findings to the CDPHE and APCD

Case Study - Mesa County Landfill (VOC Calculations)

- Figure total mass of paint used each year
  - weight of 1 gal of paint x # of gal used per day x # of days paint was used = total mass of paint used each year
- Multiply analytical result for each analyte by the total mass
- Convert the units from ug to tons
**Case Study – Mesa County Landfill (Approval Conditions)**

- **Approval Conditions**
  - Utilized when freezing conditions do not exist (March – Nov)
  - ADC will not be utilized when rain is anticipated for longer than a day
  - The ADC will be applied 6 days a week (weather permitting)
  - Sprayed areas will be covered at a minimum of every 48 hours
    - Cover can include: additional trash or approved daily cover
    - soil, tarps, or another coat of ADC
  - Use will cease if ADC is no longer providing adequate control of nuisance conditions and scavenging
  - Use will cease if ADC is a threat to human health or the environment
  - Waste latex paint will be analyzed for VOCs annually
  - Maintain a record of the amount of waste latex utilized for ADC
  - Annual training on preparation and application of the slurry
  - Document when the ADC is used

---

**Case Study – Mesa County Landfill (Operation)**

- **Bowie Hydro-Mulcher Victor 100**
  - 1000 gallon tank
    - 800 gallons of water
    - 10 bags of the mineral mortar
    - 80 gallons waste latex paint

- **John Deere 6150R Tractor**
  - 150 HP, 6 Cylinder Diesel
  - Also used at the composting facility and for liner construction activities

---

**Case Study – Mesa County Landfill (Operation)**

- **Waste latex paint brought in by Mesa County residents to the Household Hazardous Waste Collection Facility (HHW)**
  - Screened and stored in 55 gallon steel drums
    - Screened through a ½" metal grate
    - Does require occasional cleaning
    - Drums are filled approximately 2/3 full
Money saved through reduced operations

- Cost of using a scraper to lay daily cover
  - equipment hours x diesel use/hr x diesel rate = cost of fuel to apply daily cover
  - 2.5 hrs/day x 11 gal/hr x $2.08/gal = $56/day
  - hourly rate of equipment operator x hours working = wages paid
  - $18/hr x 2.5 hrs = $45/day
- Cost of using the tractor/hyrdoseeder to apply spray slurry
  - equipment hours x diesel use/hr x diesel rate = cost of fuel to apply daily cover
  - .5 hrs/day x 1 gal/hr x $2.08/gal = $1.04/day
  - hourly rate of equipment operator x hours working = wages paid
  - $18/hr x .5 hrs = $9/day
- Annual savings on operations when using ADC vs soil
  - [(scraper fuel cost + scraper wages paid) – (tractor fuel cost + tractor wages paid) x # of days facility uses ADC] x annual savings
  - ADC is utilized 190 days/year
  - ($56 + $45) - ($1.04 + $9) x 190 = $17,262/year saved
The HHW collects ~14,000 gal of waste latex paint/year
- ~15% is in good condition and is made available to the public for reuse
- ~85% is shipped via a certified vendor for disposal
- Utilizing the blended slurry, the HHW will save $10,000 - $12,000 in disposal fees each year (2,500 – 3,000 gallons of latex)
- Assuming ½ a tank of blended slurry is used 190 days each year

Other states approved to utilize the blended slurry
- MN, UT, CA, VA, WI, and now CO
- Found benefits of utilizing the mineral mortar spray slurry and waste latex paint blend:
  - Better waste adhesion
  - Increased durability
  - Reduced threat of landfill fires
  - Ease of use
  - Reduced fuel costs and staff hours
  - Increased air space
  - Increased life of landfill
  - Decreased disposal cost of waste latex paint

Questions?????