

# Inert Landfill Operations



# Inert Waste Definition

North Dakota Administrative Code 33-20-01.1-03 (26) defines inert waste as:

“Inert waste” means nonputrescible solid waste which will not generally contaminate water or form a contaminated leachate. Inert waste does not serve as food for vectors. Inert waste includes, but is not limited to: construction and demolition material such as metal, wood, bricks, masonry and cement concrete; asphalt concrete; metal; tree branches; bottom ash from coal fired boilers; and waste coal fines from air pollution control equipment.



# Acceptable Wastes for Disposal?



**Yes** (although concrete could be recycled)



**No** (aerosol cans, chemical containers and electronics are not inert)



# Acceptable Wastes for Disposal?

**No** (household waste could attract vectors, create leachate and/or be putrescible)



**No** (could attract vectors, putrescible)



# Waste Collected for Non-Disposal Management

- **Major Appliances:**
  - Freezers, Refrigerators, Ovens, Water Heaters, etc.
  - May require Freon removal with licensed equipment or removal of residual liquids
    - Aka “White Goods”
- **Scrap Metal**





# Waste Collected for Non-Disposal Management

- **Grass and Leaves:**
  - Manage by Composting
  - Separate from Burn Pile and Disposal Area
  - Soil Amendment for Cover or for Contractor/Resident Landscaping Projects
  - Run-off Management



# Waste Collected for Non-Disposal Management

- **Electronics\*:**

- Challenging waste to recycle:
  - Storage
  - Outlet
  - May Contain Heavy Metals and Other Toxic Substances
- Aka “E-Waste” or “Brown Goods”
- Recycling Facilities and MSW Facilities are Generally Better-Suited for Electronics Collection and Recycling.

\* Check with your permit and the Department first prior to accepting for recycling. An outlet for recycling **MUST** be determined first!!!

**No!**



**Yes!**



# Management and/or Disposal



- Bricks, Masonry, Cement and Asphalt Concrete:
  - Stockpile for Crushing and Recycling
  - Can Be Reused at the Facility or for Local Projects



# Management and/or Disposal



- Branches/Trees/Wood Waste:
  - Wood Chips for Facility/Contractor/Residential Use
    - Landscaping
    - Road Stability
    - Heater Fuel
  - Firewood
  - Approved Burn Variance if No Other Option

# Management and/or Disposal

Trench for Burn Pile





# Management and/or Disposal



Trade Waste  
(Pallets)  
Comingled with  
Burn Pile



Trade Waste  
Separated and  
Ready for Reuse



# Management and/or Disposal

- Scrap Tires:
  - Disposal
    - Bottom of Pit if Possible
  - Pile
    - Volume Over One Twin-Axle Semitrailer Load a Waste Pile Permit is Needed
    - Scrap Tire Piles NDAC 33-20-04.1-07(4)



# Management and/or Disposal



- Lime Sludge:
  - Department Approval Needed Prior to Acceptance (NDAC 33-20-05.1-03)
  - Additional Information May Be Requested
  - Can Be Difficult to Manage

# Operation Practices



- Confinement:
  - Reduces Open Area
    - Reduces Contact with Water
    - Reduces Windblown Waste
    - Reduces Fire Hazard
  - Less Cover Needed

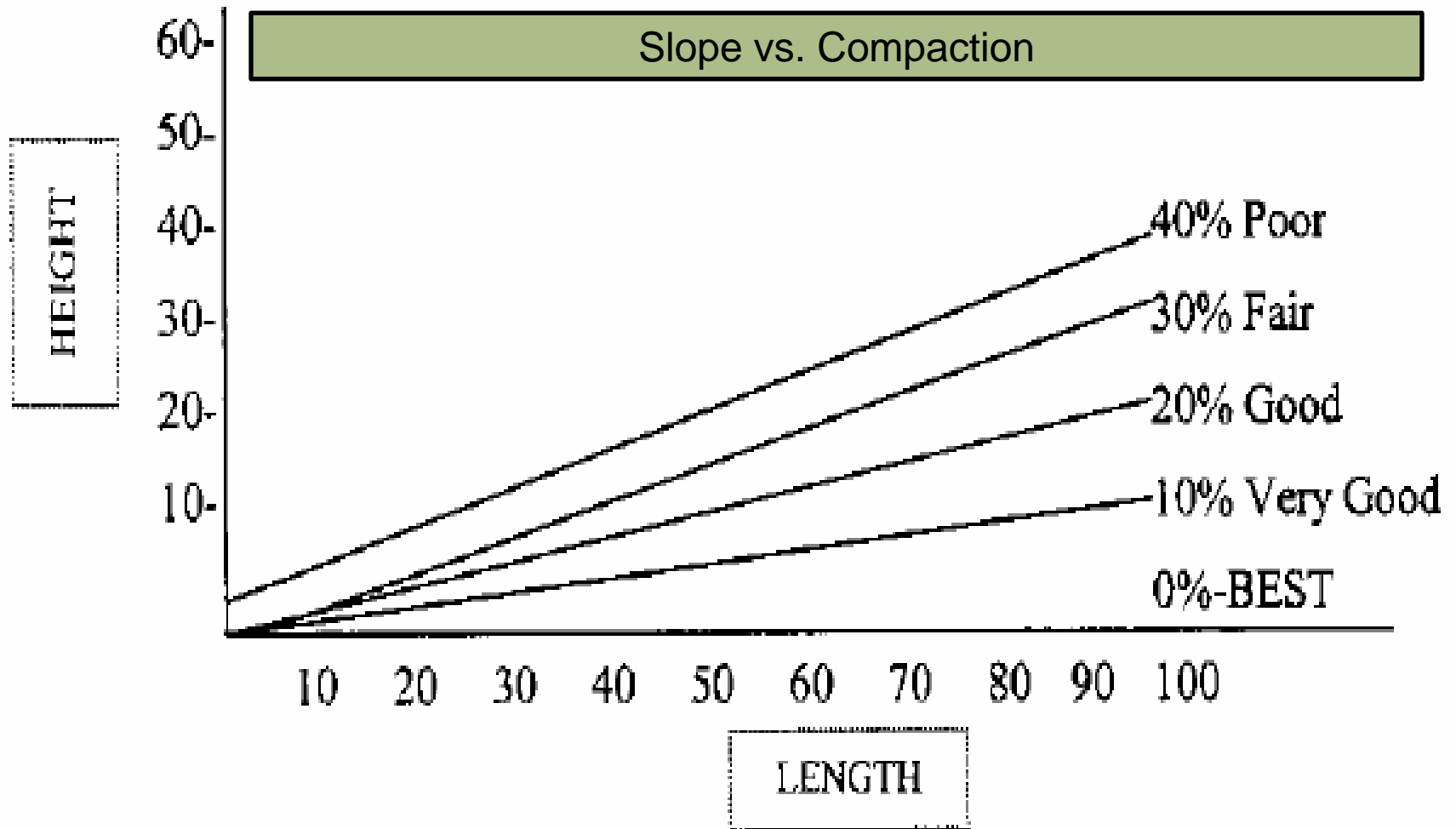


# Operation Practices

- Compaction:
  - Saves Space
  - Saves Cover
  - Saves Money
  - Reduces Fire Hazard
- Recommended Maximum of Two Foot Lifts, 4-5 Passes with Equipment



# Operation Practices



# Operation Practices

- Cover:
  - Reduces Open Area
    - Reduces Contact with Water
    - Reduces Windblown Waste
    - Reduces Fire Hazard
  - Size of Operating Area Should Be in Permit:
    - Ex. Maximum Uncovered Area = 10,000 sq ft
    - Maximum Open Area (not closed)= 40,000 sq ft
  - Inert Landfills Require Cover of at Least 6 Inches Twice a Year



# Operation Practices

- Sequential Partial Closure:
  - Phased Development or “Close as You Go”
  - The Working Face/Open Area of a Landfill Must be Limited
  - Inert Landfills Accepting Less Than 40 Tons/Day = 10,000 Square Feet Max
  - Inert Landfills Accepting More Than 40 Tons/Day = Possibly More Depending on Cover Available, Equipment, etc.
  - Unclosed Area  $\leq$  40,000 Square Feet

# Operation Practices

1997



2009



2005



2015



# Operation Practices

A permanent sign must be posted at the entrance of a facility, or at the entrance of a solid waste management unit used by a facility for wastes generated onsite, which indicates the following:

- The name of the facility;
- The permit number;
- The name and telephone number of the owner and the operator if different than the owner;
- The days and hours the facility is open for access;
- The wastes not accepted for disposal; and
- Any restrictions for trespassing, burning, hauling, or nonconforming dumping.



# Operation Practices

## CITY OF YOURTOWN INERT WASTE LANDFILL

PERMIT NUMBER (IF APPLICABLE)

**OPEN FRIDAY AND SATURDAY 12-3 P.M.**

THIS LANDFILL ACCEPTS ONLY INERT WASTE  
INCLUDING WOOD, TREES, CONCRETE, GRASS AND  
LEAVES, AND METAL

MUNICIPAL, INDUSTRIAL, COMMERCIAL AND  
INFECTIOUS WASTE IS NOT ACCEPTED  
NO PESTICIDE CONTAINERS, ASBESTOS, PAINT,  
OIL FILTERS, OR HAZARDOUS WASTE

**LOCAL ORDINANCE INFORMATION**

**IN CASE OF EMERGENCY OR FOR INFORMATION**

CALL YOUR NAME 555-5555

Days/Hours of  
Operation

**City of New Town Inert Waste Landfill**  
**Open Thursdays from 1:00-4:00 pm**  
**Saturdays 10:00 am-12:00 pm**

Facility Name

Prohibited Wastes

This landfill accepts only inert waste including wood,trees,  
asphalt,concrete,grass and leaves. Separate can provided  
for plastic bags.

Acceptable Wastes

Municipal,Industrial,Commercial,and Infectious Waste is  
NOT accepted.

No pesticide containers,asbestos,paint,oil filters,  
hazardous waste, or batteries.

No unauthorized dumping-Violators will be prosecuted!

In case of an emergency or for more information  
call the City of New Town Auditor's Office at 627-4812

Contact Information

Other Information

ABSOLUTELY NO  
SHINGLES,CARPET,  
MATTRESSES,BEDDING,  
HAZARDOUS MATERIALS,  
OR WHITE GOODS IN  
THE BURN PIT.  
PUNISHABLE BY  
LAW!

PERMIT  
# IT - 204

Permit Number



# Operation Practices



Signs Are Also Useful  
For Additional  
Information and  
Instructions at Your  
Facility





# Operation Practices

- Stormwater Controls:
  - Run-on and runoff
  - Berms around the cell
  - Sloped cell bottom
  - Leachate sump
  - Straw bales, check dams



# Operation Practices



**Routine Cover Stockpiles: 6 in. on 10,000 sq ft.**

- 10,000 sq ft x .5 ft = 5,000 cubic ft.
- 5,000 cu ft/ 27 cu. Ft per yd = 185 yds<sup>3</sup>
- Round up to 200 yds<sup>3</sup>

**Emergency Cover Stockpile: 2 ft on 40,000 sq ft**

- 40,000 sq ft x 2 ft. = 80,000 cu. Ft.
- 80,000 cu. ft./ 27 cu. Ft. per yd = 2,963 yds<sup>3</sup>
- Round up to 3,000 yds<sup>3</sup>





Always Have an Emergency Soil  
Stockpile Accessible and  
Available – You Never Know  
When You May Need It!





# Landfill Fires



# Landfill Fires

## Landfill Fires May Be Caused By:

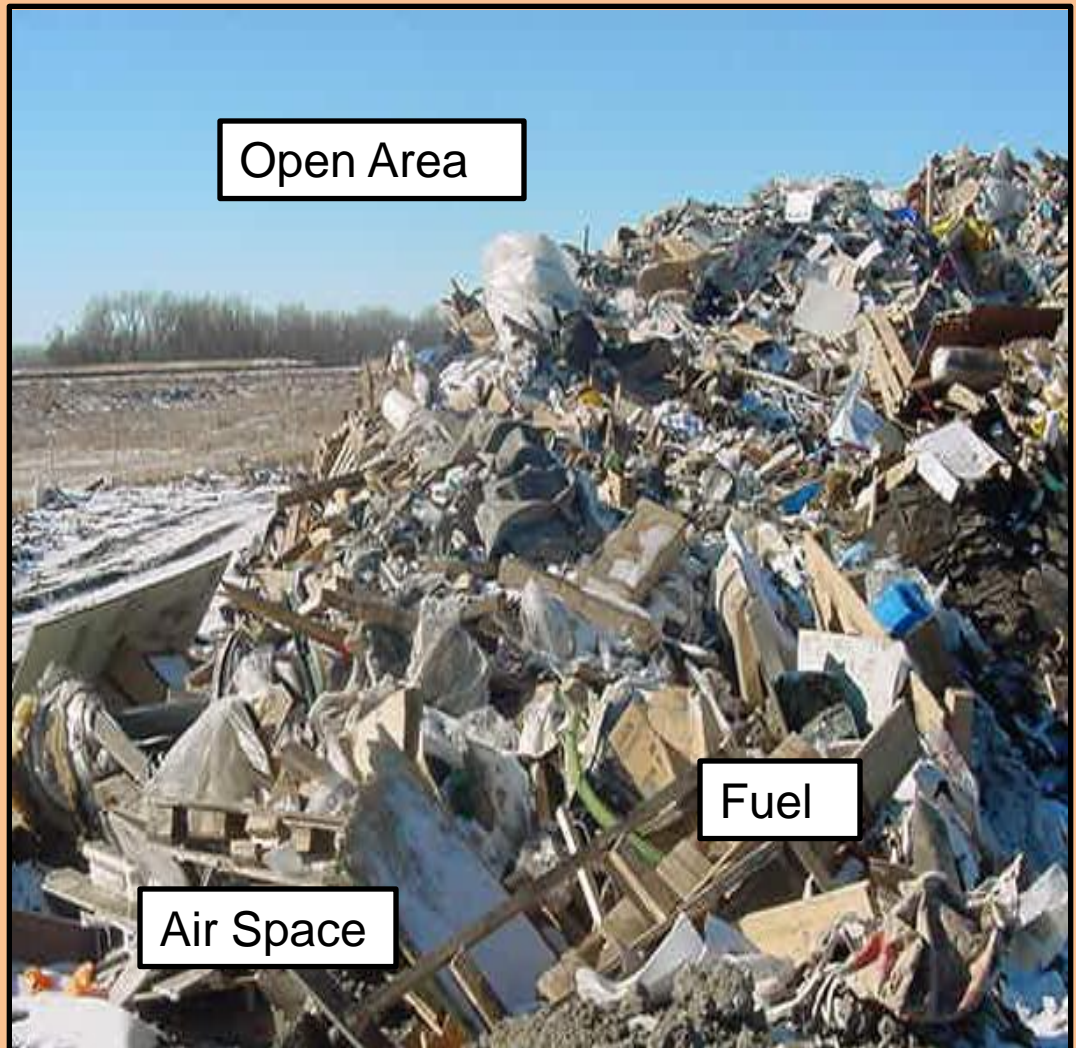
- **Hot Loads** (Smoldering Waste or Ash)
- **Spontaneous Combustion**
- **Salvage or Repair Activities** (Metal Cutting, Etc.)
- **Burning Near Landfill** (Including Failure to Control/Extinguish Approved Burns)
- **Equipment Fires**
- **Cigarette Smoking**
- **Debris on Hot Equipment Parts**
- **Reactive Waste**
- **Glass Exposed to Sunlight**
- **Vandalism**



# Landfill Fires

- **Waste** = FUEL and FOOD – Wood, Paper, Etc.
- **Air** is Readily Available (Voids)
  - Oxidation Reactions (Chemical Interaction) Creates **Heat**
  - Bacteria Growth (Decomposition) Creates **Heat**
- Moisture Increases Reactions and Bacterial Growth – Generating Heat;
- **Heat** is Trapped, Leading to Fire;
- Fire Spreads Where There is **Air** (Voids) and **Fuel**.

Good Landfill Operation Controls Air and Moisture





# Bad Operations = Bad Issues



Non-  
Burnables  
and Trade  
Waste



in the  
Burn  
Pile

# Bad Operations = Bad Issues





# Bad Operations = Bad Issues

Windblown Waste



AM10:55 SEP/27/2013



# Operation Practices

Water in Contact with Waste



# Questions?

