



LANDFILL FIRE MITIGATION

- Not uncommon!
- Many fires are not reported
- Probability of a small fire >50%
- Probability of a major fire 0.05%
- Fires don't care about your schedule or level of preparedness.

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LANDFILL FIRE MITIGATION

3 departments respond to landfill fire

Leeanna Ellis Aug 30, 2019 0

f t e b


Fort Calhoun Fire was one of three departments to respond to a fire Tuesday night at a landfill in southern Washington County.

Firefighters responded to the blaze at Abe's Trash Service, 8123 Christensen Lane, at approximately 10 p.m. They remained on scene until about 1:30 a.m.

Fire Chief Dan Mallory said a portion of the land fill had caught fire. The landfill had heavy equipment to move dirt onto the trash that was burning. However, the fire needed to be knocked down first.

Tankers from Irvington and Ponca Hills fire departments also responded.

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EDITORIAL

Fire in compost pile at Lincoln landfill under control after four-day burn


Lincoln Journal Star Apr 4, 2018





LANDFILL FIRE MITIGATION

Landfill fire under control after more than 8 hours


Share     Updated: 6:16 AM CDT, Jul 8, 2013



SPRINGFIELD, Neb. — Firefighters are now watching for hot spots after battling a blaze at the Sarpy County landfill for nearly nine hours.

Officials deemed the fire under control around 1:30 a.m. Monday.

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SIMPLIFIED RESPONSE PLAN BASED ON FIRE TYPE

TYPE ZERO	<ul style="list-style-type: none"> Notify Facility Supervisor Contain fire until personnel Extinguish within a couple hours Isolate hot material from other fuel Smother with soil Document the incident 	
TYPE FIVE	<ul style="list-style-type: none"> Notify Facility Supervisor and Fire Department Isolate the fire to working cell Contain with soil until Fire Department arrives Operatives and firefighters stay 50' to perimeter Hot steam gas extraction well system Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident 	<ul style="list-style-type: none"> Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident
TYPE FOUR	<ul style="list-style-type: none"> Notify Facility Supervisor and Fire Department Isolate the fire to working cell Additional resources may be required Contain with soil until Fire Department arrives Operatives and firefighters stay 50' to perimeter Provide continuous air monitoring Evacuate non-essential personnel 	<ul style="list-style-type: none"> Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident
TYPE THREE	<ul style="list-style-type: none"> Notify Facility Supervisor and Fire Department Isolate the fire to working cell Contain with soil until Fire Department arrives Operatives and firefighters stay 50' to perimeter Provide continuous air monitoring Evacuate non-essential personnel Establish exclusion zone Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident 	<ul style="list-style-type: none"> Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident
TYPE TWO	<ul style="list-style-type: none"> Notify Facility Supervisor and Fire Department Isolate the fire to working cell Contain with soil until Fire Department arrives Operatives and firefighters stay 50' to perimeter Provide continuous air monitoring Evacuate non-essential personnel Establish exclusion zone Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident 	<ul style="list-style-type: none"> Hot steam gas extraction well system Isolate the area to minimize personnel Determine if cover soil needed Wear proper PPE (See Section 5.2) Separate hot material from other fuel Identify if air monitoring is needed Document the incident

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INCREASING RISK & COMPLEXITY



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LANDFILL FIRE MITIGATION

It's just a landfill, what is the big deal?

- Multi-million dollar infrastructure
- Environmental impact (air and water)
- MSW Services/Programs
- What about the Btus of MSW?


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1ton = **100**
of municipal solid waste gallons of fuel



LANDFILL FIRE MITIGATION

What about other dangers?

- Confined spaces
- Transfer Station Pits
- Flammables stored
- Hazardous materials





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Developing a Pre-Plan:

- Who is involved?
 - Nebraska Department of Environmental Quality
 - Nebraska Emergency Management Agency
 - Fire Departments
 - Law Enforcement
 - Local/Regional Officials and Planners
 - Landfill Operators and Management




NEMA

<https://nema.nebraska.gov/overview/county-emergency-management-directorscoordinators>

COUNTY	NAME	ADDRESS	CITY, STATE, ZIP	PHONE	EMAIL
ADAMS	Ron Pughes, Director	1313 N. Hastings Ave.	Hastings, NE 68901	402-461-2360	rpughes@acema.org
ANTELOPE	Bobbi Risor, REG 11 Emergency Manager	701 Koenigstein Ave.	Norfolk, NE 68701	402-844-2050	brisor@ci.norfolk.ne.us
ARTHUR	Bill Simpson, Director	Courthouse, 205 Fir St.	Arthur, NE 69121	308-764-2225	bs8991@netnet.net
BANNER	Tim Newman, REG 22 Coordinator	1801 Avenue B	Scottsbluff, NE 69361-2426	308-436-6689	tnewman@scottsbluff.org
BLAINE	Alma Beland, REG 26 Coordinator	404 Fourth St, Box B	Taylor, NE 68879	308-942-3461	alma@region26.org
BOONE	Denise Ziemba, Director	309 Esther	Furlerton, NE 68638	308-536-4443	region44em@insurance.nacne.org
BOX BUTTE	Nan Gould, Coordinator	Street: 250 Main St, Mailing: P.O. Box 426	Chadron, NE 69337	308-432-2251	reg23ema@bbc.net
BOYD	Doug Fox, REG 24 Coordinator	400 State St., P.O. Box 178	Bassett, NE 68714-0178	402-684-2424	region24@abnnebraska.com
BROWN	Doug Fox, REG 24 Coordinator	400 State St., P.O. Box 178	Bassett, NE 68714-0178	402-684-2424	region24@abnnebraska.com








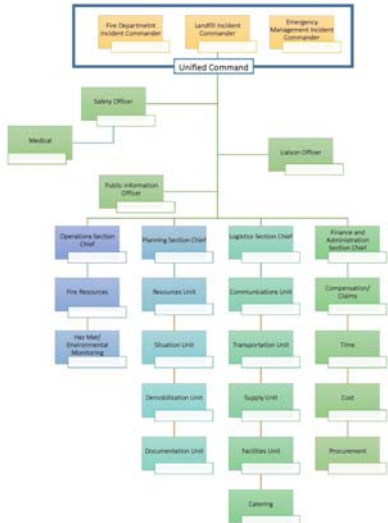
LANDFILL FIRE MITIGATION

Developing a Pre-Plan:

- Who is in charge and what is their role?



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LANDFILL FIRE MITIGATION

Developing a Pre-Plan:

- Identify Resources/Needs (Immediate)
 - Water access
 - Closest hydrant may not operationally work for the FDs
 - FDs may not draft out of available water sources
 - Equipment
 - Capabilities (GPM)
 - Interoperability
 - Operators and operational knowledge

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LANDFILL FIRE MITIGATION

Name	Tank Capacity (gallons)	Pump Rating (GPM)
First Out-Iowa City Fire Department (Paid department)		
100' Ladder truck (station 1)	280	2,000
Pumper truck (station 1)	750	1,500
Command vehicle (station 1)		
75' Ladder truck (station 2)	500	
Pumper truck (station 3)	750	1,500
Pumper truck (station 4)	750	1,500
Rescue 4 (station 4) confined space rescue equipment		

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Developing a Pre-Plan:

- Identify Resources/Needs (Immediate)
 - Communication equipment and strategy
 - Responsibility of setting/posting channels
 - Interoperability
 - Air Monitoring
 - PPE



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Developing a Pre-Plan:

- Identify Resources/Needs
 - External communication
 - Construction lights
 - Fuel
 - Food
 - Beds
 - Labor/Heavy Equipment Operators (long-term)





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Developing a Pre-Plan:

- Site Access (Alternative access point)
 - What if primary entrance isn't available?
 - Gate access (Knox Box)



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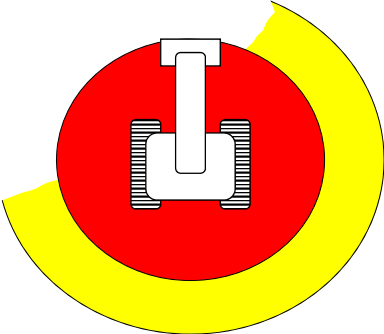
LANDFILL FIRE MITIGATION

- What Do They Need to Know About You?
 - Water access
 - Infrastructure (leachate & LFG systems, ponds, roads, electrical shutoffs, etc.)
 - Facility is a critical utility infrastructure for the community – It isn't a "dump"
 - You may have regular small operational fires
 - Threats (physical and operational)



LANDFILL FIRE MITIGATION

- What Do They Need to Know About You?





LANDFILL FIRE MITIGATION

- What Do They Need to Know About You?



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LANDFILL FIRE MITIGATION

- What You Need to Know About Them?
 - Who will respond to your 911 call (may depend on what part of your property you are calling from)
 - Mutual aid arrangements
 - Equipment operational standoff zones
 - These may influence your operations

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LANDFILL FIRE MITIGATION


- Ok... So I have a fire and need help.. Now what?



LANDFILL FIRE MITIGATION

- Evacuate area of all non-essential personnel
- Alert all other employees
- Activate the fire alarm system if one is in place
- Assess to determine if the fire can be managed by site personnel
 - Answer no, or even maybe, call 911 and request assistance from the fire department





LANDFILL FIRE MITIGATION

- Be clear when explaining the nature of the fire to the fire department including known details:
 - Possible causes
 - Where the fire is located (on site structure, vehicle, or landfill)
 - What the fuel is
 - Whether it is a surface or subsurface fire
 - If it poses a spreading risk


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LANDFILL FIRE MITIGATION

- Initiate communication up the chain of command
- If site personnel choose to fight the fire, never do so alone – What does the plan say?
- Always let someone know your plan of action
- Always consider your safety over the loss of property or equipment

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LANDFILL FIRE MITIGATION

- Do you need to shut down outside energy sources?
- Do you need to isolate LFG system?
- Avoid the smoke – Smoke is toxic!
- Maintain an escape path in case need to vacate the area
- Work with the fire department once they arrive
- Initiate air monitoring protocol

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LANDFILL FIRE MITIGATION


- LEARN FROM OTHERS

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LANDFILL FIRE MITIGATION

- Key Lessons Learned
 - Interagency communication is key
 - Determine the objectives
 - Develop a detailed written plan
 - Start monitoring and modeling early, bring in a specialist
 - Get agencies up to speed quickly
 - Develop a clear command structure



LANDFILL FIRE MITIGATION

- Key Lessons Learned
 - Appoint a safety officer
 - Consider an on site water supply
 - Water isn't always the answer
 - Develop training, pre-plan, and keep it up to date
 - More?





LANDFILL FIRE MITIGATION

- Daily cover
- Soil availability – Dedicated pile
- Load inspections (thermal cameras)
- Equipment maintenance (trash buildup)
- Water supply
- Plan
- Train the Plan



THANK YOU!



Jeff Phillips
515.256.8814
jphillips@barkerleamar.com

