

# Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS



# ANDREW PHILLIPS

## ■ EXPERIENCE

- 16+ years experience - 5 years with heavy highway construction
- For the past 11 years, has lead construction and installation activities at monofill, industrial, and MSW landfill sites.

## ■ SAFETY CERTIFICATIONS

- 40-hour OSHA Hazardous Waste Certified
- Mine Safety and Health Administration Certified (MSHA)
- NFPA 70E Electrical Trained
- Radiation/ HAZMAT Safety Trained
- CQA Materials and Liner Inspector
- Certified Nuclear Gauge Operator
- Confined Space Trained
- Trench & Excavation Trained
- Construction Safety and Health
- CPR/First Aid

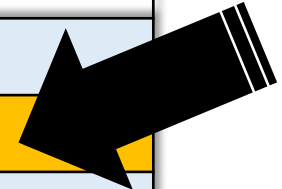
**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities



**Highest incidence rates of total nonfatal occupational injury and illness cases, 2017**

<b>RATING</b>	<b>INDUSTRY</b>
1	Logging Workers
2	Fishers and Related Fishing Workers
3	Aircraft Pilots and Flight Engineers
4	Roofers
<b>5</b>	<b>Refuse and Recyclable Material Collectors</b>
6	Structural Iron and Steel Workers
7	Driver/Sales Workers and Truck Drivers
8	Framers, Ranchers, and Other Agricultural Managers
9	First-Line Supervisors of Landscaping Services
10	Electrical Power-Line Installers and Repairers



*SOURCE: U.S. Bureau of Labor Statistics, U.S. Department of Labor*

# SITE ACCESSIBILITY

## ■ EXAMPLE OF GOOD ACCESSIBILITY

- Easy Access For UTV/ATV
- Cleared Vegetation
- Wells Clearly Marked
- Protected Casing In Place
- Wells Locked And Protected With Bollards



ANDREW PHILLIPS

Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS

# SITE ACCESSIBILITY



## COMMON ITEMS TO AVOID

- Large Debris Blocking Well Access
- Overgrown Vegetation
- No Well Protection
- Well Not Labeled/Easily Identifiable



**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities

# GROUNDWATER SAMPLING

## ■ EQUIPMENT

- Coolers/Sample Bottles
- Collection Sonde
- Safety/PPE
- Gas Monitor
- Low Flow Equipment
  - Batteries
  - Various Pump Controllers
  - Nitrogen/CO<sup>2</sup> tanks
  - Tubing
  - Decontamination Equipment



ANDREW PHILLIPS

Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS

# GROUNDWATER SAMPLING HAZARDS

How would  
you safely  
access this well  
to sample?



Elevated wells after construction,  
that required sampling.

ANDREW PHILLIPS  
Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS



**Lack of proper compaction and bridging could lead to sinkholes.**



**ANDREW PHILLIPS**  
Unique Safety Risks for Field Operations at Solid Waste Facilities







**Snow Covered Hazards**

- Ravines
- Ice



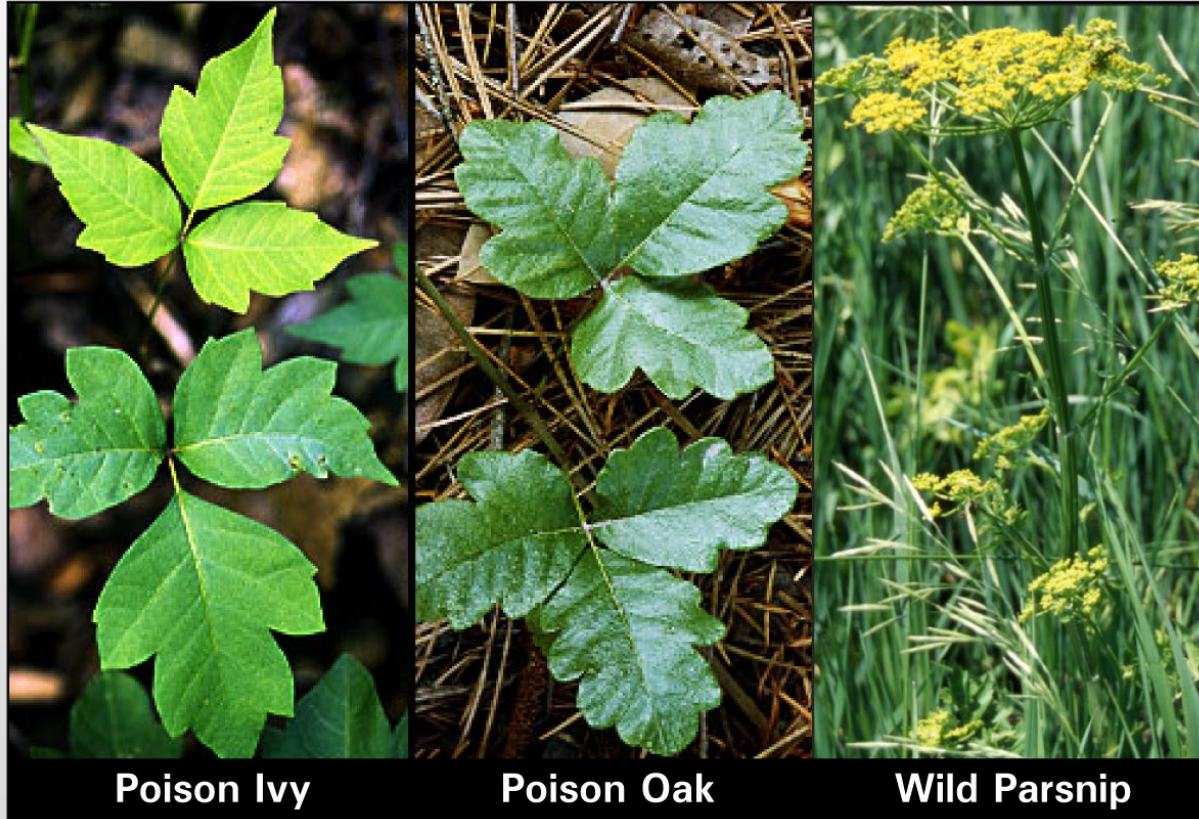
**Image left:**  
Rolled UTV traveling on slight incline, where snow was covering ice.

**Image right:**  
Waste Hauling Vehicle veered off road and ran over monitoring well.

**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities

# NEBRASKA'S MOST IRRITATING



## ■ POISON IVY

- Found in forest edges and recently disturbed open fields. Grows as ground cover, shrub or vine.

## ■ POISON OAK

- Leaves grow in clumps of three to five, and look more like oak leaves

## ■ WILD PARSNIP

- Found in eastern Nebraska in moist, rich soils in ditches, pastures, waste areas and around ponds.

ANDREW PHILLIPS

Unique Safety Risks for Field Operations at Solid Waste Facilities



**BLACK WIDOW**



**BROWN RECLUSE**

■ **May/June is regarded as high tick season in Nebraska**

- **American Dog tick** - found statewide
- **Lone Star tick** - found in southeastern, southern, and central Nebraska





Photo: University of Nebraska-Lincoln



Photo by Jody Green

## ■ BEES AND WASPS

- Could be found in Monitoring Well Lids/ Behind Solar Panel Mounts
- Know what team members are allergic.

## ■ CICADA KILLER WASPS

- The largest wasps species in Nebraska, reaching lengths from 1½–2 inches



**OSHA**  
Accident Report

**JULY 2018**  
**SAINT CHARLES, MO**

**Telecommunications technician was stung by several bees and had an allergic reaction.**

**The employee was hospitalized and received treatment; however, was put on life support after going into a coma. He never regained consciousness and died.**

Source: osha.gov

**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities





Copperhead



Prairie Rattlesnake



Timber Rattlesnake

*Source: University of Nebraska-Lincoln*

## ■ AT A DISTANCE, BE ALERT FOR ...

- A blotched or banded body pattern.
- A triangular head distinctly wider than the neck.
- A warning rattle

## ■ IN CASE OF VENOMOUS SNAKEBITE

- Stay CALM and quiet. Remove rings, etc
- Get to a HOSPITAL.
- Do NOT cool, cut, or use a tourniquet on the bite.

ANDREW PHILLIPS

Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS

- KNOW WHAT WILDLIFE MAY BE PRESENT



**Sampling  
Drama with a  
Llama!**



# LEACHATE SAMPLING SAFETY



## ■ HAZARDS

- Leachate Extraction Wells
- Side Slope Risers
- Smooth vs. Textured Liner
- Manholes
- Hazardous Gases: CH<sub>4</sub>, H<sub>2</sub>S

**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS



**Extreme care should be taken when sampling from leachate lagoons or manholes. Site safety precautions should be observed at all times.**



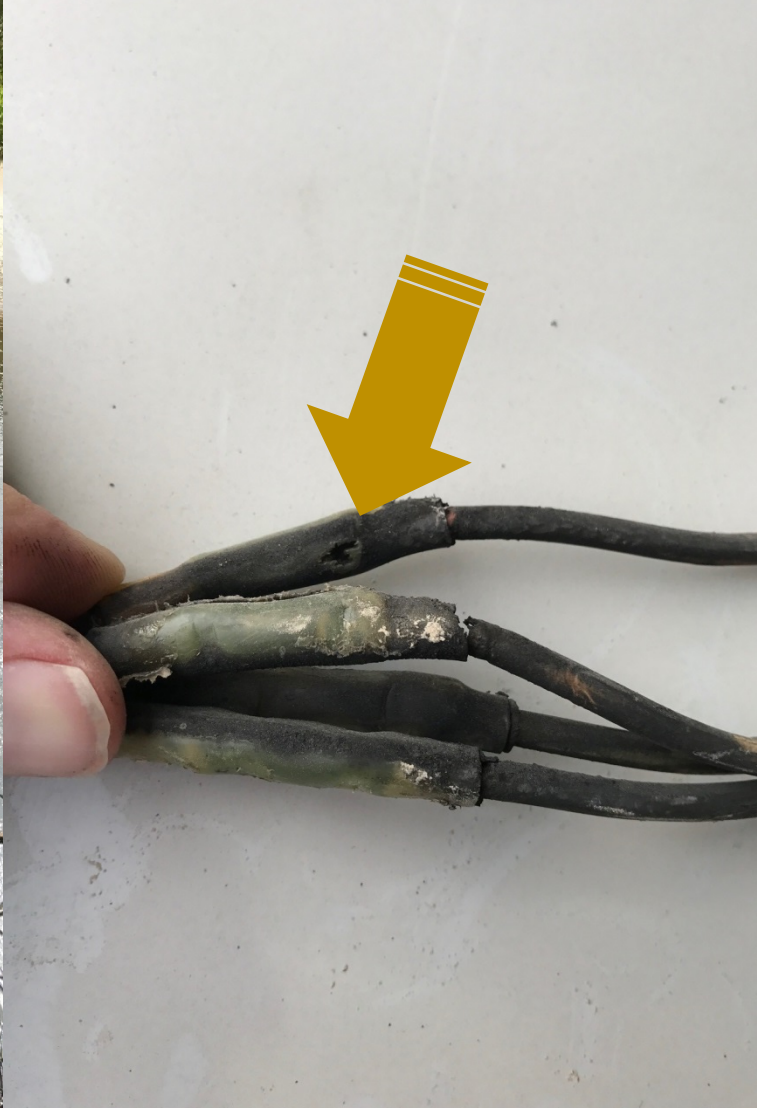
**OSHA**  
Accident Report

**OCTOBER 2018**  
**WISHEK, ND**

A 66-year-old Wishek man died after drowning at a landfill. The man was taking water samples at a leachate pond when he fell into the pond and drowned.

Officers used a remote-operated vehicle to locate the body and remove it from the pond. The pond was roughly the size of a football field and up to 20 feet deep.

# ELECTRICAL SAFETY



- Technicians will be unable to make repairs when water is present.
- Frayed or spliced wires with burn marks may indicate replacement or repair is needed.

**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities

## ■ STRUCTURES THAT MAY BE DEFINED AS CONFINED SPACE

- Leachate Manholes
- Vaults Containing Landfill Gas Wellheads
- Utility Vaults
- Access/Cleaning Pits Under Waste Conveying Equipment
- Alternate Cover Material Mix Tanks
- Storage Tanks At Hazmat Collection Areas



**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities

**BARKER LEMAR**  
ENGINEERING CONSULTANTS



# *QUESTIONS*

*(515) 250-5411 | (800) 707-4248*  
*[aphillips@barkerlemar.com](mailto:aphillips@barkerlemar.com)*

**ANDREW PHILLIPS**

Unique Safety Risks for Field Operations at Solid Waste Facilities