

**Underground Facility Damages:**  
*What to do when something does go wrong*

Presented By:  
**William E. Balin**  
Vice President  
The Pipeline Group

*APWA Congress 2008*

---

---

---

---

---

---

---

---

**Today's Speaker:**



**Bill Balin**  
*Vice President, The Pipeline Group*

- 10 year veteran of the one-call industry
- American Public Works Association
- Common Ground Alliance
- One-Call Systems International
- Energy Association of Pennsylvania

---

---

---

---

---


---

---

---

**Today's objective:**

*To help you protect yourself, save lives, and properly respond when an incident occurs.*



---

---

---

---

---

---

---

---

## **Today's agenda:**

- **Preventative Measures In Place**
- Recognizing Underground Line Hazards
- What you should do if something goes wrong



---

---

---

---

---

---

---

---

## **Damage Prevention**

- Federal and State Legislation

---

---

---

---

---

---

---

---

## **Damage Prevention**

- Federal and State Legislation
- One Call Centers

---

---

---

---

---

---

---

---

## Damage Prevention

- Federal and State Legislation
- One Call Centers
- Public Awareness Initiatives
  1. Face to face meetings
  2. Print Media
  3. Radio
  4. Television

---

---

---

---

---

---

---

---

## One-Call Initiatives: Call Before You Dig ... It's the Law



### Federal

- Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006 "PIPES"
- OSHA Regulations 1926.651



### State

- State One Call Law
- Criminal Code:
  1. Risking A Catastrophe
  2. Reckless Endangerment

---

---

---

---

---

---

---

---

## Making the Call: Find the Number



Know what's below.  
**Call before you dig.**

---

---

---

---

---

---

---

---

## Uniform Color Code

<b>Red</b>	Electric, Power Lines, Cables, Conduit and Lighting Cable
<b>Purple</b>	Reclaimed Water, Irrigation & Slurry Lines
<b>Yellow</b>	Gas, Oil, Steam, Petroleum, or Gaseous Materials
<b>Orange</b>	Communication, Alarm, or Signal Lines, Cables or Conduit
<b>Blue</b>	Potable Water
<b>Green</b>	Sewers and Drain Lines
<b>Pink</b>	Temporary Survey Marking

---

---

---

---

---

---

---

---

## Today's agenda:

- Preventative Measures In Place
- **Recognizing Underground Line Hazards**
- What you should do if something goes wrong



---

---

---

---

---

---

---

---

## Accidents Happen

It is Possible to do everything correct and still come out on the short end

---

---

---

---

---

---

---

---

## Accidents Happen

It is Possible to do everything correct and still come out on the short end

- Uncover an incident created by another

---

---

---

---

---

---

---

---

## Accidents Happen

It is Possible to do everything correct and still come out on the short end

- Uncover an incident created by another
- Create an incident yourself

---

---

---

---

---

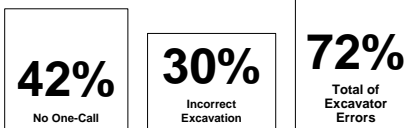
---

---

---

## Causes of Incidents

Incidents of facility damage where causes were determined:



Source: Common Ground Alliance, 2005 DIRT Report

---

---

---

---

---

---

---

---

## Accidents Happen

Hazards associated with different lines

---

---

---

---

---

---

---

---

## Accidents Happen

Hazards associated with different lines

- All underground facility lines pose a danger of some type

---

---

---

---

---

---

---

---

## Accidents Happen

Hazards associated with different lines

- All underground facility lines pose a danger of some type
- It is important to recognize the hazards so one can take appropriate action

---

---

---

---

---

---

---

---

## Electric Power Lines

1. May at times look like a cable line

---

---

---

---

---

---

---

---

## Electric Power Lines

1. May at times look like a cable line
2. Don't let quiet lure you into a false sense of security

---

---

---

---

---

---

---

---

## Electric Power Lines

1. May at times look like a cable line
2. Don't let quiet lure you into a false sense of security
3. May snap and spark

---

---

---

---

---

---

---

---

**Electric Power Lines**

1. May at times look like a cable line
2. Don't let quiet lure you into a false sense of security
3. May snap and spark
4. May "energize" an entire area

---

---

---

---

---

---

---

---

**Gas, Oil, Steam, Petroleum, or Gaseous Materials Lines**

1. Different products have different properties

---

---

---

---

---

---

---

---

**Gas, Oil, Steam, Petroleum, or Gaseous Materials Lines**

1. Different products have different properties
2. Volatile and hazardous

---

---

---

---

---

---

---

---

**Gas, Oil, Steam, Petroleum, or Gaseous Materials Lines**

1. Different products have different properties
2. Volatile and hazardous
3. Given an ignition source while with the explosive gas to air mixture range will ignite

---

---

---

---

---

---

---

---

**Gas, Oil, Steam, Petroleum, or Gaseous Materials Lines**

1. Different products have different properties
2. Volatile and hazardous
3. Given an ignition source while with the explosive gas to air mixture range will ignite
4. Sour gas contains H<sub>2</sub>S

---

---

---

---

---

---

---

---

**Properties of Natural Gas/Methane**

- Gaseous (not liquid)
- Lighter than air
- Colorless
- Odorless unless odorant is added – (distribution lines and some transmission lines)
- Non-toxic, but displaces oxygen (asphyxiation)
- 3.5-15% LEL – UEL (Lower/Upper Explosive Limit)
  - depends on characteristics of gas (MSDS)

---

---

---

---

---

---

---

---

**Gas, Oil, Steam, Petroleum, or  
Gaseous Materials Lines**



---

---

---

---

---

---

---

---

**Properties of Liquid Petroleum Gas (LPG)**

- Liquid until released, then gaseous
- Heavier than air
- Non-toxic, but displaces oxygen (asphyxiation)
- 2.0-10% LEL – UEL (Lower/Upper Explosive Limit)
  - depends on characteristics of gas (MSDS)

---

---

---

---

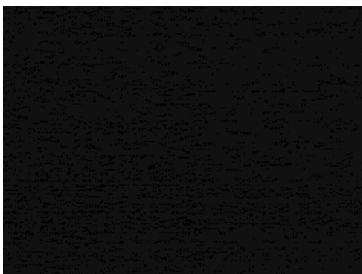
---

---

---

---

**Gas, Oil, Steam, Petroleum, or  
Gaseous Materials Lines**



---

---

---

---

---

---

---

---

**Communication, Alarm, or Signal  
Lines, Cables or Conduit**

- 1. Will lead to service interruptions

---

---

---

---

---

---

---

---

**Communication, Alarm, or Signal  
Lines, Cables or Conduit**

- 1. Will lead to service interruptions
- 2. Fiber Optic lines could cause damage to eyes as they emit light rays

---

---

---

---

---

---

---

---

**Communication, Alarm, or Signal  
Lines, Cables or Conduit**

- 1. Will lead to service interruptions
- 2. Fiber Optic lines could cause damage to eyes as they emit light rays
- 3. Fiber optics may not injure you physically, but will definitely damage your wallet

---

---

---

---

---

---

---

---

**Communication, Alarm, or Signal  
Lines, Cables or Conduit**



---

---

---

---

---

---

---

---

**What Is A Wrongful Death Claim?**

A wrongful death lawsuit alleges:  
that the deceased was killed as a result of the negligence (or other liability) on the part of the defendant's  
and that the surviving dependents or beneficiaries are entitled to monetary damages  
as a result of the defendant's conduct.

---

---

---

---

---

---

---

---

**Potable Water**

1. Large volumes will undermine roads

---

---

---

---

---

---

---

---

### Potable Water

1. Large volumes will undermine roads
2. Road undermining could lead to sink holes

---

---

---

---

---

---

---

---

### Potable Water

1. Large volumes will undermine roads
2. Road undermining could lead to sink holes
3. May disrupt fire fighting capabilities

---

---

---

---

---

---

---

---

### Potable Water



---

---

---

---

---

---

---

---

## Potable Water



---

---

---

---

---

---

---

---

## Sewers and Drain Lines

1. May cause destruction of property

---

---

---

---

---

---

---

---

## Sewers and Drain Lines

1. May cause destruction of property
2. May contaminate a give area or water supply

---

---

---

---

---

---

---

---

## **Sewers and Drain Lines**

1. May cause destruction of property
2. May contaminate a give area or water supply
3. May lead to the spread of disease

---

---

---

---

---

---

---

---

## **Today's agenda:**

- Preventative Measures In Place
- Recognizing Underground Line Hazards
- **What you should do if something goes wrong**



---

---

---

---

---

---

---

---

## **Emergency Actions:**

What to do when something does go wrong

### Electric Lines

1. Do not approach or allow others to approach an area that has a damaged line –
  - Unfortunately, you may not be able to assist a victim

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Electric Lines

1. Do not approach or allow others to approach an area that has a damaged line –
  - Unfortunately, you may not be able to assist a victim
2. If you must leave an energized area, shuffle away, taking large step may bridge two different electric gradients

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Electric Lines

3. Notify electric company immediately so they can de-energize the line

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Electric Lines

3. Notify electric company immediately so they can de-energize the line
4. Remember, electric lines may reset themselves in the event a breaker “kicks off”

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Communications Lines

1. Do not look directly into the end of a fiber optic line
2. Do not touch a fiber optic line bare handed (could get a glass splinter)
3. Contact the communications company immediately

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Water Lines

1. Control traffic in the area
2. Notify the water company immediately

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Sewage Lines

1. Do not enter area without proper protective equipment
2. Try to avoid allowing sewage into water or streams
3. Decontaminate when incident is under control
4. If exposed to raw sewage seek medical attention

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Gas Lines

**Two Assumptions to Always Make:**

- When an incident involves a release of gas product, always assume that the gas-to-air mixture is within the explosive limit.
- When an incident involves a release of gas product, always assume an ignition source is present.

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Gas Lines

**In the Event of a Product Release**

1. Evacuate the area upwind
2. Call
  - 911
  - Pipeline Operator

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Gas Lines

**In Case of Fire**



- Don't try to extinguish the fire
- Don't use water at the point of the fire
- Don't operate valves

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Gas Lines

**Damage Response**

- Priorities: life, the environment, property and restoration of service.
- Notify Local emergency response personnel (911).
- Pipeline Operator (24-hour, 1-800, control center) should be notified immediately, so they can activate their emergency response plan.

---

---

---

---

---

---

---

---

**Emergency Actions:**

What to do when something does go wrong

Gas Lines



---

---

---

---

---

---

---

---

**QUESTIONS?**

---

---

---

---

---

---

---

---

QUESTIONS?

Thank You !

---

---

---

---

---

---

---

---