





43 William Street Exit Street View

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Google earth

Operator Error







Lancaster, Ohio August 1992



Pipe Section Thrown From Accident Site in Background

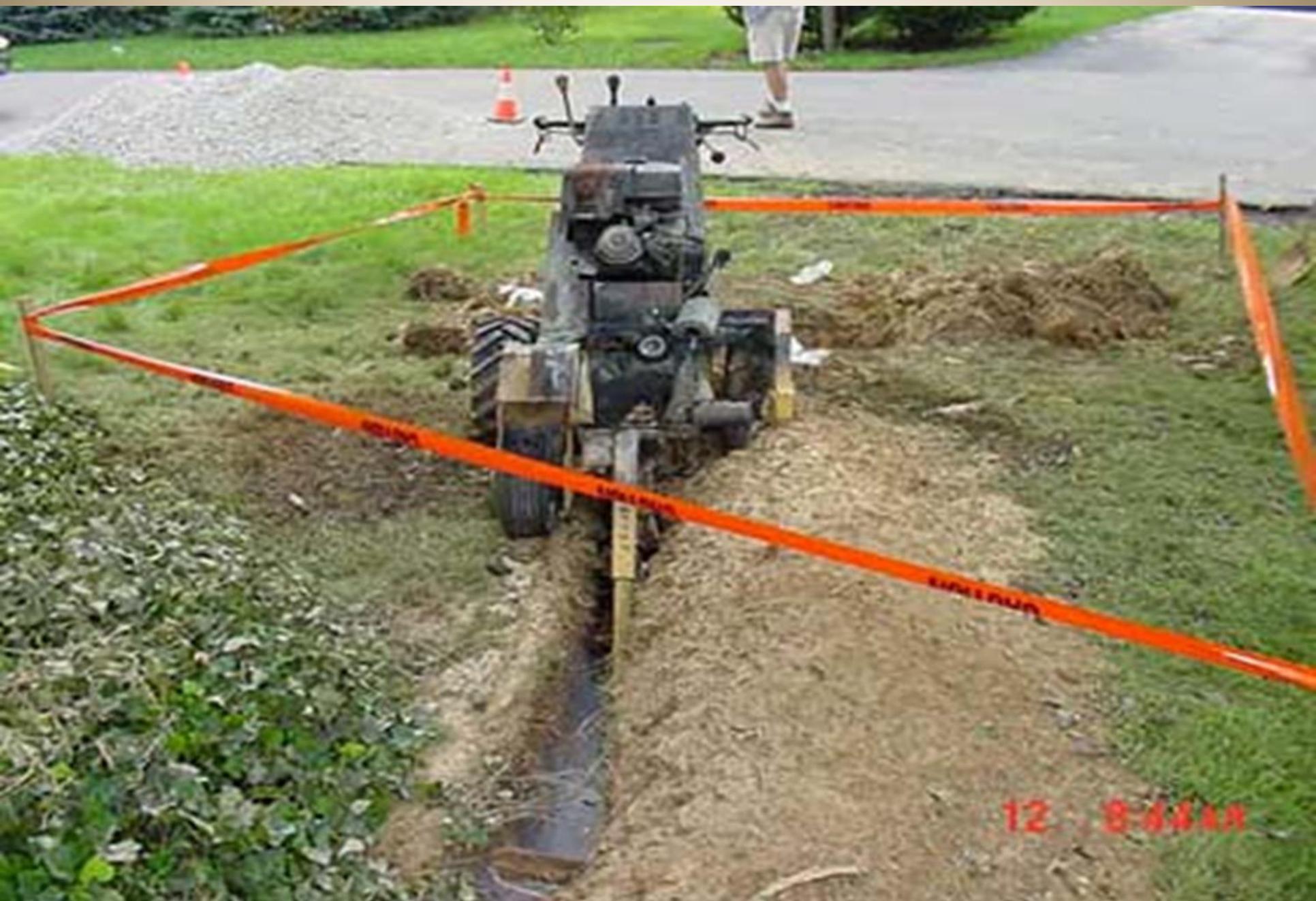


Remains of Spotter



Remains of Operator





12 8 AM



12 9:00 AM

Objectives

- O.U.P.S.
- Excavator Responsibilities
- Utility Owner Responsibilities
- The Marks
- Types of Excavation Activities
- Things to Remember

Excavator Responsibilities

- Definition of an Excavation
 - “...penetrate or bore or drill into the earth...”
ORC 3781.25(I) – Excavator Manual Page 4
- Plan Work
- Premarking in White - Excavator Manual Page 13
- Click, Call or Tap the App – Excavator Manual Page 8
 - “... at least forty-eight hours but not more than 10 working days before commencing excavation, the excavator shall notify a protection service of the location of the excavation site...” ORC 3781.28(A)
- Each Excavator Has to Have Their Own Ticket
 - “...the person or persons responsible for making the actual excavation”
ORC 3781.25(K)
- Locate Work Order – Excavator Manual Page 9

Excavator Responsibilities Cont.

- CSR Verification – Listen Closely
- Ticket Number
- We Notify Our Members But Not All Utilities Are Members With O.U.P.S.
- Wait 48 Hours Before You Begin Excavation
- Check Positive Response – *Excavator Manual Page 11*
 - Excavator has an obligation to check positive response
 - 800-445-3894
- Perform Site Assessment
- Dig With Care

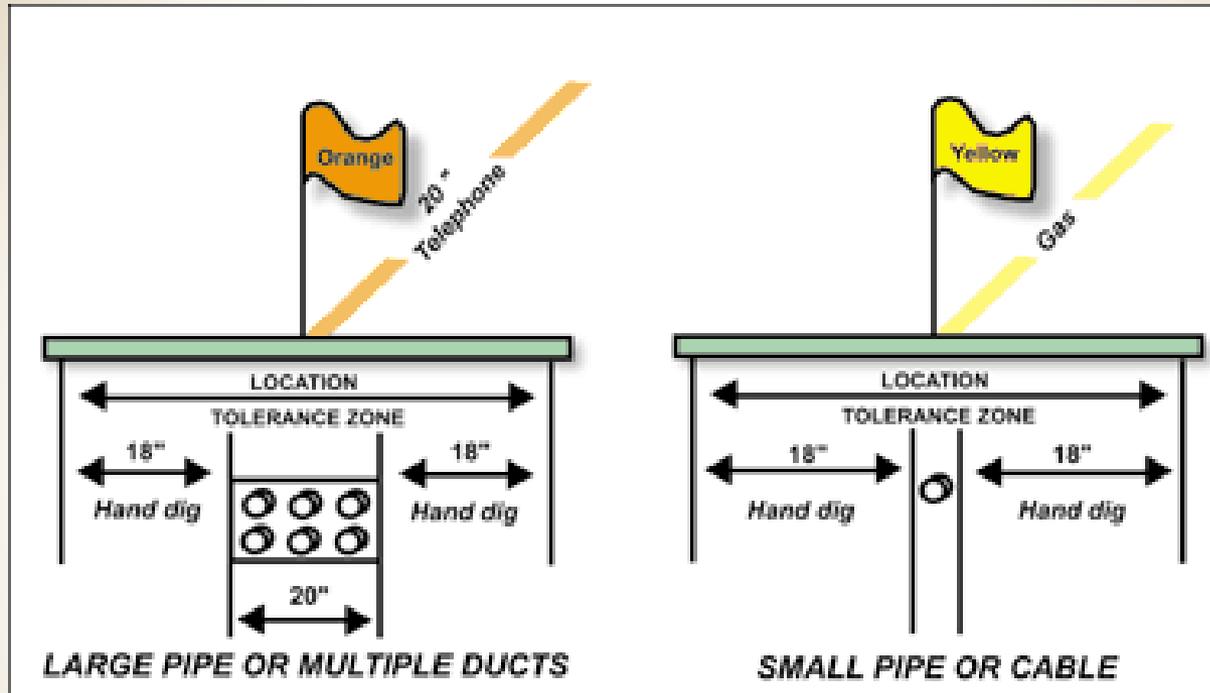
Facility Owner Responsibilities

- Required To Be A Member Of A Protection Service
- Required To Mark The Approximate Location Within 48 Hours
 - Respond To Design Tickets in 10 Days
- Required To Provide Positive Response Within 48 Hours

The Marks

- Tolerance Zone
 - *“...the site of the underground utility facility including the width of the underground utility facility plus eighteen inches on each side of the facility.” ORC 3781.25(E) – Excavator Manual Page 26*
- Color Code - *Excavator Manual Page 12*
- Faded Or Marks That Are No Longer Visible
- Marking Standards – *“All underground facilities shall be marked in accordance with the Ohio universal marking standards...” ORC 3781.29(2)(C) – Excavator Manual Page 12*

Tolerance Zone



Ohio law requires that the excavator observe the tolerance zone during excavation... - *Excavator Manual Page 26*

Color Codes

Red	Electric power lines, power conduits, lighting cables, and other energized wires, such as traffic signals
Orange	Telecommunication lines, fiber optic cables, alarm or signal lines, cable TV or conduits
Yellow	Natural gas, oil, steam, liquid petroleum, or other gaseous or flammable material
Green	Sewers and drain lines
Blue	Drinking / potable water
Purple	Reclaimed water, irrigation, and slurry lines
Pink	Temporary survey markings
White	Proposed excavation

Ohio's Universal Marking Standards

WHITE LINING (Continued)

For a single point excavation, such as installing poles, pedestals, or planting a tree, mark (with white paint) the area by using dashes to show the owners/locators the area of excavation.



For continuous excavation, such as trenching, boring, etc., mark the center line of excavation with dashes in white paint. Excavation width (in feet) shall be indicated on either side of the center line in legible figures.

White flags or stakes may be used in place of white paint and, in some situations, may be more practical.

EXCESSIVE MARKS

Markers used to identify underground facilities should not be excessive or oversized.

CABLES

Underground utility lines of the same type in the same trench owned by the same company shall be marked individually.

A. If a single underground facility is present, it shall be marked by placing a single mark over the approximate center of the facility. It is recommended that this mark be a minimum of 1" wide and 12" in length.



B. If multiple underground facilities are present, they shall be marked by placing a single mark over the approximate center of each underground facility. It is recommended that this mark be a minimum of 1" wide and 12" in length.



Marks shall be placed at the beginning and the end of the locate and at a minimum interval of two feet but not more than fifty feet throughout the locate as needed to clearly identify the route of the underground utility.

PIPELINES

A. Pipelines 2 Inches and smaller (nominal size): The physical location of a pipeline shall be represented by a single mark.



B. Pipelines larger than 2 Inches (nominal size): The physical location of a pipeline shall be represented by a single mark. The nominal size shall be noted.



For all pipelines:

1. The owner/operator shall be identified. Flags, as well as paint, shall be deemed acceptable as identifying the owner/operator.
2. When known, the material type of the pipeline shall be indicated using the "material type" abbreviation index.
3. When the facility is installed in casing the facility shall be marked as follows: "diameter and material type / casing diameter and material type". If the casing size or material is unknown it shall be indicated by "UNKN" and, the excavator, designer, or engineer should contact the facility owner. All parties involved shall work jointly to establish accurate information.

PIPELINES



4. Marks shall be placed at the beginning and the end of the locate and at a minimum interval of two feet but not more than fifty feet (50') throughout the locate as needed to clearly identify the owner/operator, pipeline location, material, and width.

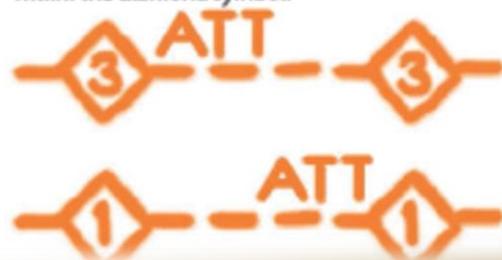
5. All numbers identifying width shall be in inches.

CONDUIT/DUCT BANK

The term "conduit" shall be used for a single enclosure containing one or more facilities; the term "duct bank" shall be used for a structure containing two or more conduits.

A. For banks constructed with ducts sized 2 inches or less, the following information will be provided:

1. A single mark is used.
2. A diamond is placed within the mark.
3. The number of small-diameter ducts shall be indicated within the diamond symbol.



OFFSET MARKS

In areas prone to the frequent destruction of marks, offset marks may be used in conjunction with the marks placed at the actual location of a facility. They are intended to be used as a supplemental means of marking.

1. A line is placed in conjunction with an arrow and a measurement (stated in feet), which specifies the distance from the reference line to the actual location of the facility.
2. The arrow indicates the direction from the reference line to the actual location of the facility.
3. The arrow shall be oriented at 90 degrees to the reference line.
4. The distance to the actual location of the facility, from the reference line, shall be placed on one side of the arrow.
5. The locator shall provide all of the necessary information which adequately identifies the specific facility in accordance with the marking standards. This information shall be placed on the side of the arrow which is not utilized for the "distance" information.



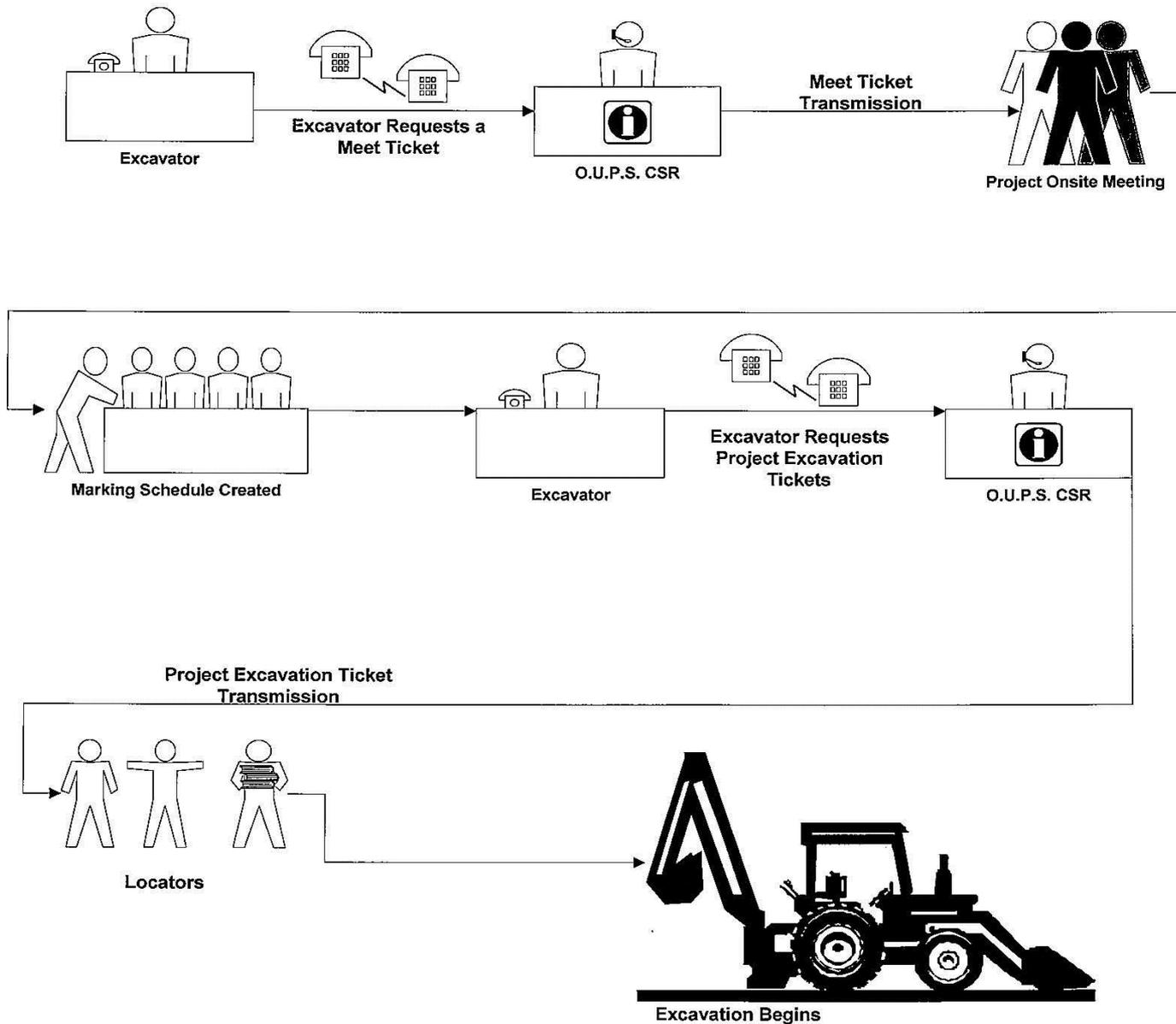
Types of Excavation Activities

- Emergencies- *Excavator Manual Page 6*
- Design
 - Facility Owners Have 10 Working Days To Respond
- Use of Trenchless Technologies – *Excavator Manual Page 5*
 - When Utilizing Trenchless Excavation Methods, The Excavator Must Comply With The Following Requirements:
 - Expose all underground utility facilities at each crossing point to the installation depth of the new facility.
 - Expose all parallel facilities at the beginning and end. If in the tolerance zone, facility shall be exposed every 100 ft.
 - Maintain the proper clearances of existing facilities.

Types of Excavation Activities Cont.

- Large Project
 - A large project is one that may progress over an extended period of time and/or be complex in size/scope and work type
 - Process:
 - Excavator calls O.U.P.S. to request a large project/joint meet ticket
 - Excavator and facility owner/representatives meet
 - A mutually agreed upon marking schedule is created
 - Excavator calls O.U.P.S. with project excavation tickets in accordance with **mutually agreed upon marking schedule**
 - Locator marks underground facilities as project excavation tickets are received
 - Excavation begins

ONE CALL PROCESS FOR LARGE EXCAVATION PROJECTS



One Call Process for Large Excavation Projects

- A large project is one that may progress over an extended period of time and/or be complex in size, scope and work type. Not all large excavation projects may need a Large Project Meet Ticket.
- The purpose of a Large Project Meet Ticket is to coordinate an onsite meeting/communication between the excavator and facility owner representative(s) so that a marking schedule can be set for the project. A large project meet ticket is not a dig ticket.
- Examples of a Large Project Meet Ticket may include, but are not limited to, cross-country pipeline installation, seismic testing and large site development.

Things To Remember

- Contact O.U.P.S. 48 hours before you dig
- Check Positive Response
- Preserve And Protect The Marks
- Don't Work Off Someone Else's Ticket
- Not All Utilities Are Registered With O.U.P.S.
- Utilities May Not Run In A Straight Line
- Do Not Assume Depth
- Report All Damages



Ohio Utilities Protection Service



About Us



O.U.P.S.
Process



The Law



Become a
Member



edig



idig



Positive
Response



Near ticket



Ticket
Search



Legislative
Updates



Marking
Standards



Large
Project



Public
Outreach



DP Councils



The DP
Journal



Contract
Locators

Please Go Home Safe Today!

- All states mandate non-mechanical excavation within 18" - 36" of an underground utility, yet excavation continues to be a leading cause of pipeline failure. **The Pipeline and Hazardous Materials Safety Administration (PHMSA)** estimates that in the last five years damage to underground utilities (liquid) in the U.S. has resulted in over \$2 billion in property damage, approximately 69 deaths, and a staggering number of serious and non-serious injuries.

Problem Scope

- NiSource incurs \$4.2 million annually in facility damages.
- NiSource bills 80% of all damages or about \$3.3 million.
- NiSource collects 73% of all that is billed through internal and external efforts.





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

**33% of all Damages in Ohio
are a result of the Excavator**

NOT

Calling Before Digging

You think You know what is below



This was nine months earlier !!



**Do you think this was a bad accident?
Or a near miss?**



Direction of travel



Where they
ended up



400 ft

Near Misses are

Near Catastrophes!

N
e
a
r
M

Protect LIFE and Property



Safety First

Everyone has a primary duty is to protect yourself, the public, and property. Use safety equipment and follow proper safety procedures.

You are required to notify the pipeline operator and 911.

- Request assistance and proper resources (internal/external) as necessary.

Always...

Secure the area – make the situation safe or secure a buffer zone around the damage.

- Establish a perimeter – Determine the extent of the leakage. Check for secondary damage. Check for migrating gas.
- Re-check

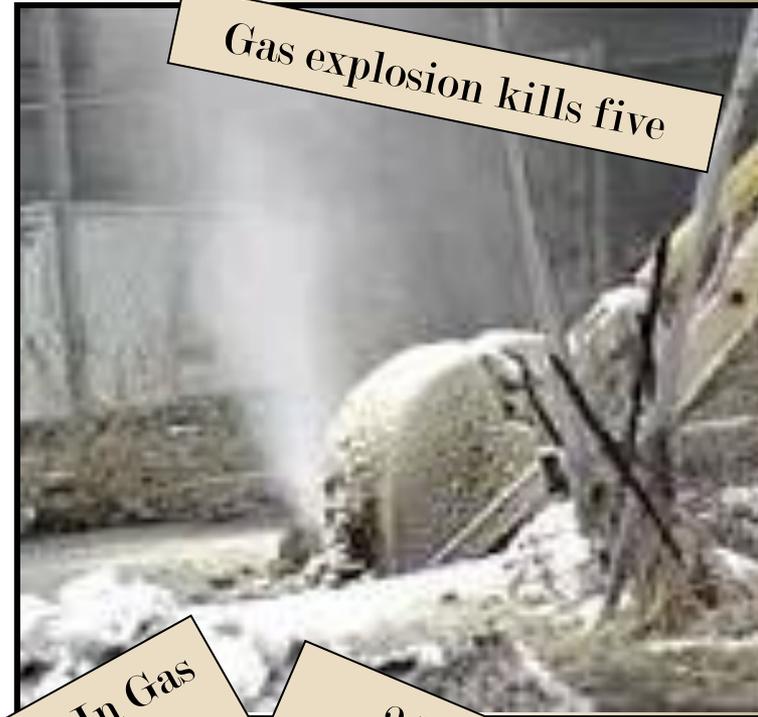
Consider the need to...

- Evacuate buildings
- Redirect traffic
- Eliminate ignition sources



Outside Damage

- In the last 20 years, over **60%** of natural gas-related incidents/explosions have been a direct result of “dig-ins” or outside damage!
- This is the major reason why we should always promote the **“Call Before You Dig Program.”**



Gas explosion kills five

Natural Gas Explosion Kills Six in Louisiana

Excavation Damage Cited In Gas Explosion At New Jersey Apartment Building

2 Dead in Miss. Gas Explosion

SEVEN HURT AS GAS EXPLOSION ROCKS SUNNYSIDE

Gas explosion on Warring Ave. leaves woman in critical condition

Damage Prevention Laws

Excavators MUST:



- Place One Call - 811
- Use Prudent Excavating Techniques
- Call 911 if you hit a Gas line and it's escaping



911



Ohio Law What is required?

- 3781.30 Duties during excavation
- When making excavations, the excavator shall do all of the following:
- (A) Maintain reasonable clearance between any underground facility and the cutting edge or point of powered equipment;
- (B) Protect and preserve the markings of approximate locations of underground utility facilities until those markings are no longer required for proper and safe excavations;
- (C) When approaching underground utility facilities while excavating with powered equipment, require an individual other than the equipment operator, to look for any sign of the underground utility facility;
- (D) Conduct the excavation in the vicinity of the underground utility facility in a careful and prudent manner, excavating by hand, if necessary, to determine the precise location of the facility and to prevent damage;
- (E) As soon as any damage is discovered, including gouges, dents, or breaks to coatings, cable sheathes, and cathodic protection anodes or wiring, report the type and location of the damage to the utility and permit the utility a reasonable amount of time to make necessary repairs;
- (F) Immediately report to the utility and, if necessary, to the appropriate law enforcement agencies and fire departments, any damage to an underground utility facility that results in escaping flammable, corrosive, explosive, or toxic liquids or gas, and take reasonable appropriate actions needed to protect persons or property and to minimize safety hazards until those agencies and departments and the utility arrive at the scene.

Cross Bores

Attention: Those who use trenchless excavation equipment



A Matter of Public Safety!

Cross Bores – The Risk

The Blockage



The Common Fix



The Result

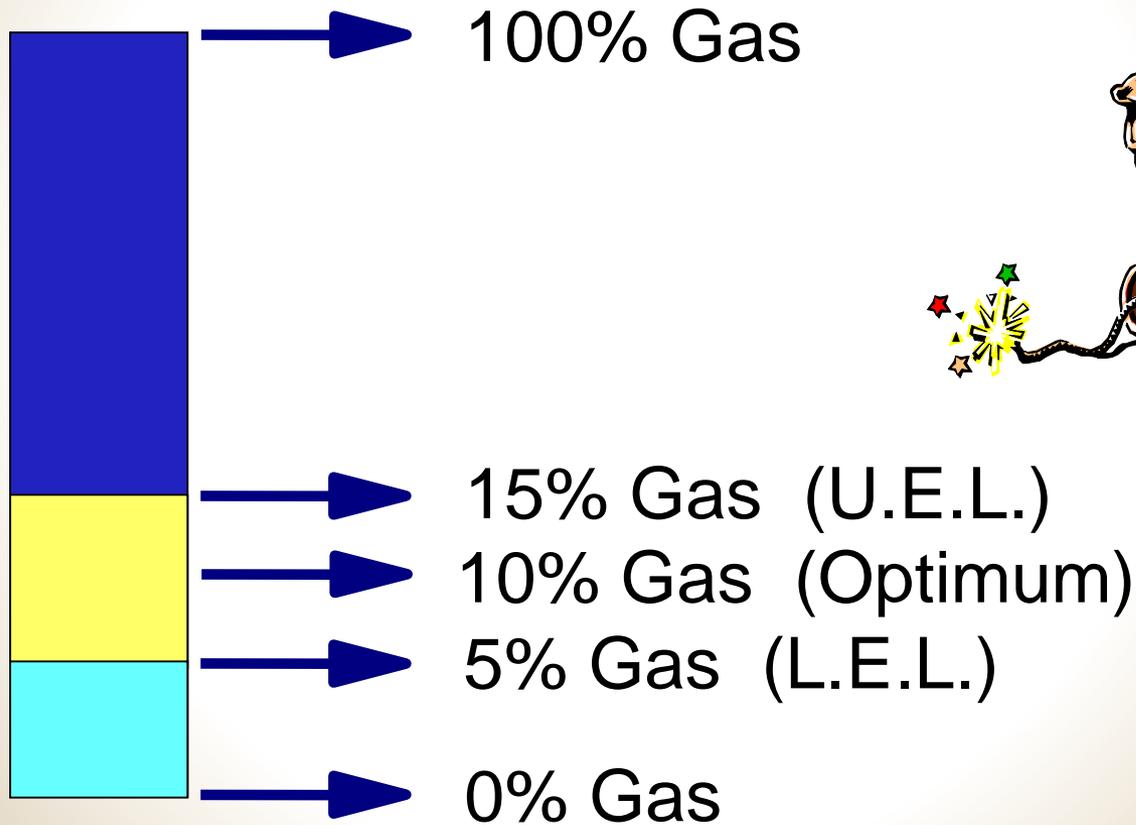


- The presence of a utility line in a sewer line caused by a “Cross Bore” can go undetected for months, even years.
- It is common practice for plumbers to use a mechanical device to root out the blockage.
- This process almost always damages the utility line that was bored through the sewer line.
- Damaging an electric line can lead to plumber being electrocuted.
- Damaging a gas line can lead to the gas migrating through the sewer lines into homes and buildings and result in a major accident that may involve deaths, injuries and significant property damage.

Western Pa , 2008



Flammable Range for Natural Gas



Potential Ignition Sources

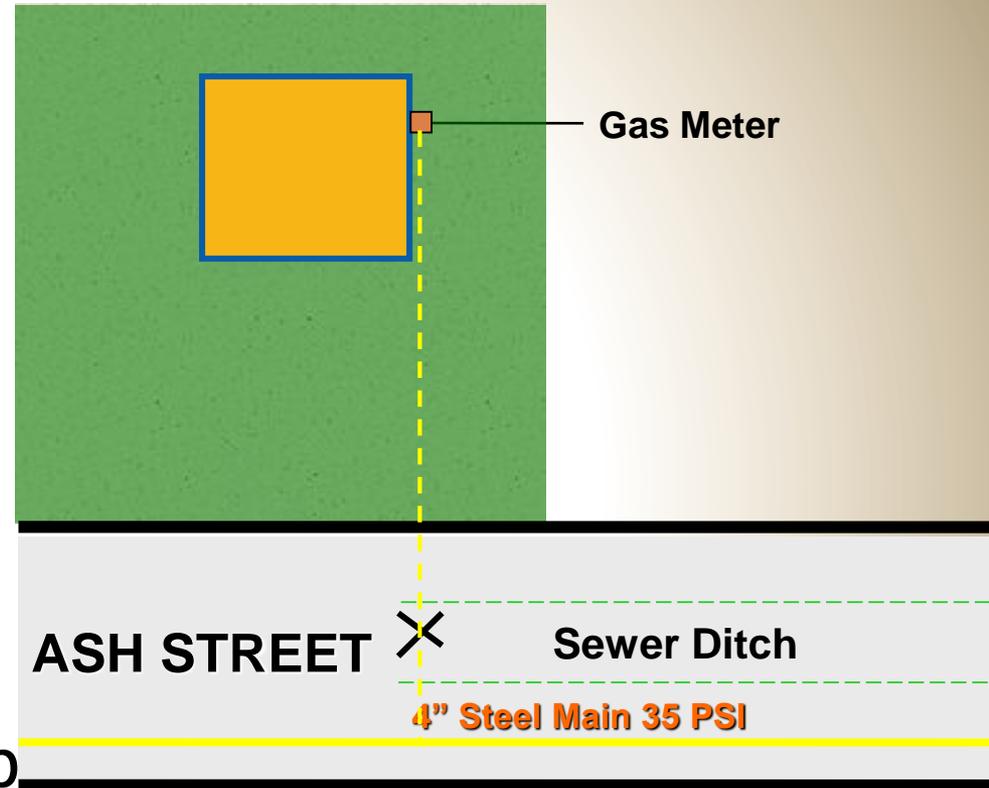
- Doorbell
- Light Switch
- Pilot Light
- Flashlight
- Telephone
- Electrical Appliance
- Automobile



- Backhoe
- Matches, Lighter
- Cell Phone/Pager
- Back-Up Generator
- Lightning
- **Static electricity**

Factors Affecting Gas Migration

- Soil type
- Soil moisture
- Surface cover/frost
- Line pressure
- Depth of burial
- Leak size
- Change in elevation=slope
- Path of least resistance



What is wrong with this picture?



REMEMBER

811

It's the Law

When to notify Columbia

- When gas is escaping (also 911)
- Dents, gouges and scrapes
- Pull on a gas line
- Put force on a gas line (up or down)
- Cut the tracer wire
- When your not sure what to do
- Safety is a choice. Make it your choice!

Columbia Gas of Ohio
Emergency Number
1- 800-344-4077

Damage Prevention Center
614- 481- 1200

Ohio Utilities Protection Service
1-800-362-2764 or 811

Questions ????????

Thank You!

Damage Prevention Starts with
YOU !!!!!!!!!