

Legacy Cross Bore Investigation

2016 Pipeline Safety Conference
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Consumers Energy

Count on Us

What is the Issue?

- Sewer laterals can be difficult to locate
- A trenchless installer can bore through a sewer lateral without knowing it
- Sewer collapses and clogs can occur years later
- Drain cleaners and plumbers have augured through energized gas lines, causing damage or rupture of gas lines allowing Medium Pressure Gas to follow the sewer lead back into house. <https://vimeo.com/37822753>



What is the Plan?

- **There are two parts to the Legacy Cross Bore Investigations at Consumers Energy**
 - Perform an office investigation to determine where gas lines were installed using trenchless technology. This involves researching work orders and construction prints.
 - Perform field Investigation of existing areas that had gas lines installed using trenchless technology. This will involve putting a camera in the sanitary sewer main and then the sewer lead up to the house or building.

What steps will be taken?

■ Legacy Cross Bores – Office Investigation

- Cross Bores have occurred in East Lansing, Hastings, Kalamazoo, Lansing, Leslie, Okemos and Owosso.
 - These were not being looked for but found during some other work on the Gas line or the Sewer line.
 - Some cross bores have been found by plumbers.
 - No homes were damaged as a result of these finds.
- List of schools and hospitals will be searched first
- The cities where cross bores have been found will be searched next.

What steps will be taken?

- **Legacy Cross Bore – Phase 1 Schools & Hospitals**
 - Investigate Main Projects that affected a School or Hospital and were installed after 1976.
 - There are 208 projects with 3016 services.
 - 159 School and Hospital plastic service taps installed after 1976 on main installed before 1976.
 - 3175 service locations to be inspected.

What steps will be taken?

- **Legacy Cross Bore – Scope**

- 603,470 total service taps on main installed after 1976.
- 472,606 plastic service taps installed after 1976 on main installed before 1976.(these are in addition to the taps in the first bullet)
- Assuming around 80% of services have sanitary sewer (not septic)
 - $603,470 + 472,606 = 1,076,076 \times .80 = 860,861$ service taps to be inspected.

What steps will be taken?

■ Legacy Cross Bore – Field Investigation

- Contractors use camera to inspect sewer
- If cross bore is found the conflict will be repaired and the location information will be recorded.
- A Database has been developed to keep track of all locations that have been inspected
- Pilot completed in 2014 in Kalamazoo where 52 sewer laterals were investigated and no Cross Bores were found.
- In 2015 there were 588 sewer laterals investigated and **one Cross Bore was found in front of a Dorm on the MSU campus.**
- **So far in 2016 two Cross Bores found in Jackson turned out to be Water Lines.**

What steps will be taken?

- **When a Cross Bore is found:**
 - Contact Senior Field Leader.
 - *Initiate a leak investigation.*
 - Alert customer to pending repairs.
 - Gas indicated – Send crew to repair immediately
 - No Gas indicated
 - Single Service - Schedule crew to repair.
 - Multiple Services – Develop plan to repair.
 - Sewer repaired by licensed contractor.

What steps will be taken?

■ Current Construction

- Gas Standards have the following statement.
 - *“When boring is required or likely, the drawing should also include contact information for any applicable municipality facilities (especially sewer facilities) to assist with field verification prior to construction to help alleviate the possibility of a cross bore.”*
- There are sewer locating companies under contract with Consumers Energy.
 - Main replacement work group is currently using them.
 - Contractors are responsible for locating and marking the location and depth at the building, property line and sewer main.

Public Awareness Effort

- Plumbers' brochure
 - Collaboration with DTE, SEMCO and MISS DIG
 - 14,000 businesses
 - Sent out in Feb 2015 & 2016

Underground Utility Color Code

Red - Electricity
Yellow - Gas, Oil, Steam, & Petroleum
Orange - Telecommunications & Cable TV
Blue - Potable Water
Purple - Reclaimed Water, Irrigation & Slurry Lines
Green - Sewer & Drain
White - Survey
White - Proposed Excavation

For more information about MISS DIG or safe excavation practices, please visit:
www.missdig.org

Program Sponsors:

2316 Catherine Road West
 Auburn Hills, MI 48326

Cross Bore Awareness
 Is that sewer backup the result of a utility line?

MISS DIG System, Inc.
www.missdig.org 1-800-952-7177

Be aware when clearing sewer lines. That clog just might be a utility line.

Facts:
 More and more facility operators, and their contractors, install underground lines using trenchless technology. Before using such technology, excavators are required to contact MISS DIG and request the marking of underground utility lines in the area of excavation. After existing lines are marked, excavators are required to hand dig and find these facilities before they bore over or under them. Many municipalities do not mark sewer leads, and as a result, excavators may end up "boring" through these lines without knowing it. This leaves in-service utility lines running through the sewer line itself.

Dangerous Situation:
 The presence of a utility line in a sewer line (cross bore) can go undetected for months, even years. Eventually a sewer backup develops and a plumber is called to remove the blockage. It is a common practice for plumbers to use a mechanical rotary device to root out the blockage. This process almost always damages the utility line that was bored through the sewer line. If an electric line is cut, the plumber is at risk for electrocution. If a gas line is damaged, gas can migrate through the sewer line and into home and buildings and could result in a major accident that may involve injuries, deaths, and significant property damage.

A blocked sewer line may be the result of another utility line (gas, electric, communications) having been accidentally bored through the sewer line. Attempting to clear this type of blockage can result in a serious accident involving loss of life, injuries, and significant property damage. Please follow the precautionary measures in this brochure to help prevent such accidents.

Safety Precautions:
 Before starting the process of cleaning out a sewer line that is blocked between the house and sewer main, please remember to:

- Inquire with the homeowner, occupant, building maintenance people to determine the location of the sewer facilities such as clean outs.
- If there has been any recent excavation to install underground utility lines.

Contact MISS DIG at 811 or www.missdig.org and request emergency staking request due to sewer blockage in order to have utility lines that might cross the path of the sewer line located and marked.

Use a camera to identify the location of the blockage. If the evidence of recent excavation or utility marks are the same distance from the building as the blockage, there may well be a cross bore causing the blockage.

If you suspect or determine the blockage is caused by a cross bore:

- Do not attempt to clear the blockage with a mechanical device
- Get help from the utility owner that may be involved

If you discover the confirmed existence of a cross bore:

- Contact utility owner if not on site already and request assistance with a possible sewer cross bore.

-If you suspect or smell a gas leak:

- * Leave and instruct others to leave area
- * Call 911
- * Contact the gas company
- * Do not operate any power equipment
- * Eliminate potential ignition sources
- * Do not tamper with gas lines, meters, valves, etc.

Industry Information

■ Industry Information

- Utilities that have a legacy cross bore investigation program have experienced a rate of 1 cross bore per 1000 sewer leads looked at.
- One contractor that did some work for Consumers Energy has information from some of their projects that shows a rate of 1 cross bore per 33 sewer leads looked at.
- Consumers Energy's experience has been 1 cross bore per 1001 sewer leads looked at.

Next steps

- Complete investigations of Schools and Hospitals.
- Develop work packets for cities where Cross Bores are known to exist.
- Start Legacy Cross Bore Investigations in affected cities.