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**DEPARTMENT OF TRANSPORTATION**

**Pipeline and Hazardous Materials Safety Administration**

**[Docket No. PHMSA-04-19856]**

**Pipeline Safety: Notice to Operators of Natural Gas and Hazardous Liquid Pipelines  
to Accurately Locate and Mark Underground Pipelines Before Excavation Activities  
Commence Near the Pipelines**

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

**ACTION:** Notice; Issuance of Advisory Bulletin.

**SUMMARY:** PHMSA is issuing this Advisory Bulletin to alert pipeline operators to the crucial need to accurately locate and mark underground pipelines before excavation activities occur near those pipelines. PHMSA's pipeline safety regulations require pipeline operators to implement comprehensive programs to prevent damage to underground pipelines during excavation. Recent serious accidents reinforce the importance of accurately locating and marking pipelines and highlight an urgent need for pipeline operators to review how they implement their damage prevention programs to prevent further accidents caused by excavation damage. This Advisory Bulletin provides guidance on how to do this.

**ADDRESSES:** This document can be viewed on the PHMSA home page at:

<http://www.phmsa.dot.gov>.

**FOR FURTHER INFORMATION CONTACT:** Joy Kadnar, (202) 366-0568, or by e-mail at Joy.Kadnar@dot.gov.

#### **SUPPLEMENTARY INFORMATION:**

##### **I. Background**

On November 11, 2006, a bulldozer operator struck and punctured a high pressure natural gas transmission pipeline near Cheyenne, Wyoming. The natural gas leaked and ignited, causing a fire in which the bulldozer operator was killed.

PHMSA has launched an investigation into the incident. Although we have not completed the investigation, we are issuing this Advisory Bulletin to remind operators of their role in preventing construction-related damage. The November 11, 2006, incident, like all cases of construction-related damage, was preventable. Following an appropriate damage prevention program is the best way to prevent such incidents in the future.

This is the second bulletin PHMSA has issued on construction-related damage prevention this year. In Advisory Bulletin 06-01, published in the **Federal Register** on January 17, 2006 (71 FR 2613), we described other preventable accidents caused by excavation.

Advisory Bulletin 06-01 specifically called on operators to ensure that individuals critical

to damage prevention at excavation sites are qualified to perform the necessary safety tasks. These tasks include line locating, one-call notifications, and inspection of excavation activities. In Advisory Bulletin 02-01, published in the **Federal Register** on May 24, 2002 (67 FR 36667), we pointed to the best practices on damage prevention found in the Common Ground Study and urged operators to follow them. The Common Ground Alliance is continuing the work on developing best practices begun with the Common Ground Study. These best practices are widely expected as providing the basis for conducting safe excavation near pipelines.

Investigations by PHMSA and its State partners continue to show that the pipeline operators involved in excavation damage-related incidents may not have complied with Federal pipeline safety regulations or their own construction and maintenance practices. Among the problems discovered are the following:

- Pipeline operators did not follow their procedures for constructing, repairing, ditching, and backfilling in areas where there are existing pipelines. Typically, procedures prohibit machine excavation within two feet of existing pipelines.
- Inspectors working for pipeline operators at construction sites failed to assist the operator's employees, the operator's contractors, and third-party construction contractors in verifying the marked locations of the existing pipeline facilities.
- Operators did not verify pipeline "as-built" drawings and make them available to the excavators at excavation sites before or during excavation activity.
- Operators did not mark pipelines at cross-overs.
- In locations with parallel pipelines, operators marked the wrong pipeline.

In many cases, pipeline operators did not correctly mark all pipelines in the vicinity of the construction and maintenance activities. In one instance, the spotter assigned to the task at the excavation site was not skilled enough to observe excavation and backfilling tasks. In another instance, the pipeline operator did not have a company representative review the location of the pipeline and verify that it was correctly marked prior to excavation. This violated the operator's own maintenance manual. This illustrates that good procedures can prevent accidents only if they are followed.

## II. Advisory Bulletin (ADB-06-03)

To: Owners and Operators of Natural Gas and Hazardous Liquid Pipeline Systems

Subject: Accurately Locating and Marking Underground Pipelines Before Excavation Activities Commence Near the Pipelines

Advisory: Excavation damage continues to be one of the three leading causes of pipeline damage. PHMSA continues to find pipeline operators damaging regulated pipelines, production and gathering pipelines, and other utilities adjacent to where construction and maintenance is being performed. This damage jeopardizes the safety of excavators, pipeline employees, construction personnel, and others in the vicinity of the excavation. To guard the integrity of buried pipelines and prevent injury, death, and property and

environmental damage, PHMSA advises pipeline operators to take the following damage prevention measures:

- Use safe excavation practices. Follow your procedures and processes for excavation and backfill. When constructing a new pipeline, honor the marking of existing pipelines.
- Locate and mark pipelines accurately before excavation begins. Do not rely solely on maps, drawings, or other written materials to locate pipelines.
- Make sure that individuals locating and marking the pipelines have the knowledge, skills, and abilities to read and understand pipeline alignment and as-built drawings, and that they know what other buried utilities exist in the construction area.
- Make sure that individuals locating and marking the pipelines have up-to-date pipeline alignment and as-built drawings.
- Make sure that individuals locating and marking the pipelines are familiar with state and local requirements on marking.
- Mark all pipelines, including laterals. This is especially important in areas where there is a considerable amount of new pipeline and utility construction.
- Consider environmental conditions such as rain and snow when selecting marking methods.
- In areas where the pipelines are curved or make sharp bends to avoid other utilities or obstructions, consider the visibility and frequency of markers.

- Confirm the accuracy of pipe locating before excavation begins. This applies when the pipeline operator conducts the excavation using its own employees or a contractor and when a third party is doing the excavation.
- Use qualified personnel for locating and marking pipelines. At a minimum, they should have received appropriate training such as that outlined in the National Utility Locating Contractors Association locator training standards and practices.
- Make sure excavators have sufficient information about underground pipelines at an excavation site to avoid damage to the pipeline. Facilitate communication during the excavation.
- Calibrate tools and equipment used for line locating and make sure they are in proper working order.
- Individually mark pipelines located within the same trench where possible.
- Follow the best practices on locating and marking pipelines developed by the Common Ground Alliance.
- When pipelines are hit or almost hit during excavation, evaluate the practices and procedures in use before continuing excavation activity.

Authority: 49 U.S.C. chapter 601; 49 CFR 1.53.

Issued in Washington, DC, on November 16, 2006.



Theodore L. Willke,

Acting Associate Administrator for Pipeline Safety.