

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: June 9, 1982

Forwarded to:

Mr. George Rainey
President
Jet Oil Company
600 Mid-Continent Building
Tulsa, Oklahoma 74103

SAFETY RECOMMENDATION(S)

P-82-18

At 1:38 p.m., c.d.t., on September 27, 1981, near Ackerly, Texas, the Chaparral Pipeline, a refined petroleum products 12-inch steel pipeline owned by the Santa Fe Pipeline Company, was damaged by a rathole drill bit; the wall of the pipe was weakened, and it ruptured under the 1,100 psig operating pressure. The ethane-propane mixture in the pipeline began to escape and was ignited by the drilling rig engine. The ensuing explosion and fire killed three persons; critically burned one person, who died 4 days later; destroyed the rathole drilling rig, a pickup truck, a road grader, a compactor, and 60 acres of cotton; and burned 12,749 barrels (535,458 gallons) of ethane-propane mixture. 1/

This is not an isolated incident; there have been other similar pipeline accidents involving drilling activities:

On September 4, 1981, a drilling rig, operated by a crew core-drilling for coal near Belle, West Virginia, punctured a 12-inch gas transmission line. The transmission line was operated by Columbia Gas Transmission Corporation, and at the time of the accident, was operating at a pressure of 600 psig. The rig operator was injured, the rig and a truck were destroyed, and an estimated volume of 3,433,000 cubic feet of gas was lost.

On October 2, 1981, a rathole rig drilling near Andrews, Texas, ruptured a crude oil gathering line. Sour crude oil escaped from the line. No one was injured.

On May 27, 1980, near Cartwright, Louisiana, an anhydrous ammonia pipeline operated by Santa Fe's Gulf Central Pipeline Company, was struck by a bulldozer which was being used to prepare a wellsite, and the pipeline ruptured. Over 100 people were evacuated from the area. 2/

Over 500 rotary drilling rigs are currently operating in the Permian Basin of West Texas and New Mexico, where 12 percent of the drilling activity in the United States takes place. A majority of the drilling is for development wells that are located in areas densely underlain by pipelines, many of which are unmarked. The surveyor, who staked

1/ For more detailed information, read Pipeline Accident Report--"The Chaparral Pipeline, Explosion and Fire, Ackerly, Texas, September 27, 1981" (NTSB-PAR-82-2).

2/ "Pipeline Accident Report--Summary Format, Issue Number 1--1982" (NTSB-PAR-82-1).

the jet well location, stated that he had staked and moved another location for the third time because of pipeline conflicts. The pipeline surveillance reports for the Chaparral right-of-way were also indicative of the extent of drilling activity. The preaccident patrol report noted, "MP 171 Drilling rig with slush pits 50 yards south of ROW," and the postaccident patrol report stated: "MP 4 1/2 Drill pads on north edge of ROW."

The operator (oil or gas company) is usually responsible for siting a well at a proper location and for other hazards on a drilling lease either by industry practice, permit requirements in some states (not Texas), or as in this case, by contractual agreement, 3/ which stated:

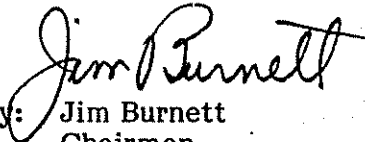
Responsibility for a Sound Location--Operator shall prepare a sound location, adequate in size and capable of properly supporting the drilling rig, and shall be responsible for a conductor pipe program adequate to prevent soil and subsoil washout. It is recognized that Operator has superior knowledge of the location and access routes, to the location, and must advise contractor of any sub-surface conditions, or obstructions (including, but not limited to mines, caverns, sink holes, streams, pipelines, power lines and telephone lines) which Contractors might encounter while en route to the location or during operations hereunder. In the event sub-surface conditions cause a cratering or shifting of the location surface, or if seabed conditions prove unsatisfactory to properly support the rig during marine operations hereunder, and loss or damage to the rig, its associated equipment or personnel results therefrom, Operator shall, without regard to other provisions of this contract, reimburse Contractor to the extent not covered by Contractor's insurance, for all such loss or damage including payment of work stoppage rate during repair and/or demobilization if applicable.

The Safety Board is concerned about the damage to pipelines caused by drilling activities and the use of outside excavation equipment since the location of a pipeline can be ascertained in several ways: on a title as a right-of-way encumbrance; on various maps used by the petroleum industry; from the property owner or others; as a trace on the ground; by use of a pipe locator or metal detector; by the pipeline company in response to notification through use of a "one-call" system where one exists; or by markings at its intersections with roads, in accordance with the requirements of 49 CFR 195.410.

As a result of this investigation, the National Transportation Safety Board recommends that the Jet Oil Company:

Establish a procedure to assure that the location of any pipeline potentially in conflict with a drilling location be determined before initiating any activities which may affect the existing grade. (Class II, Priority Action) (P-82-18)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS and BURSLEY, Members, concurred in this recommendation.


By: Jim Burnett
Chairman