National Transportation Safety Board

Washington, D.C. 20594

Office of Railroad, Pipeline and Hazardous Materials Investigations

October 13, 2021

Investigator-in-Charge's Accident Summary

NTSB Accident #PLD21FR003
Natural Gas-Fueled Explosion and Fire
August 15, 2021, Coolidge, Arizona

On Sunday, August 15, 2021, at 5:29 a.m. Mountain Standard Time, the Coolidge Police Department dispatch center received several calls reporting a fire and explosion near the Hohokam canal adjacent to East Randolph Road in a rural area of Coolidge, Arizona[1]. The Coolidge Police Department first arrived on scene at 5:31 a.m. and observed fire was shooting out of the ground in two distinct streams, forming a 'V' shape. The farmhouse at 4490 N Vail Rd, Coolidge, Arizona, located just north of the rupture, was a single-story wood framed dwelling constructed with stucco siding with a pitched foam layer roof. The rupturing of the pipeline caused a gas vapor explosion that created a blast wave that traveled northwest. The farmhouse was directly in the path of the blast and sustained severe exterior structural damage and interior damage to walls and objects located in the house. The blast wave and the gas-fueled fire engulfed the farmhouse structure, destroying it. When the rupture occurred, all three family members were in the home; two were killed and another survived the original blast but sustained serious injuries from the fire. The sustained exposure to the heat also resulted in the injury and death of several of the farm livestock.

At 5:33 a.m., Kinder Morgan's Colorado Springs Control Center observed a pressure decrease through its supervisory control and data acquisition system and contacted field personnel to isolate the affected pipeline segment. About the same time, the control center received a report of a massive fire near a nearby power plant and started shutting down equipment to decrease the amount of gas flowing towards the rupture location.

Isolation of the affected segment required closing two manually operated valves, one upstream and one downstream of the rupture. Kinder Morgan field personnel manually isolated the nearest downstream valve about 1 hour after the rupture but had difficulty accessing the closest upstream valve due to erosion from a previous rain. The closest upstream valve was isolated over 2 1/2 hours after the rupture, which aided in extinguishing the fire at 8:08 a.m.

The failed pipeline segment, Line 2000 is a 30-inch diameter natural gas transmission pipeline consisting of API 5L Grade X70 with a double submerged arc welded pipe longitudinal seam and a 0.281-inch wall thickness. It is owned and operated by El Paso Natural Gas Company, L.L.C. (EPNG), which is now

[1] All times are Mountain Standard Time unless stated otherwise.

owned by Kinder Morgan, Inc. (Kinder Morgan). The pipeline was installed in 1985 and previously transported crude oil; it was converted to natural gas service in 2002. EPNG was acquired by Kinder Morgan in 2012. The pipeline rupture resulted in the ejection of a 47-foot section of the pipeline. The gas pressure immediately prior to the rupture was 863 psig, which was under the maximum allowable operating pressure of 944 psig allowed under federal regulations.

Following the accident, NTSB investigators examined the site where the rupture occurred, gathered preliminary information, and conducted interviews. Visual examination showed the ejected section of Line 2000 fractured along its length in areas adjacent to the longitudinal weld.

Parties to the investigation include the Pipeline and Hazardous Materials Safety Administration, the Arizona Corporation Commission, the Pinal County Fire Investigation Task Force, the Coolidge Police Department, and Kinder Morgan, Inc.

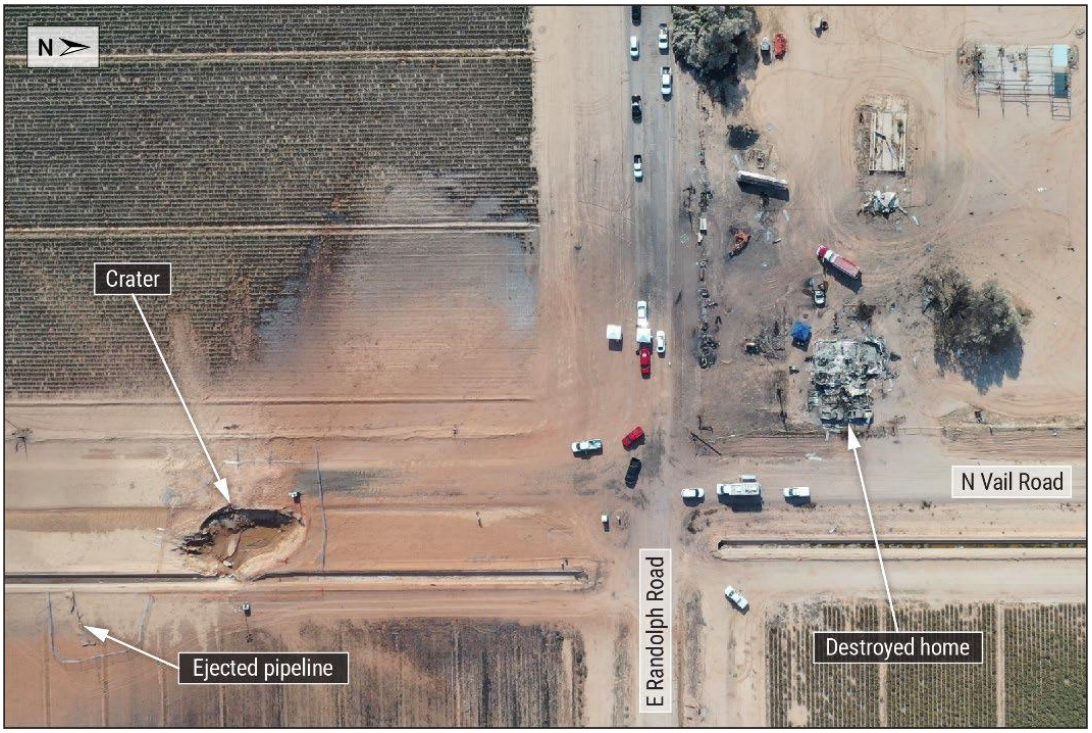

Figure 1. Aerial image of accident scene following the explosion. (Courtesy of the Pinal County Fire Investigation Task Force)