

Pipeline Near Miss

Lessons Shared



On July 20, 2019, Texas A&M Forest Service (TFS) resources were requested to the Oglesby Fire in Schleicher County, Texas. While performing initial attack operations, a dozer had a near miss with an 18-inch high-pressure hazardous liquid pipeline.

Narrative

On the evening of July 20, 2019 at 19:00, TFS received a request for assistance for a fire in Schleicher County, roughly 14 miles west of Eldorado, Texas. The initial report estimated the fire at 1,000 acres, burning in grass and brush with high rates of spread, and structures threatened. TFS dispatched one Type 2 dozer with a DZIA and an experienced swamper.



Dozer line across the first of three pipelines

TFS resources arrived on scene at 20:30 and tied in with the local Incident Commander (IC) at the driveway of a threatened home and County Road 425. Resources received a briefing and began to construct dozer line. During this time, the landowner stated that there was a water line and a telephone line buried along a fence that ran parallel to County Road 425. The landowner never mentioned pipelines or polylines. The established incident objective was to keep the fire south of County Road 425 due to a threatened structure, a considerable amount of oil

infrastructure, and continuous fuels on the north side of the county road. Due to limited cell service, the dozer crew was unable to use Collector for ArcGIS, which is commonly used to gather situational awareness and mapping information on initial attack and extended attack incidents.

The TFS dozer unloaded, secured the transport, and then proceeded to track west down County Road 425 towards the fire. The operator anchored in on an oil field access road and noticed two polylines above the ground near the access road. After pushing dirt to create a berm to cross over two polylines he began direct line construction, heading west.

The fire was burning very actively, relative to the time of night, and the thick fuel and smoke conditions from the broomweed made it challenging for the operator to see clearly.

The biggest concern as an operator was the broomweed. It was a sea of green.

- DZIA



This picture depicts the thick broomweed fuel conditions along the pipeline right of way

The dozer operator continued line construction where practical and the swamper burned out pockets. As he was pushing line, he noticed a pipeline right-of-way that was adequately marked with signage. Due to the operator's high level of experience and knowledge of the area, he believed that this pipeline was most-likely 24 to 36 inches deep. Feeling comfortable with the expected depth, he began to cautiously skim the top of the ground to create a firebreak. Unknowingly, he crossed two other pipelines (the 2nd one was hazardous liquid and the 3rd one was gas transmission), that were adjacent to the first pipeline. Looking further to the northwest, the dozer operator noticed that he was in a substantial pocket and abandoned his line construction.

At this time, the Regional Fire Coordinator (RFC) arrived on scene and TFS resources reevaluated the situation and discussed options. The RFC and operator decided to scout further west down County Road 425 to get a better picture of how far west the fire burned. After scouting, the decision was made to re-engage the dozer in a cold area of the fire and begin line construction from cold black to the north, towards County Road 425. Realizing that the fire tied into County Road 425, he then focused his efforts to the northwestern portion of the fire and started pushing from County Road 425, to the south.

The operator knew he would be crossing the first pipeline again and understood that he needed to mitigate for it, but was never aware of the other two pipelines. Continuing on, he crossed the pipeline region for a second time and constructed dozer line over all three pipelines. At this point, it was 04:00 the next day with minimal fire activity, so he decided to track back to the staging area to rest and then transition with the incoming resources at 10:00.

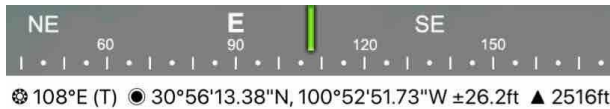
Over the next few days, relief resources assigned to the Oglesby Fire continued to improve existing dozer lines. These crews crossed the pipeline areas multiple times and in some instances, pushed new dozer line in the areas.

Most pipelines in this area are 24 to 36 inches deep, but this one was said to be 12 inches to ground level in some locations.

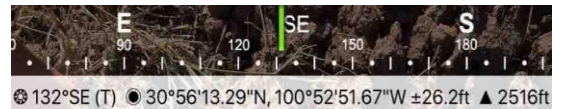
Pipeline Representative Remarks:

-DZIA

On July 24 2019, a damage prevention specialist with the pipeline company notified the RFC that dozer line had been constructed on top of their pipeline and one location had come within 5 inches of striking an 18-inch high-pressure liquid gas line. The pipeline was buried 12 inches below ground level at this location. The pipeline representative explained that this particular pipeline's depth is anywhere from 12-inches to ground level in some areas. It was installed in the 1940s before depth regulations were in place and is still heavily utilized by the oil industry.



Dozer line crossing pipeline right of way



Depth gauge showing approx. 5" from dozer line to pipeline

Lessons Learned

While this incident turned out safely for all involved, there was a high potential for serious injuries of those involved. Below are a few of the lessons taken away by the participants and FLA team.

- **How do you improve your situational awareness?**

The dozer operator is carded as an initial attack operator (DZIA) and is qualified to work type 5 fires without additional supervision. The operator utilized a swamper and RFC for scouting and overall situational awareness. The operator was also highly experienced and knowledgeable of the area. In the following days, relief resources also crossed the pipeline unknowingly in the day light. What steps are you taking to improve your situational awareness?

- **How do you use your UTV?**

Utility vehicles (UTV) can be configured in several different formats. A suppression unit can be mounted on the vehicle; they can carry cargo, shuttle people, and transport patients. With proper lighting, they can also be utilized during night operations to identify hazards that a dozer operator or ground resources may not see.

- **Do you know how to find information about pipelines?**

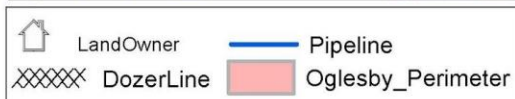
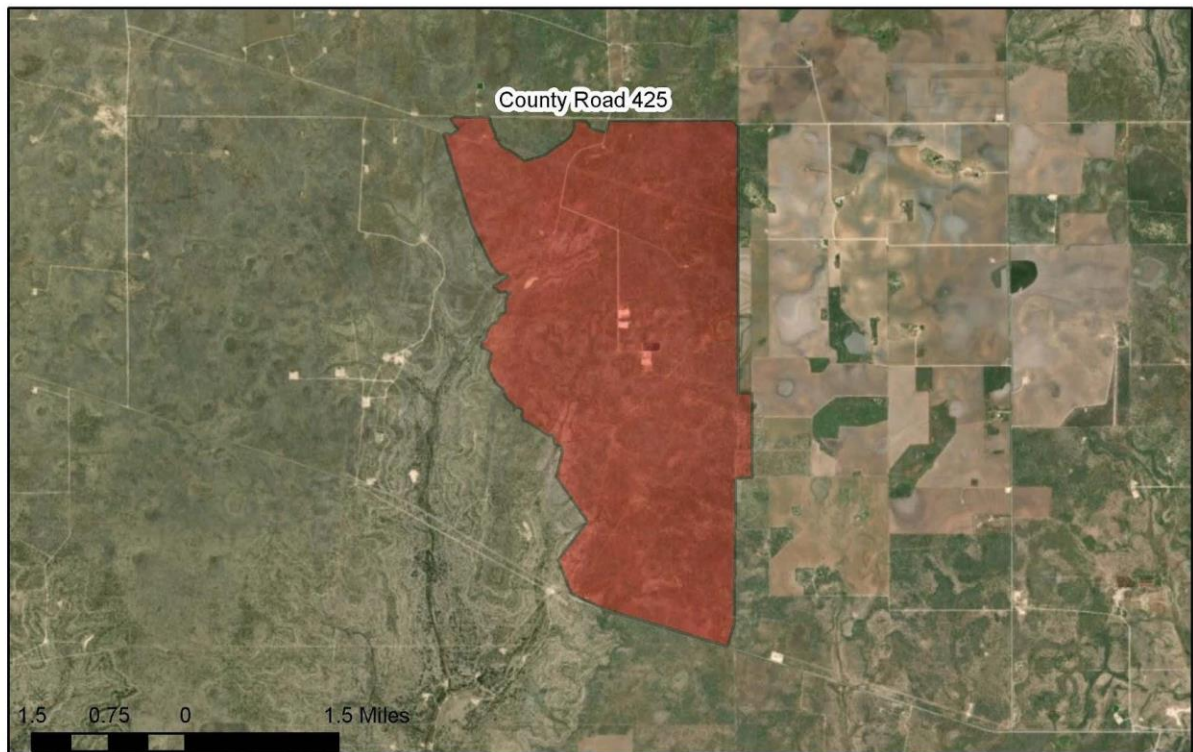
During the FLA process, several products were identified that may contribute to situational awareness regarding pipeline locations. One product is an aerial imagery/vegetation near-infrared distinction/pipeline map that can be downloaded to your mobile device and can be utilized as a base map when using Collector offline. A tablet or phone may be mounted inside a dozer to allow operators to view the imagery while operating.

Another pipeline product that was identified was the National Pipeline Mapping System: <https://www.npms.phmsa.dot.gov/>. Users can simply choose a state and county to get the pipeline data for that particular incident. This can be exported to a pdf map. This product is also available as an iPhone app.

- **Who is your contact if a pipeline intersects your fire?**

The ability to have a pipeline representative on hand during initial attack would be beneficial but is often unavailable. However, 811 should still be contacted by the IC or through dispatch. If a representative for the area is available, they will respond to the fire and aid with identifying hazards. Some dispatchers also include a Railroad Commission (RRC) Pipeline Locator Map when sending spot weather forecast information to the IC.

Pipeline Strike Near Miss FLA Map



08/05/19