



Case Study

Robotic Inspection of Parallel Pipelines Without a Receiver

Introduction

A client needed to inspect two parallel natural gas pipelines, 20" and 12" in diameter, both ending at a station without a receiver. Traditional pigging was not possible, and installing a new receiver would have required significant excavation, roadworks, and cost. In addition, the risk of a stuck pig was considered high, making retrieval complex and disruptive.

Intero offered an alternative using its Pipe Explorer Robotic Inspection technology, enabling the client to obtain integrity data without permanent modifications to pipeline station.

Pipeline Characteristics

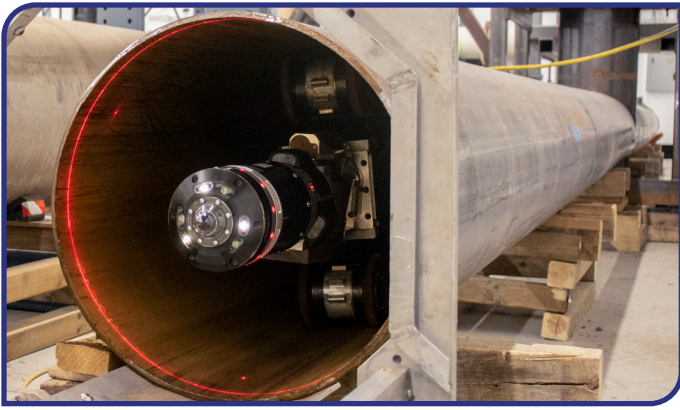
- Product: Natural gas
- Diameter: 20" and 12"
- Length: 2,000' of each diameter
- Location: Onshore pipeline ending at a station with no receiver

The Intero Integrity scope of work consisted of pre-commissioning activities

- Conducting a feasibility review and inspection planning
- Breaking down the pipeline into more convenient piggable and unpiggable segments, allowing conventional pigging of the longer section
- Deploying the Pipe Explorer Robotic Inspection tool for the 20" and 12" lines
- Performing robotic inspection of the final 2,000 ft
- Delivering high quality integrity data and reporting identified features
- Barred tee and capped end detected
- A conventional pig would have been stopped in its tracks by mismatched pipeline records

The Challenge

The inspection scope required data collection on two parallel lines, but the absence of a receiver created a major limitation. Installing one receiver would have required excavation and road repair, causing high costs and operational delays.



The client also wanted to avoid the risk of stuck pigs, which could have led to difficult and costly retrieval operations.

Challenging Pipe Characteristics

The project posed several technical challenges:

- No receiver installed at the station
- Barred tee and capped end detected in 12" line
- High risk of stuck pigs with conventional methods
- Excavation near infrastructure would have been disruptive and costly
- Liquid buildup in the 20" line reduced inspectable length

Feasibility and Engineering

Intero proposed a hybrid solution. The customer divided the pipeline into sections: a conventional pig was used for the longer section of the lines, while Intero's robotic tool was mobilized for the last 2,000 ft. The robotic inspection system was adapted to navigate the geometry and confirmed the presence of a barred tee and a capped end, which would have prevented passage of a conventional pig.

Inspection

The robotic inspection was executed on short notice to meet the client's schedule. Despite liquid buildup in the 20" line limiting inspection length, the 12" line was fully inspected. The project was executed safely and the anomalies were successfully identified. Despite the pipeline not being in accordance with its records, the inspection was successfully completed.

The Result

- Full inspection of the 12" line successfully completed
- Barred tee and capped section identified
- Significant cost savings by avoiding receiver installation
- Flexible excavation point chosen by the client
- Inspection delivered on short notice

Advantages

- **Safety & Flexibility:** No receiver installation required, reduced excavation, and minimized risk of stuck pigs
- **Efficiency:** Inspection completed within client's timeframe
- **Quality:** High quality data delivered for the inspected section
- **Cost-Effectiveness:** Major CAPEX savings by avoiding infrastructure modification

