

# 30-inch, Gas Pipeline Integrity

Unplanned water source failures and severe weather delays challenge integrity assessment

A midstream company required a Department of Transportation (DOT) integrity assessment on a 30-inch transmission gas pipeline. In order to meet federal compliance standards for continued gas operations, the operator elected to execute a hydrostatic pressure test between an existing compressor station and a mainline valve location. Several variables in the scope of work registered high in the preliminary risk assessment:

- Heavy populated commercial and residential areas required official notification and time for relocation.
- Heavy traffic railway corridors required official prior notice with no usage during pressure test schedule.

## PLAN OF EXECUTION

- 1. Pipeline Cleaning**
    - a. Chemical surfactants
    - b. Defoaming agents
    - c. Mechanical pigging systems
    - d. AquaGel Pig Systems
  - 2. Pipeline Flooding**
    - a. Utilization of filtered water from an adjacent natural source.
    - b. 1.5 miles of 8-inch above ground piping for source water transportation.
  - 3. Hydrostatic Pressure Test:**
    - a. 12-hour pressure stabilization period.
  - 4. Pipeline Dewatering**
    - a. Relinquish used test medium into natural surrounding per state regulations.
    - b. Mechanical pigging systems.
  - 5. Pipeline Air Drying**
    - a. Achieved dew point of -40°F and ¼ inch penetration.
- b. 8-hour approved pressure test.
  - c. 30-minute spike test at 139% of MAOP.
  - d. Utilization of real-time electronic data recording instrumentation.

## TECHNICAL ACHIEVEMENTS & BENEFITS

- Successfully executed Management of Change (MOC) orders to accommodate clean pipe specifications.
- Responsive field supervision provided real time solution for unplanned water source failures.
- Executed 24-Hour SIMOPS schedule to overcome severe weather delays as a result of a tropical storm.
- Test medium discharge satisfied state environmental regulations.
- Jobs completed with zero incidents and no environmental impact.

## LOCATION

Louisiana (US)

## SPECIFICATIONS

**Diameter: 30 inches**  
**Length: 16.5 miles**  
**Wall Thickness: 0.375 inches**  
**Maximum Allowable Operating Pressure (MAOP): 1,440 psi**

## CHALLENGE

- **Engineered pig train calculations for chemical cleaning.**
- **Engineered volumetric calculations for pipeline flooding.**
- **8-hour CFR standard hydrostatic pressure test; 30-minute CFR standard hydrostatic spike pressure test.**
- **Pre-engineered pipeline calculations for de-watering procedure to prevent air lock on elevation profile changes.**
- **Pipeline fluid water treatment as specified by state guidelines.**
- **Drying to -40°F with ¼" penetration for product preparation.**