



SECURE WATER SUPPLY FOR TEXAS' HYDRAULIC FRACTURING



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Midland, TX, February 2018, Hydraulic Fracturing or “Fracking” is a process in which a highly pressurised mixture of water, sand and chemicals is injected into the ground as far as 10,000 feet below the surface in order to extract natural gas embedded inside the fine cracks of the shale rock formation. Up to 6 million gallons of water, roughly corresponding 200 tanker trucks, can be required to achieve the desired conveying results, considerable water requirements, making obvious that the security of water supply is essential for a technically and economically successful production process.

CALCIUM CARBONATE AFFECTING PIPELINE INTERIOR

In February 2018 MTA Messtechnik GmbH was commissioned to proceed an untethered multisensory inspection of a HDPE water line in Midland, TX with the purpose to determine possible decreased pipe diameter due to potential calcium carbonate (scale). The inspection was carried out by means of MTA Pipe-Inspector® equipment, DN125 (5”) for use in pressurised water pipelines.

FLOW VELOCITY AND TURBIDITY

Turbidity measurements were taken at the inspection start and end point providing results ranging from 25.4 to 42.6FNU, far above 8FNU, the upper limit to achieve satisfactory video data allowing an optical pipeline condition determination. On that account the inspection’s focus was on the acoustic inspection over a distance of 5,721m (18,770ft).



MTA Pipe-Inspector® Inspection, Start Point



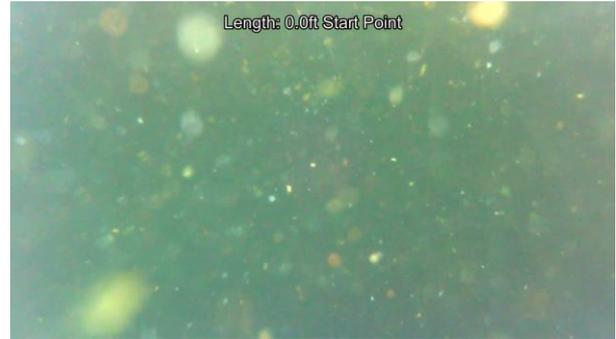
Tracked above ground to monitor flow velocity and the continuous forward movement inside the pipe. By starting an additional pump increasing the upfront measured flow velocity from 0.4m/s (1.3ft/s) to 0.79m/s (2.6ft/s) it was possible to reduce the calculated duration of the inspection from originally 4 hours down to 2 hours.



MTA Pipe-Inspector® Inspection, Device Tracking

POOR VISIBILITY AND DATA EVALUATION

Despite the very limited view in the pipeline the gained data were sufficient to determine the absence of air pocket along the inspected section.



MTA Pipe-Inspector® Video Data, Turbidity

The interpretation of the recorded acoustic data provided no indications for leakages nor decreased inner diameter due to calcium carbonate or any other incrustation or sediments.

PROJECT DATA

Total length	18,770ft (5,721m)
Diameter	18"/14" (DN450/350)
Pressure	max. 150psi (10.34bar)