



Major Improvements in Instrument Technology Create Effective Method for Ultrasonic Measurements

by Cliff Moore

Internal corrosion monitoring of pipelines generally requires sensors that must be installed directly in the line.

In many cases this requires periodic accessibility with the inherent potential for leakage and in many cases the sensors cannot be located at the

point(s) of expected maximum corrosion.

It should also be noted that most corrosion sensors are measuring the corrosion rate of the fluid, but not the actual loss of pipe wall thickness.

There have been a number of ad-

vances in ultrasonic transducer and instrument technology that have increased the resolution and repeatability of ultrasonic measurements.

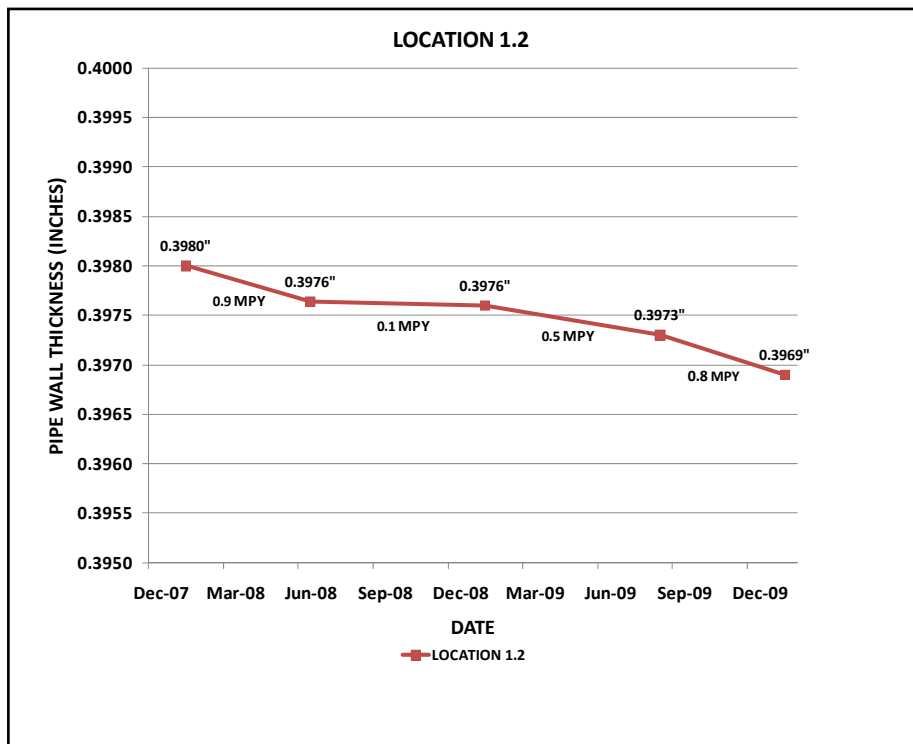
Resolution has been improved to 0.1 mil (0.0001") and temperature compensation has been adapted so that variations in the pipe wall temperature can be measured and the thickness compensated for temperature variations.

The higher resolution and temperature compensation allows internal corrosion rates to be determined in much shorter time periods than ever before.

No longer is periodic access to the pipe necessary since the transducers are permanently mounted on the pipe. This eliminates the measurement errors due to variations in liquid couplant thickness and the precise locating of the transducer.

After mounting and backfilling, the transducer cable is routed to a surface mounted test box or other convenient location to facilitate periodic measurements.

Remaining pipewall thickness can be determined from any single measurement and short term corrosion rates can be determined between any two thickness measurements.



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OUR PEOPLE AT WORK



Founder Melvin Schiff



Senior Engineer Brendan Sheehan



Coatings Supervisor Greg Mieczkowski



Field Engineer Tom Eynon



Senior Instrumentation Manager Cliff Moore and client



Senior Corrosion Engineer Joe Pikas and CP Specialist Dan Ruane



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