U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration

PHMSA Accomplishments

Pipeline Safety Research & Development

EMAT Sensor for Small Diameter and Unpiggable Pipes; Prototype and Testing DTPH5615T00018L

Pull testing performed by Q-Inline at testing facilities in Texas

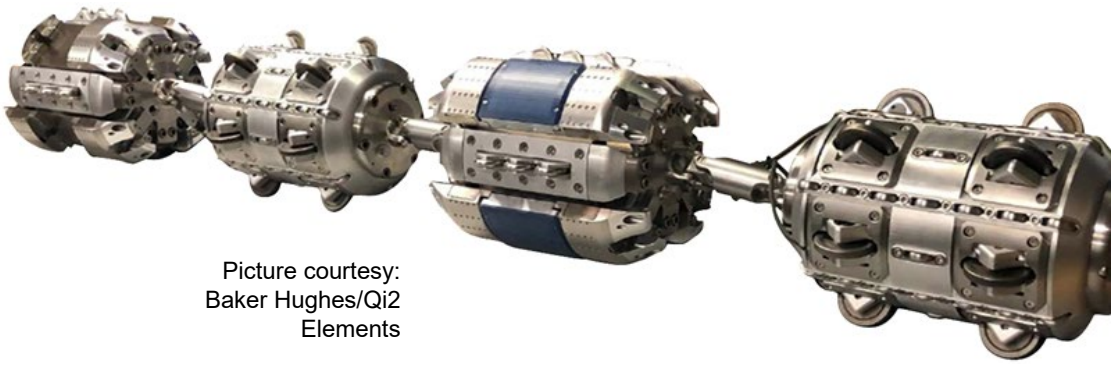
Pictures courtesy: Operations Technology Development

Main Objective

To build a field-ready EMAT sensor prototype and perform controlled field tests to assess its performance requirements and capabilities in identifying and characterizing pipe defects. The field-ready prototype will be designed for 8" diameter pipes.

NET Improvement

The project developed and then demonstrated the ability of the Electro Magnetic Acoustic Transducer (EMAT) crack tool to detect tight/closed cracks down to 2MM deep for 8" diameter pipes in traditionally difficult to inspect pipelines. The Intellectual Property from this research and from the prior research project under PHMSA contract # DTPH56-13-T-000007 evolved into a free-swimming tool that operates at 2 m/s, navigates 1.5 diameter bends, and can be pressurized to 2,200 psi. The EMAT Crack In Line Inspection tool is now being offered by Baker Hughes/Qi2 Elements.



Picture courtesy: Baker Hughes/Qi2 Elements

Commercial Partner

Baker Hughes

Qi2 Superior Inspection Intelligence ELEMENTS

PHMSA Funding

$1,070,690

Public Project Page

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US Patent under DOT Contract

N/A