InfraMetrix℠

INFRASTRUCTURE DIAGNOSTIC SERVICES

## BEM Survey Advantages

- Scans any ferrous material pipe – ductile iron, cast iron, steel, wrought iron and others
- Scans through linings and coatings up to 2 inches without requiring removal
- Completely non-invasive to pipelines; sandblasting or grinding not needed – no need to take pipeline out of service
- Provides a comprehensive record of wall loss over the scanned section of the pipeline
- Scanning process is repeatable and provides accurate results
- Equipment is robust and easily handled by an operator
- Real-time display provides immediate information on metal loss to 1 mm, graphitization, and fractures without further processing


InfraMetrix℠
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# BROADBAND ELECTROMAGNETIC (BEM) SURVEYS

The service life of pressure pipe such as force mains is much less than the service life of gravity sewers and even water mains. Utility managers, when deciding whether to investigate pipelines' condition within an asset management program, also face the dilemma that many factors besides pipe age may contribute to their expected service life.

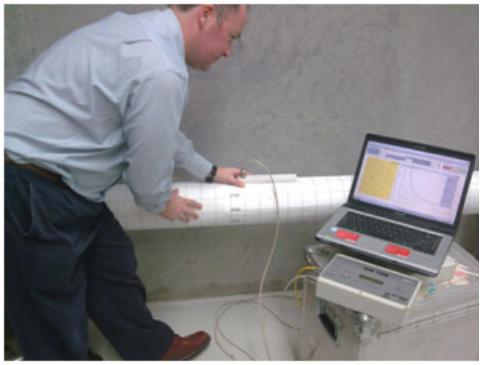
InfraMetrix℠, a leader in the utility condition assessment field, offers decisionmakers a state-of-the-art investigative tool that provides a lower-cost, quick turnaround approach – the Broadband Electromagnetic (BEM) current system. An application of electromagnetic or eddy current systems, BEM produces a complete profile of a ferrous pipe, allowing the investigator to gauge the thickness of the metal and to evaluate the metallurgic changes such as graphitization. The frequency-independent BEM system is less affected by background electromagnetic noise, and the operating frequency can be modified to suit pipe material and site conditions.

An external BEM assessment is a less costly technique since it does not require taking the pipeline out of service for prolonged periods of time. Also, because it does not require close contact with the metal, the operator using BEM can scan through coatings, linings and insulation. Internal assessments can be conducted by confined space entry, Remote Field Technology, or pigging devices.

**How BEM works:**

A typical BEM scan is conducted using a hand-held tool within the excavation. Typically the operator establishes a circumferential and longitudinal grid and moves the antenna around, taking successive readings, which are stored on computer.

Post-survey processing by InfraMetrix℠ personnel provides a preliminary condition assessment report including a contour map of surveyed sections from real-time data. This is then interpreted to provide data on apparent wall thickness, evidence of internal and external corrosion, to establish a rate of corrosion and, using a mechanistic model, to predict the remaining life of the pipe.



*Providing innovative and affordable infrastructure diagnostic services to help clients prioritize long-term water, wastewater and storm water maintenance and capital investments for improved performance.*

KEEPING THE FUTURE IN VIEW