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Guided Wave Ultrasonics

Fast, efficient corrosion inspection of above and below ground pipes

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Guided Wave Ultrasonics

PetroChem Inspection Services offers Guided Wave Ultrasonics Inspection for the inspection of above and below ground piping. Guided Ultrasonics (GW) is a low frequency ultrasonic wave technique developed for the purpose of surveying pipe at an accelerated rate to detect both internal and external corrosion indications. This technique provides the client with flexibility of inspecting tens of feet of pipe from a single remote location. The ability of this system to send waves along the length of the pipe means that very difficult to inspect areas, such as road crossings, can be examined from a remote and easily accessible location. The inspection can usually be performed while the pipe is in service. The Advanced Inspection Services Department offers both Teletest Focus® and Guided Ultrasonics G3® in our line of services.

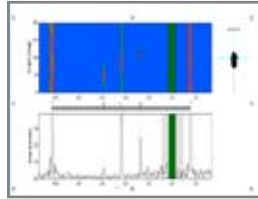
The Teletest Focus® is the third generation in Guided Wave technology manufactured by Plant Integrity (TWI).

- Generates torsional, longitudinal and flexural waves
- Pipe sizes from 2" to 48" can be tested
- Clamped and inflatable for minimal set up time
- Most testing can be performed in service
- Low voltage battery for up to 12 hours of testing
- Utilizes Focus® software to enhance anomaly classification

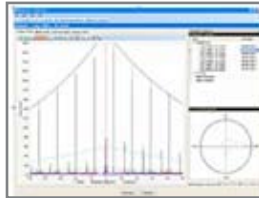
The G3® is the third generation Guided Wave technology manufactured by Guided Ultrasonics LTD.

- Generates torsional, longitudinal and flexural waves
- Pipe sizes from 2" to 48" can be tested
- Clamped and inflatable rings for minimal set up time
- Most testing can be performed in service
- Low voltage battery for up to 12 hours of testing
- Utilizes Wavemaker® software to enhance anomaly classification





EFC enables the technician to determine orientation of the symmetry plane. New developments have extended this capability so that more precise orientation information can be displayed in an unrolled pipe display that mimics a C-scan plot of the pipe wall. The contour map shows the orientation and distance of any pipe features.



FOCUS® makes it possible to focus ultrasound at any point both along and around the pipe, thus improving flaw detection capability. It also means that it is possible to determine the approximate circumferential extent and depth of any flaw that has been identified using the equipment in its original screening mode. Using the Version 2 software, it is possible to switch from screening mode to focusing at a specific distance from the tool.

Enhanced Focusing Capability (EFC) and FOCUS®

This capability allows the technician to “focus” in and isolate areas of concern to better distinguish location, size and circumferential extent. Each system uses these techniques to yield greater reliability and increased production

Applications

Guided Ultrasonics have a wide variety of uses in the industry. The technology allows for the testing of piping in limited and non accessible locations with substantial cost effective results. Access to the structure under test is only required at the test position (remote inspection) which makes guided wave screening technology an ideal solution for inspecting:

- Inaccessible areas such as cased road crossings
- Insulated piping systems (CUI)
- Piping passing through dikes and concrete walls
- Jetty and wharf piping
- Offshore piping (splash zones)
- Boiler/Heater tube inspections
- Buried pipelines between excavations
- Overhead piping on towers
- Piping to locate welds and attachments





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