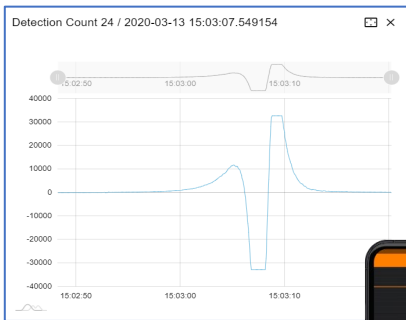




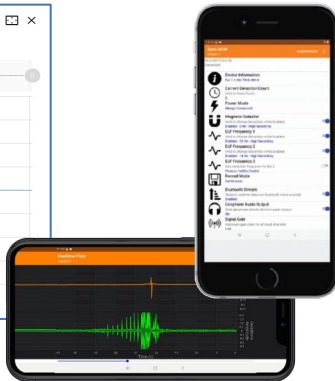
Pipeline Integrity Support Services

Experience to support pigging or in-line inspection projects anytime, anywhere.

- Above Ground Marker (AGM) GPS surveys (sub-centimeter, sub-decimeter, sub-meter)
- Pig Tracking (cleaning, batching, gauging, purging, inline inspection)
- Inline Inspection Tool lifting and loading/unloading
- Anomaly Dig Staking & As-Built documentation
- Pigging Inspectors to oversee in-line inspection projects
- Pipeline Depth of Cover & GPS Centerline Surveys
- Pipeline Marker Placement and Installation
- NORM & Benzene Monitoring
- Remote Pig Tracking & Web Based Pig Tracking application.
 - a. See and hear AGM Passage from PC or laptop
 - b. Notifications via text and/or email



Remote Pig Tracking



Above Ground Marker Survey & Documentation

TIR has systems in place to accurately record all location data information for AGM Survey. We have the capability to survey AGM locations using sub-meter, sub-decimeter, or sub-centimeter accuracies. A comprehensive GPS processing and quality control procedure is performed on each survey project. Standard and customized reports are available to support client GIS needs including PODS and ESRI.



Above Ground Marker (AGM)

Project and Data Management

- TIR provides data management services that include detailed customized spreadsheet and PDF reports, KMZ/KML data files, and cloud project file sharing.
- We can support our clients with:
- Inline inspection project consulting, including launcher and receiver review and recommended modifications
- Preparation for inline inspection such as AGM documentation and survey, assessment of launch and trap facilities, pipeline cleanliness, and line suitability to pass an inspection tool
- Historical as-built repair and maintenance record search and analysis
- Project cost tracking
- Third-party auditing of pipeline AGM survey data

Dig Staking & Excavation Support

TIR can provide accurate and efficient dig site staking based on inline inspection defect mapping coordinates and/or manual chaining from AGMs. During excavation, TIR surveyors are available to assist in verifying anomaly and target weld locations. TIR can document the excavation and resulting repair with comprehensive digital as-built documentation.



Dig Staking

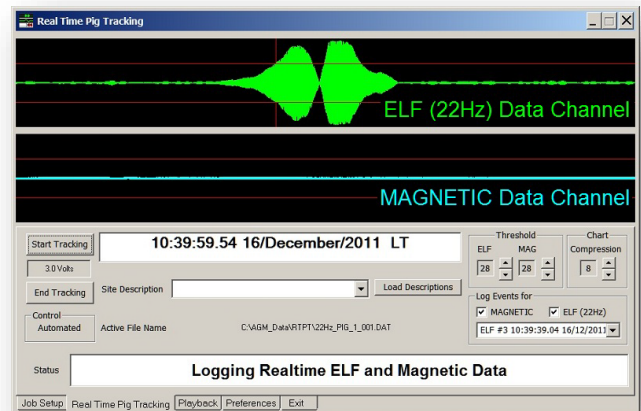


Pig Tracking

TIR provides 24-hour pig tracking for all types of pigging projects. We have extensive experience in tracking pigs in all types of applications and terrains: purging, cleaning, hydrotest, batching, gauging, inline inspection, location of stuck or lost pigs. We are fully equipped with all the modern tracking technologies such as geophones, transmitters, receivers, computers with GPS navigation, and tracking software.

TIR uses industry-leading Trimble™ GPS equipment:

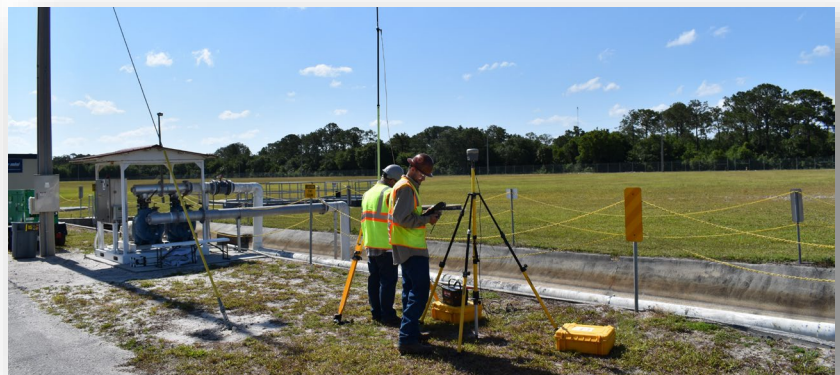
- R10 / R12 / RTX (centimeter)
- Geo 7x (decimeter & meter)
- A database system to hold all survey and tracking data. The data can be exported to meet customized client requirements in any format and all reporting data is subject to an extensive QA/QC process.



Pig Tracking



AGM Tracking the Pig



AGM / GPS Surveys



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