

TDW Non-Destructive Examination & Repair Service

TDW trained technicians are highly experienced in pipeline preparation, cleaning, tracking, inline inspection runs, anomaly staking and expert anomaly assessments, followed by timely, detailed reports and repairs, including: RES-Q® composite wrap, welded sleeves, clamps and hot tapping & plugging service for line segment replacement.

Direct In-Field NDE*

Our pipeline integrity inspection service offers an extensive suite of in-ditch pipeline inspection techniques using mechanical ultrasound, magnetic particle and dye penetrant to assess the condition of your pipeline.

Our services** include:

- Review of all pipeline data
- Soil and topography assessment
- Coating assessment
- Location verification at dig site
- Sampling and deposit analysis
- Surface preparation and profile measurement
- Data comparison & correlation
- Anomaly mapping & defect assessment including ID/OD mapping, crack evaluations, SCC detection

Typical NDE Personnel & Equipment:

- ASNT level II technicians with operation qualification certifications
- Magnetic Particle Inspection (MPI)
- Ultrasonic inspection (UT thickness and flaw detection/sizing)
- Pit gauge measurement
- Dent measurement
- Advanced ultrasonic testing
 - A, B and C scan imagery
- Phased Array (UT)
 - Crack profile & sizing
 - Girth weld examination (in lieu of radiography)

Anomaly Location Verification

Direct in-field examinations include:

- Correlation of inspection reports (pipeline features, anomalies, dig sheets and AGM listings) and pipeline data (alignment sheets, GIS reports, etc.)
- Depth of cover and GPS data benchmarking
- Staking anomaly dig site locations (GPS & chaining from known points)
- Anomaly location confirmation (assisting excavation crews)
- Report delivery (complete documentation)*

Personnel & Equipment:

- Trained technicians with operation qualification certifications
- 4 x 4 service trucks
- GPS survey system and line locator
- Field survey tools and materials

Report Delivery

- Anomaly Identification
- Defect data
- Pipe & soil pH readings
- Pipe to soil potential readings
- Calculation reports (R-STRENG & KAPA)
- Repair report location
- Detailed photos
 - Excavation
 - Anomaly
 - Repairs
- Long seam profile
- Anomaly location (odometer)
- Anomaly location (o'clock)

Composite Repair Wrap

TDW RES-Q® Composite Repair Wrap system installations for anomaly repair method include:

- RES-Q® Composite Repair Wrap solution installations for anomaly repair method include:
 - wrap design (RES-Q ProCalc® software)
 - Surface preparation
 - Putty application (for dents, gouges, grooves, arc burns, and metal loss in excess of 20%)
 - Epoxy barrier wrap and carbon wrap
 - UV topcoat or pipe coating (contingent upon customer requirement & specification)
 - In-line inspection band markers (contingent upon customer requirement & specification)

TDW RES-Q® Composite Repair Wrap complies with:

- ASME B31.4 or 31.8
- 49 CFR 192 & 195
- Composite wrap standard: ASME PCC-2-2006 and ISO 24817-2006

TDW offers various pipeline inspections (i.e. API 1104) and repair methodologies (product & service) and can include hot tapping & plugging (cut-out and replace), weld sleeves and bolt-on clamps. Contact TDW for more information.



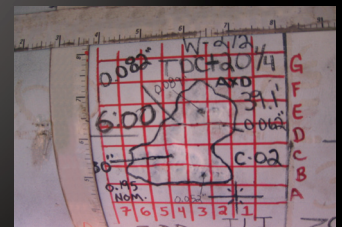
Anomaly Locating



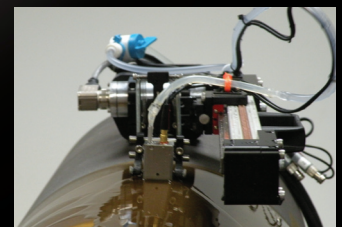
In-Ditch Assessment



Accurate measurements



Corrosion mapping



Hot Tapping & Plugging

* Non Destructive Examination. ** Contact us for a sample report of our in-field assessment service.

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Pipeline Performance™

T.D. Williamson, Inc.

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