



NON-DESTRUCTIVE TESTING  
AND INSPECTION SERVICES

A grayscale photograph showing a hand holding a handheld electronic device, likely a handheld ultrasonic flaw detector. The device has a small screen and several buttons, including one labeled "SEL" and another labeled "SET". The background is a blurred industrial environment with various mechanical parts and structures.

**INNOVATION  
FOR A SMART FUTURE**

# WHO IS NDT GROUP?

NDT Group Inc. is a leader in non-destructive testing and related services. We pride ourselves in offering client-focused solutions backed by expertise. We are an integral part of our clients' safety, quality, and maintenance programs.

Our technicians and team of engineers are experts in inspection of new construction, fabrication and in-service assets and components.

Our professional teams are indispensable leaders to conventional and nuclear power generation, storage systems, forging, manufacturing, and petrochemical projects throughout Canada.

## **We stand out from our competitors by:**

- offering more training opportunities for our staff
- offer one-on-one consultations
- invest time to describe and explain findings to our clients
- use cutting-edge technologies
- creating custom solutions for our clients' unique needs



# WHAT WE DO

We provide all of Canada with reliable state of the art NDT services such as:

- **Conventional Non-Destructive Testing** (UT, RT, MT, PT, ET, VT)
- **Advanced NDT Services** (PA, TOFD, CR, DR, RTR, Laser Scanning, Rope Access)
- **Visual Inspection** (CWB, API 510, 570, 653, NACE, borescope, remote visual)
- **Engineering Services**
- **Material Testing** (PMI, LIBS)
- **Pipeline, Facility, and Mechanical Integrity**
- **Lifting Equipment Inspection and Certification**

# MISSION

Our mission is to be a recognized leader in non-destructive testing (NDT) and inspection related services.

We strive to constantly exceed our customers' expectations, and provide long-term value.

# VISION

Our vision is to provide industry with high quality inspection services through experienced and qualified personnel using state of the art technology and conventional methods to provide customer-focused service and reliability.

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# INDUSTRIES WE SERVICE

- Oil & Gas
- Manufacturing and Fabrication
- Hoisting and Lifting Equipment
- Power Generation
- Transportation
- Pulp and Paper





# ULTRASONIC TESTING (UT)

**Ultrasonic Testing (UT)** is a non-destructive inspection method that uses high-frequency sound waves (ultrasound) to measure geometric and physical properties in materials. One of the primary benefits of UT is that it is a truly volumetric test. The characteristics of ultrasound allow highly trained technicians to detect, position, size, and characterize a flaw or discontinuity.

## CONVENTIONAL UT

- Crack Sizing
- Lamination Scan
- Immersion Testing
- Shear Wave Weld Inspection
- RAW Material and Manufactured Products
- High Temperature UT



## ADVANCED UT

- Phased Array (PAUT)
- Time-Of-Flight Diffraction (TOFD)
- Corrosion Mapping (AUT C-Scan)
- AUT HIC/SOHIC C-Scan and Welds
- Advanced UT Techniques
  - High-Temperature AUT
  - Creeping Wave
  - Stainless Steel and Austenitic Welds
  - Dissimilar Metal Weld (DMW)
  - High Temperature (TOFD)

## APPLICATIONS

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Thin-walled Austenitic Welds</li> <li>• Heavy Wall and Complex Geometries</li> <li>• Sizing of Stress-Corrosion Cracking</li> </ul> | <ul style="list-style-type: none"> <li>• AUT for internal wall loss and mid-wall indications</li> <li>• Dissimilar Metal Welds</li> <li>• Pipeline Girth Welds</li> </ul> |
|--|---|



# RADIOGRAPHY (RT)

**Radiography (RT)** is a non-destructive inspection method based on using short-wavelength electromagnetic radiation passing through the material. Materials with areas of reduced thickness or lower material density allow more, and therefore absorb less, radiation. The radiation, which reaches the film after passing through the material, forms a shadow image on a photographic film (radiograph). NDT Group specializes in radiographic testing for all pipelines and related facilities and fabrication in the oil and gas industry.

## CONVENTIONAL RT

- Gamma
- X-Ray

## ADVANCED RT

- Digital Radiography (DR)
- Computed Radiography (CR)
- Real-Time Radiography (RTR)

## APPLICATIONS

- Pipeline Girth Welds
- Pipeline Fittings
- Welding Fabrication
- Forgings
- Castings
- Wall Thinning (Shadow Shots)
- Corrosion Under Insulation/Supports





# VISUAL ASSET & WELD INSPECTION

**Visual Inspection (VT)** relies upon the detection of surface imperfections using the eye or remotely using borescopes or videoscopes. Normally applied without the use of any additional equipment, VT can be improved by using aids such as a magnifying glass and white light to improve its effectiveness and scope.

## WE PROVIDE THE FOLLOWING SERVICES:

- **Conventional Visual Inspection:**
  - CWB Weld Inspection
  - NACE Coating Inspection and Refractory (API 936)
  - API Asset Integrity (510, 570, 653)
  - In-Service Weld Inspection
- **Advanced Visual Inspection:**
  - LiDAR – Laser Mapping
  - Creaform Handyscan – Handheld laser mapping
  - Drone Inspection
  - Borescope Inspection
  - Robotic Crawlers



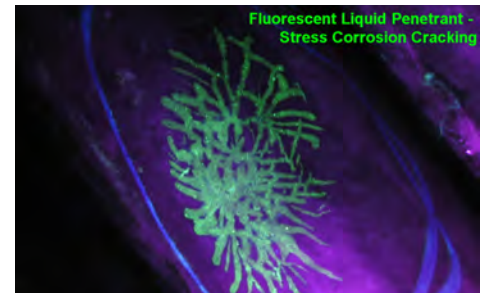


## LIQUID PENETRANT (PT)

**Liquid Penetrant Testing (PT)** reveals surface flaws by the "bleed-out" of a penetrating medium against a contrasting background. This is done by applying penetrant to the surface and flaw of the item being inspected. The penetrant liquid will be drawn into any surface opening by capillary action. Following the removal of excess penetrant, an application of a developer reverses the capillary action and draws penetrant from the flaw. The resultant indications reveal the presence of the flaw so that it can be visually inspected and evaluated.

### METHODS OFFERED:

- Visible penetrant
- Fluorescent penetrant
- High-Temperature penetrant
- Food grade penetrant.



## MAGNETIC PARTICLE (MT)

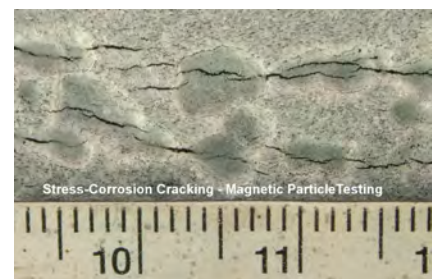
**Magnetic Particle Testing (MT)** is used to locate surface and slightly subsurface discontinuities in ferromagnetic materials. Such flaws present in a magnetized part will cause a magnetic field to leave the part. If magnetic particles are applied to this surface, they will be held in place by the flux leakage to give a visual indication.

### METHODS OFFERED:

- Yokes
- Direct current (DC) yokes
- Portable Alternate Current (AC) yokes

### MAGNETIC PARTICLES:

- Dry powder
- Wet Particles (Colour Contrast, Fluorescent)





# LIFTING EQUIPMENT INSPECTION

Lifting and Hoisting Equipment consist of a wide array of devices providing critical and essential services to all types of industries. Our non-destructive testing methods can detect cracks that may not be visible to the naked eye. Our expert team of inspectors and engineers can provide support on the inspection and non-destructive testing of wire rope, wear pads, rigging, hydraulic cylinders, sheaves, outriggers, boom sections and more. Our comprehensive reports with clear results and prompt service put us ahead in the industry that others try to imitate.

## LIFT INSPECTION COMPONENTS

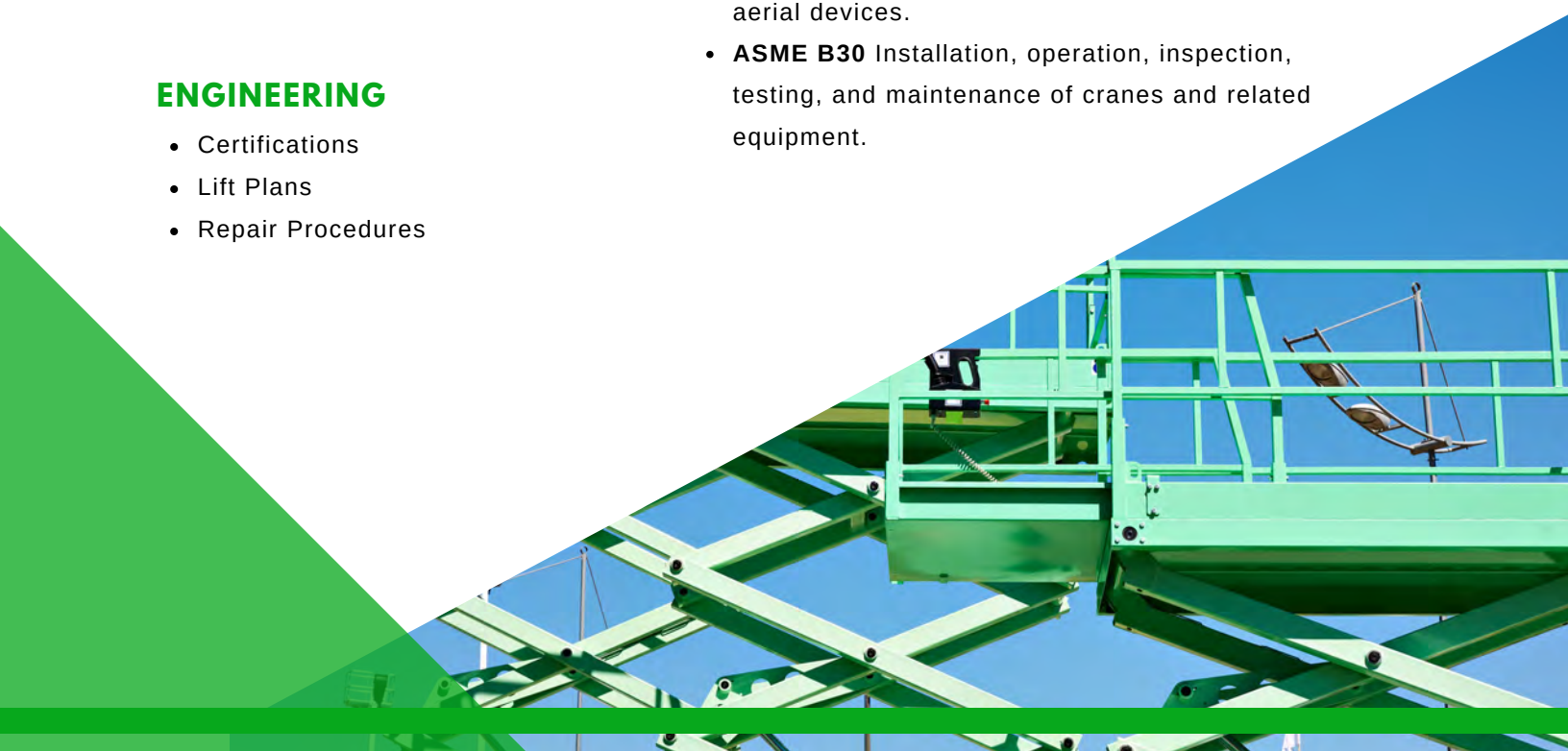
- Lifting Beams and Spreader Bars
- Mobile and Overhead Cranes
- Material Handling Equipment
- Hoists and Manlifts
- Mobile Equipment
- Knuckle Booms
- Man baskets
- Chain-falls
- Forklifts

## ENGINEERING

- Certifications
- Lift Plans
- Repair Procedures

## INSPECTION CODES & STANDARDS

- **CSA B167** Overhead traveling cranes
- **CSA B225** Vehicle-mounted aerial devices.
- **CSA B335** Safety standard for lift trucks.
- **CSA B354** Self-Propelled Boom-Supported Elevating Work Platforms.
- **CSA C225** Vehicle-mounted aerial devices.
- **CSA Z150** Safety code on mobile cranes and articulating boom cranes.
- **CSA Z151** Concrete pumps and placing booms.
- **NFPA 1914** Standard for testing fire department aerial devices.
- **ASME B30** Installation, operation, inspection, testing, and maintenance of cranes and related equipment.







# MATERIAL TESTING & ENGINEERING

NDT Group Inc. provides Professional Engineering supervision on CGSB non-destructive testing for cranes and lifting devices based on the Canadian Standards CSA-Z150-16, CSA 248-17, CSA-B354.4-13; as well as stamped certificate of inspection for annual structural inspections.

## Fitness for Service for Above-Ground Storage Tanks

We use traditional and advanced methods to inspect above-ground storage tanks. Along with the reliable evaluations and code compliance reports, NDT can provide intelligent 3D models by using laser scanners.

## 3D Laser Scanning for Installations and Piping

NDT Group Inc. provides integrated 3D scanning services to produce highly accurate as-build drawings to mitigate the dimensional uncertainty of the installations and piping systems.

## Reverse Engineering

We provide a complete workflow for reverse engineering industrial parts and components such as:

- 3D laser scanning for dimensional inspections
- CAD file generation
- Construction drawings
- F.E.A simulations.

## Material testing offerings:

- XRF (X-Ray Fluorescence)
- LIBS (Laser Induced Breakdown Spectroscopy)
- Destructive Testing





# LASER INSPECTION & MAPPING

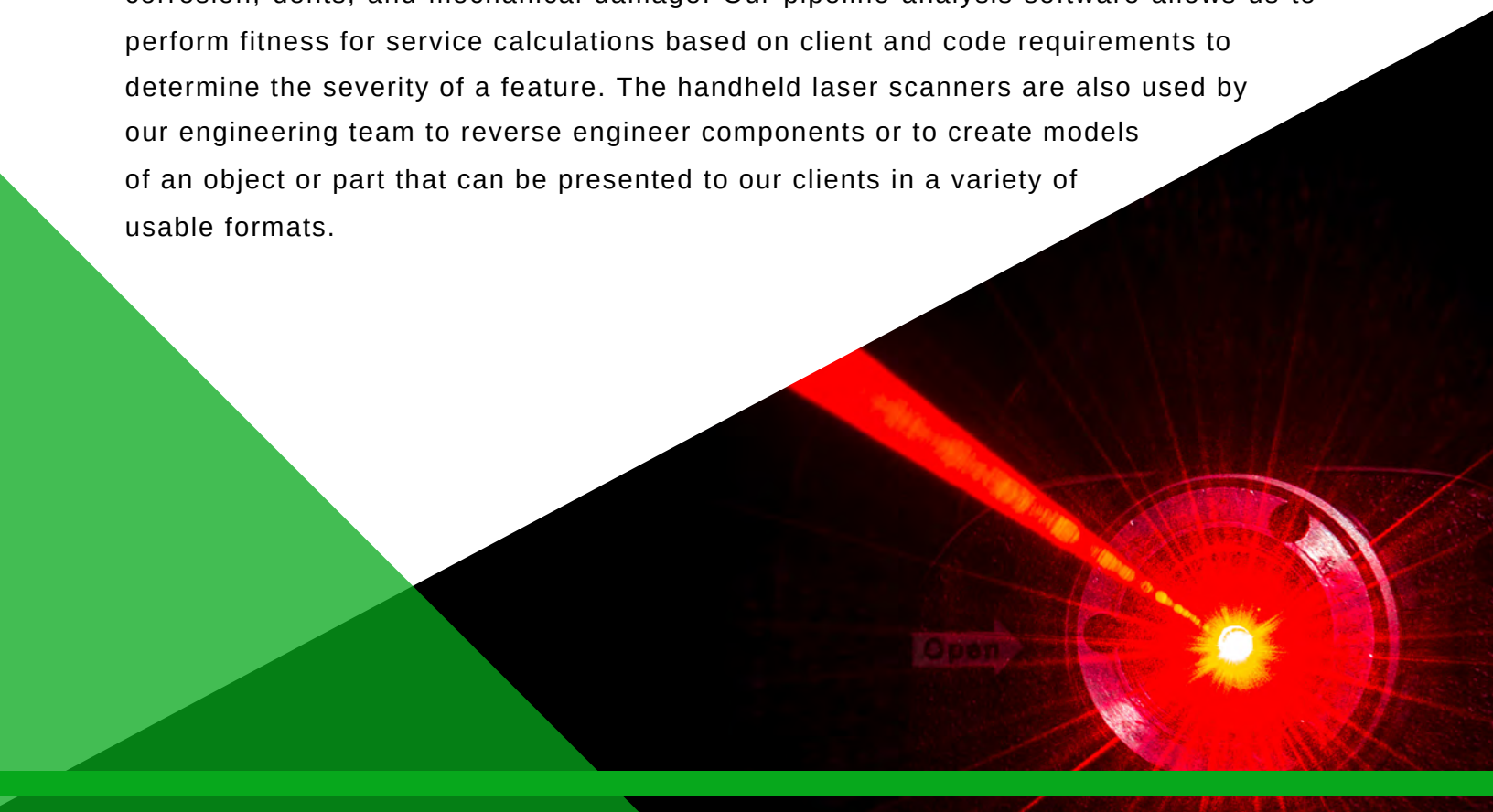
NDT Group offers laser mapping for a variety of applications including LiDAR scanning and handheld laser scanning. The advances in mapping technology and software allows for unique solutions previously unavailable to our clients. Combining the skills and expertise of our Engineering team and Laser Scanning technicians, NDT Group can help find the solution best suited for our clients needs.

## LIDAR

LiDAR Technology is commonly used for large mapping projects such as tanks and facilities. Using a variety of advanced software, we can analyze any 3D surface we generate to extract specific data as required by our clients and create custom reports detailing our findings

## HANDHELD LASER PROFILOMETRY

Our handheld laser scanners are typically used in pipeline applications to map external corrosion, dents, and mechanical damage. Our pipeline analysis software allows us to perform fitness for service calculations based on client and code requirements to determine the severity of a feature. The handheld laser scanners are also used by our engineering team to reverse engineer components or to create models of an object or part that can be presented to our clients in a variety of usable formats.





## API

Our senior personnel are experienced with all relevant ASME and API Codes for pressure equipment in support of repairs, alterations, and re-rating of existing equipment as well as FFS assessments of existing equipment using API RP 579-1/ASME FFS-1. We work on in-service and out of service equipment providing reliable inspections in accordance with API 510, 570 and 653 standards.

### METHODS OFFERED

#### Pressure Vessels and Pressure Piping – API 510/570/580/581/579

- Implementation and operation of site-wide risk-based mechanical integrity on-stream program for high-risk piping and equipment.
- CUI program development, implementation, and abatement solutions.

#### Above Ground Storage Tanks - API 653

- Guidance for maintaining the integrity of above-ground storage tanks and address inspection, repair, alteration, relocation, and reconstruction requirements.
- Consultations regarding effective corrosion control in above-ground storage tanks
- Selection of lining materials, surface preparation, lining application, cure, and inspection of tank bottom linings (existing and new)

#### Coatings and Refractory

- Integrity evaluation surveys for coating condition, life assessments, and effectiveness
- NACE III coatings oversight and auditing
- Quality control guidelines for monolithic refractory linings
- Remaining life assessments on existing lining systems

#### Repairs & Alterations

- Develop and maintain TSSA approved Owner-User Self Inspection Repair Quality Assurance programs.
- Guidance for the applicability of repair methods and techniques





# EXPERTS IN INDUSTRY

## FABRICATION & MANUFACTURING



Many fabrications involve the use of plates, forgings, castings, pipes, and tubing. Our experience ranges from the inspection of raw building materials to testing the final welded or manufactured product. As a result, our services contribute to world-class products that meet or exceed client or code requirements for safety and quality.

- 3rd Party Inspection, NDE Review/Auditing of Repairs and Construction projects.
- General Piping, Vessels and Tank Inspections.
- Hardness Testing and PMI using XRF.
- Structural Steel Inspections.
- CWB Welding Inspectors.
- Radiography of Piping/Vessel Welds

## MINING



Mining Industries play an integral part in supplying the basic building blocks of many of the goods we use and manufacture. Safety and environmental risks can be minimized through routine inspections of critical assets such as:

- Hoists, Mills, Conveyances, Crushers, Tanks, & Process Piping
- Smelters and Acid Plants, Absorbers, Converters, Exchangers, & Furnaces
- General Piping, Vessels, & Tank Inspections
- Lifting Equipment Inspections, Scissor Trucks
- Phased Array UT of Gear Teeth

## OIL & GAS/PETROCHEMICAL

We understand shut-downs happen. However, the potential for safety and environmental risks can be minimized through routine inspections of critical assets such as boilers, columns, reactors, towers, piping, tanks, and pressure vessels. Problems identified from these inspections can help prevent unscheduled shutdowns.

### SERVICES WE OFFER

- Phased Array UT/AUT for detection of HIC, SOHIC,
- Blistering and HTHA Inspections.
- AUT C-Scan Corrosion Mapping
- DMW UT examinations.
- General Piping, Vessels and Tank Inspections.
- API QUTE, QUSE and QUPA certified.
- RT Corrosion shots
- Rope Access



## PIPELINE

We are leaders and innovators in Pipeline Integrity NDE Assessment, providing world-class service with unparalleled experience and expertise.

- Advanced crack sizing using PA, Tofd, Tip Diffraction, High Angle LW
- Corrosion Mapping / Metal-Loss, AUT C-Scan and Laser Mapping
- CWB Sleeve Certified Sleeve Inspections.
- Coating Assessments and Inspections.
- DSAW/FW/ERW Seam Evaluation and Flaw characterization
- Full Defect Assessment and Mapping on ID/OD - Deformations, Mechanical Damage, Cracking, SCC, Long Seam Flaws, Arc Burns & Manufacturing related anomalies. ILI Target correlation.
- CE Samples and Grind Repairs.
- RT new construction welds, Mainline and Distribution



## POWER GENERATION

The reliability of power generation plants and their ongoing protection are of the greatest importance to us and our clients. Problems identified from our inspections can help prevent unscheduled shutdowns and help trend problems so they can be safely monitored and tracked. At NDT Group, we can help you safely test and monitor your sites in the following ways:

- Power Generation Inspections and Applications
- Turbine Components
- Tanks
- Pressure Vessels
- Boilers and Heat Exchangers
- Lower Pressure Service Water Piping
- Deaerators
- High Energy Piping
- -Pipe Connections
- Structural Steel
- Flow Accelerated Corrosion Surveys(FACS)
- Corrosion Mapping (Automated and Manual)
- External Corrosion Mapping (Manual or Laser Profilometry)
- Babbitt Bearings
- Periodic inspections, HTHA, SCC, Creep
- Phased Array UT of Boiler Tube welds
- HRSG/OTSG Weld Inspections
- Tubes and Header / Casing Cracking



## PULP & PAPER

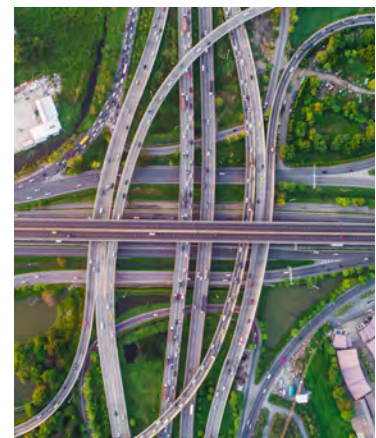
Pulp and Paper Mills often have many damaged mechanisms and components. In order to maintain reliable operations, they require routine shut-downs to avoid unplanned outages and failures. Our technicians are experts in the inspection of Pulp & Paper equipment in the following ways:

- Digester and Ancillary Vessel Inspections
- Paper Machine Components, Dryer Cans, Suction and Couch Rolls
- Recovery and Power Boilers, Steam Lines & Deaerators
- AUT/PA/Tofd In-lieu of Internal Inspections of Tanks and Pressure Vessels
- Evaporator Effects Inspections, Piping, Vessels and Tank Inspections
- Lifting Equipment Inspections



## TRANSPORTATION

NDT offers timely and cost-effective solutions for our transportation industry clients. We perform quality assurance inspections of critical components and provide advanced NDT techniques that meet the needs of manufacturers and suppliers.



# CONTACT US

Need a quote or more information regarding non-destructive testing? Get in touch. We're happy to answer all of your questions.

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