

## Process Piping Systems Integrity Management Solutions

- + INTEGRATED SOLUTION SET ADDRESSING DIFFICULT TO INSPECT PIPING SYSTEMS
- + ULTRASONIC-BASED INTELLIGENT PIGGING TECHNOLOGY
- + LIFEQUEST™ PIPING FITNESS-FOR-SERVICE ASSESSMENT SOLUTION

# INVISTA™ INTELLIGENT PIGGING TECHNOLOGY

## Benefits

### Ensure piping integrity

- + Identify degradation before loss of containment occurs
- + Maintain public and regulatory confidence

### Maximize condition assessment of internal and external piping surfaces

- + Inspect 100% of the full length of pipe
- + Pinpoint potential degradation to ensure timely repairs

### Minimize operational and safety risk

- + Identify areas of degradation to ensure precise excavation locations, thereby reducing damage risk to adjacent piping and the targeted pipe
- + Inspect the entire pipe length faster and more accurately than with other methodologies

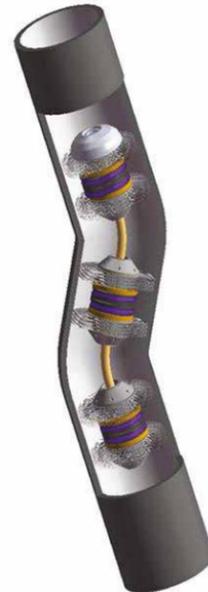
### Cost effective

- + Cost effective in comparison to alternatives
- + Localized excavations can cost tens of thousands of dollars, depending upon location within the facility
- + Localized insulation removal can be costly, especially when scaffolding is required

## Features

### Inspects 100% of internal and external pipe surfaces

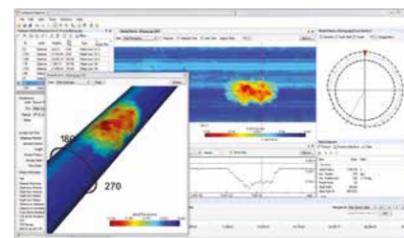
- + Bi-directionality allows for launch/retrieval from same location
- + 48-288 ultrasonic transducers provide 100% inspection coverage
- + 3"- 20" diameter piping
- + Inspects piping from a few feet long to several miles in length
- + Easily navigates:
  - + Fittings (e.g. tees, wyes)
  - + Short radius bends (e.g. 45°, 90°, 180°)
  - + Valves (e.g. ball, gate and others which do not obstruct center bore of pipe)
- + Branched connections
- + Results feed into existing API-570 piping management systems



### Capabilities

Capable of inspecting piping constructed of many material types such as:

- + Carbon steel
- + Stainless steel
- + Copper
- + Aluminum
- + Galvanized steel
- + Other materials



# LIFEQUEST™ FITNESS-FOR-SERVICE ASSESSMENT

## Applications

### Buried, overhead or inaccessible piping systems in process facilities

- + Insulated piping where CUI may be an issue
- + Short piping systems in and around the tank farm
- + Piping connecting various operating units
- + Fire protection piping systems
- + Piping currently managed using API-570

## Solutions

### Detection and sizing of:

- + Corrosion
- + Corrosion Under Insulation (CUI)
- + Erosion
- + Soil environment corrosion due to coating failure
- + Pitting
- + Mechanical wear
- + Deformation (e.g. dents, ovality, bulging, swelling)

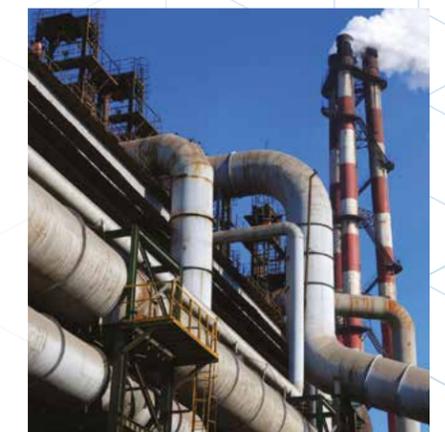
### Fitness-for-Service per ASME FFS-1 / API-579 standards

- + LifeQuest software applications focused on each asset type
- + Calculates corrosion rates
- + Utilizes 100% of InVista inspection data
- + Provides future inspection frequency recommendations



### Our people

Since 1971, we have specialized in advanced NDE inspection and engineering technologies. Our extensive research and development efforts continue to provide innovative inspection and assessment solutions that meet specific client needs. Our engineering staff has well over 20 years of experience with critical piping systems within process facilities.





Quest Integrity, a TEAM company, is a global leader in the development and delivery of asset integrity and reliability management services. The company's integrated solutions consist of technology-enabled, advanced inspection and engineering assessment services and products that help organizations improve operational planning, increase profitability, and reduce operational and safety risks. Quest Integrity is built on a foundation of leading edge science and technology that has innovated and influenced industry best practices since 1971.

**QuestIntegrity.com**