What is Pipeline Integrity Management?
A comprehensive Pipeline Integrity Management Program (IMP) provides for the maintenance of safe and reliable oil and gas pipelines through a foundation of inspection, assessment, mitigation and communication. It places a special emphasis on external and internal corrosion, perhaps the most prevalent threats to the pipeline system. IMP follows guidelines established by the U.S Department of Transportation, governmental agencies and local regulators.

Surveying
Wood Group Mustang’s approach is multi-faceted, relying on the expertise of a specialized team with extensive experience in addressing integrity issues. Wood Group Mustang’s IMP experts utilize assessment and inspection techniques, coupled with sophisticated tools used to accurately detect and correct pipeline anomalies. Wood Group Mustang team members are accredited by the National Association of Corrosion Engineers (NACE) and follow its guidelines as well as other pipeline-related standards from ASME, API and ASTM.

Wood Group Mustang’s IMP team helps maximize the benefits of your pipeline integrity strategy, including:
- Regulatory compliance
- Cost savings in repairs and replacement by preventing failures
- Risk assessment and reliability
- Asset performance management
- Understanding of the root causes of equipment failures
- Practical solutions
- Improved installation reliability, integrity, and profitability

Integrity Assessment
Wood Group Mustang’s IMP team begins its process by conducting a risk assessment to determine the priorities required in determining the best mitigation techniques. Wood Group Mustang gathers data and identifies high consequence areas with risk potential. After developing a baseline plan, Wood Group Mustang utilizes proven modeling tools to comprehensively examine potential pipeline anomalies, both externally and internally. Wood Group Mustang’s team incorporates geo-referenced databases, such as Global Positioning Systems (GPS) to provide an accurate, ongoing record of pipeline condition for developing post-assessment strategies.

Based on the priorities determined by risk assessment, an integrity assessment shall be conducted using the appropriate integrity assessment methods:
- In-Line inspection
- Hydrostatic testing
- Direct assessment

External Corrosion Direct Assessment (ECDA) – ECDA is a direct assessment process for improving pipeline safety and its primary purpose is preventing future external corrosion damage. Wood Group Mustang has the experience to provide guidelines and strategy to integrate data from multiple field examinations, and from pipe surface evaluation with the pipeline’s physical characteristics and operating history. Wood Group Mustang’s integrated approach follows NACE RP0502 guidelines.

Internal Corrosion Direct Assessment (ICDA) – This approach is designed to accomplish two purposes – enhance the assessment of internal corrosion to gas pipelines and ensure pipeline integrity. It follows the same phases as external assessment but utilizes sophisticated tools for hydraulic modeling to define the location where corrosion is most likely to occur.
Corrosion Management

Corrosion is the loss of metal from an exposed surface in a corrosive environment. Most pipeline failures are due to localized corrosion. Its mechanism can be induced by many different variables such as: flow, metallurgy, deposits, internal stresses, Microbiologically Influenced Corrosion (MIC) among others.

Wood Group Mustang’s Corrosion Management approach provides early warning signs of impending failures, develops correlations between processes and effects on system corrosivity, diagnoses a specific problem for cause and effect and evaluates the effectiveness of corrosion control/prevention techniques.

Wood Group Mustang can provide technical service in corrosion control methods suitable for specific issues. This includes selection and evaluation of the chemical treatment for internal corrosion control and cathodic protection and coating specification for external corrosion control. Wood Group Mustang also provides technical guidance in cathodic protection design, specifications, providing the following engineering services:

- Soil resistivities
- Close interval over-the-line potential
- Direct Current Voltage Gradient (DCVG)
- Alternating Current Voltage Gradient (ACVG)
- Design of cathodic protection system

Failure Analysis

Wood Group Mustang provides a full complement of solutions to trace pipeline corrosion, metallurgical and mechanical failures to their root causes. Root cause analysis should be performed in many instances so that the damage cause can be identified and mitigation measures can take place to prevent reoccurrence. Effective mitigation is a proactive process that involves an integrated view of operating conditions and potential threats as well as pipeline specific characteristics such as age, location and products being transported. Wood Group Mustang provides solutions based on the analysis of:

- Metallography
- Mechanical Testing
- Chemical Testing
- Scanning Electron Microscopy (SEM)
- Energy Dispersive Spectroscopy (EDS)
- X-Ray Diffraction (XRD)

Failure Analysis

Wood Group Mustang’s IMP strategy includes material selection and specifications based on NACE, API, ASTM and ASME standards and codes. It evaluates pipeline fitness-for-service (API 579) and remaining life. Wood Group Mustang’s experienced inspectors develop and review welding procedures in accordance with ASME, ANSI and API fabrication codes. NACE-certified specialists specify external and internal coatings for corrosive service and specify metals, alloys and non-metals for appropriate applications.
Experience The Difference

Wood Group Mustang has established a global reputation for quality engineering design, project management, procurement and inspection services. We take your project from concept to completion and beyond. Our focus is serving all segments of the worldwide oil and gas industry - upstream, midstream, pipelines, downstream, and automation and control.

Our philosophy is simple: deliver the highest quality, highest value project on time, within budget, with consistency no matter where it is located, and with no surprises. Wood Group Mustang’s energy and innovation has turned that philosophical goal into an industry reputation.

North America
USA
Canada
Mexico

South America
Colombia
Argentina
Peru
Chile
Bolivia

Europe & Africa
UK
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