



Corrosion Analysis in the Oil & Gas Industry

Customized Testing for Client-specific Service Conditions

RJ Lee Group's experts understand the complex interaction between materials and their service environment.

Our scientists recognize the need to match a material with its service environment and know that corrosion problems can occur when that selection is less than ideal. There is an intricate relationship between material chemistry, microstructure, surface condition, environmental chemistry, humidity and temperature that dictates this behavior. Our scientists follow a logical and systematic approach to identify corrosion mechanisms, especially those that impact a product's useful life cycle.

We can perform accelerated corrosion testing in our environmental chambers by simulating an environment based on client-specific service conditions. We can also perform standard corrosion tests as defined by ASTM. Our clients rely on the corrosion testing results to develop new products, improve existing ones, or respond to regulatory requirements.

Corrosion Is A Fact of Life

Despite best efforts to protect products from corrosion degradation, corrosion usually cannot be totally prevented. However, detection and identification of operating corrosion mechanisms can provide insight into remaining product life and opportunities for its life extension. Our experts can determine the root cause of corrosion failure, devise a mitigation strategy, or conduct a remaining life assessment.

To learn more about our corrosion laboratory and consulting services, please call our experts at 724.519.9069.



Where Materials Science & Chemistry Meet

We encounter corrosion in multiple materials — from metals to polymers, from steel to concrete; in multiple applications — from bridges to pipes to medical devices RJ Lee Group scientists recognize that corrosion behavior depends on both the properties of the material and environmental chemistry. Our full service laboratory includes multiple options for a corrosion investigation including:

- » Corrosion Testing
 - Environmental Chambers
 - » Material qualification – ASTM standard testing
 - » Accelerated corrosion testing – ASTM standard environments
 - » Accelerated corrosion testing – client-specific environments
 - Electro-chemical testing
- » Chemical Analysis
 - Environmental Chemistry
 - » Air Sampling and testing
 - » Water testing
 - » Particle testing
 - Material Chemistry
 - » ICP chemical analysis
 - » Surface analysis (ESCA/XPS)
- » Full Service Metallography Laboratory
 - Sample cross sectioning, drilling, cutting
 - Mounting, grinding, polishing
 - Etching
 - Hardness testing
- » Field Deployable Services
 - Handheld XRF for chemical analysis
 - Stereo-microscope for surface assessment
 - Surface replicas
 - Field metallography and microstructural evaluation

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 **RJ LEE GROUP**
DELIVERING SCIENTIFIC RESOLUTION