

## **IMR Test Labs is Your Lowest-Risk Provider of Materials Testing Services for the Oil & Gas Industry**

In the Oil & Gas industry, safety and reliability are of critical importance. With the costs of catastrophic failures rising every day, it is imperative to have clear, concise testing results to ensure your facility can run safely and reliably.

IMR Test Labs has the expert staff and knowledge to provide testing for both metals and polymers. We have extensive experience working with the high-performance materials used in oil & gas production.

We offer a variety of chemical analysis, metallurgical testing, mechanical testing and corrosion testing services. Also, in the event of failure, we offer root cause determination and solutions to prevent recurrence.

Our corrosion testing staff can identify corrodents and other variables that are entirely responsible for corrosion attack. We have a history of addressing complicated corrosion issues, including stress corrosion cracking, environmental stress cracking and many other mechanisms.

We also offer a wide range of weld testing services, including welder qualification and weld examinations with AWS CWI's at all US locations.

## **Not just data, *knowledge***

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### **Coming - Summer 2012**

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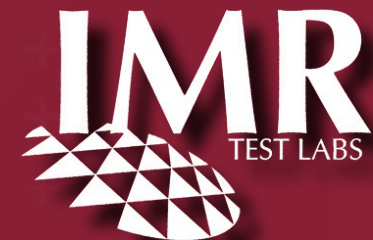
**[www.imrtest.com](http://www.imrtest.com)**

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## **Analytical Services for the Oil & Gas Industries**



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## Corrosion Testing

- Slow Strain Rate Testing
- Corrosion Simulation
- Electrochemical Corrosion Testing
- Corrosion Failure Analysis



## Weld Testing

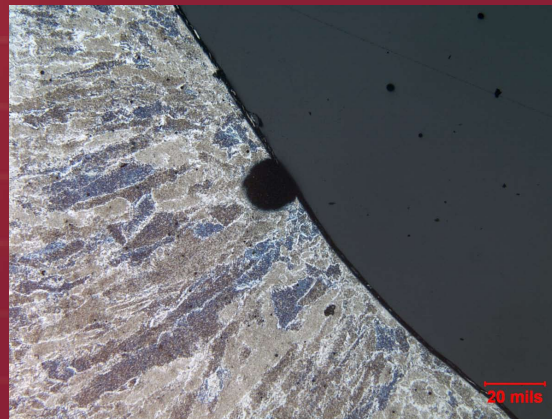
- Welder Qualification
- Resistance Weld Peel Testing
- Braze Procedure/Process Analysis
- CWI Witness Service
- Chemistry of Weld, HAZ, Base Metal
- Microhardness of Weld, HAZ, Base Metal
- Cross Sectional Analysis
- Macroetch
- Plate, Pipe or Sheet Weldments



*Microscopy Lab at the Ithaca, NY location*

## Metallurgical Analysis

- Microscopy (SEM, Macro, Micro)
- Grain Size
- Microstructure
- Heat Treat Analysis
- Plating Thickness
- Intergranular Attack
- Inclusion Rating
- Porosity
- Fractography
- Quantitative Image Analysis & Surface Topography



*Etched Structure on a weld Sample, showing porosity*

## Mechanical Testing

- Fracture Mechanics Testing
- Hydrogen Embrittlement
- High Cycle Fatigue
- Low Cycle Fatigue
- Rotating Beam Fatigue (up to 1800°F)
- Coating Shear Fatigue
- Charpy Impact (-320°F To 450°F)
- Tensile/Pull Test (-40°F/C to 2100°F)
- Hardness/Microhardness
- Creep Testing
- Stress Rupture Testing
- Torsion Testing
- 3 & 4 Point Bend Testing (including wraparound)



## Chemical Analysis

- Alloy Verification via ICP, OES, XRF
- On-Site PMI (positive material identification)
- Trace element analysis
- Cleanliness Testing
- Contaminant Analysis
- C, S, O, N, H Analysis
- Plating Analysis