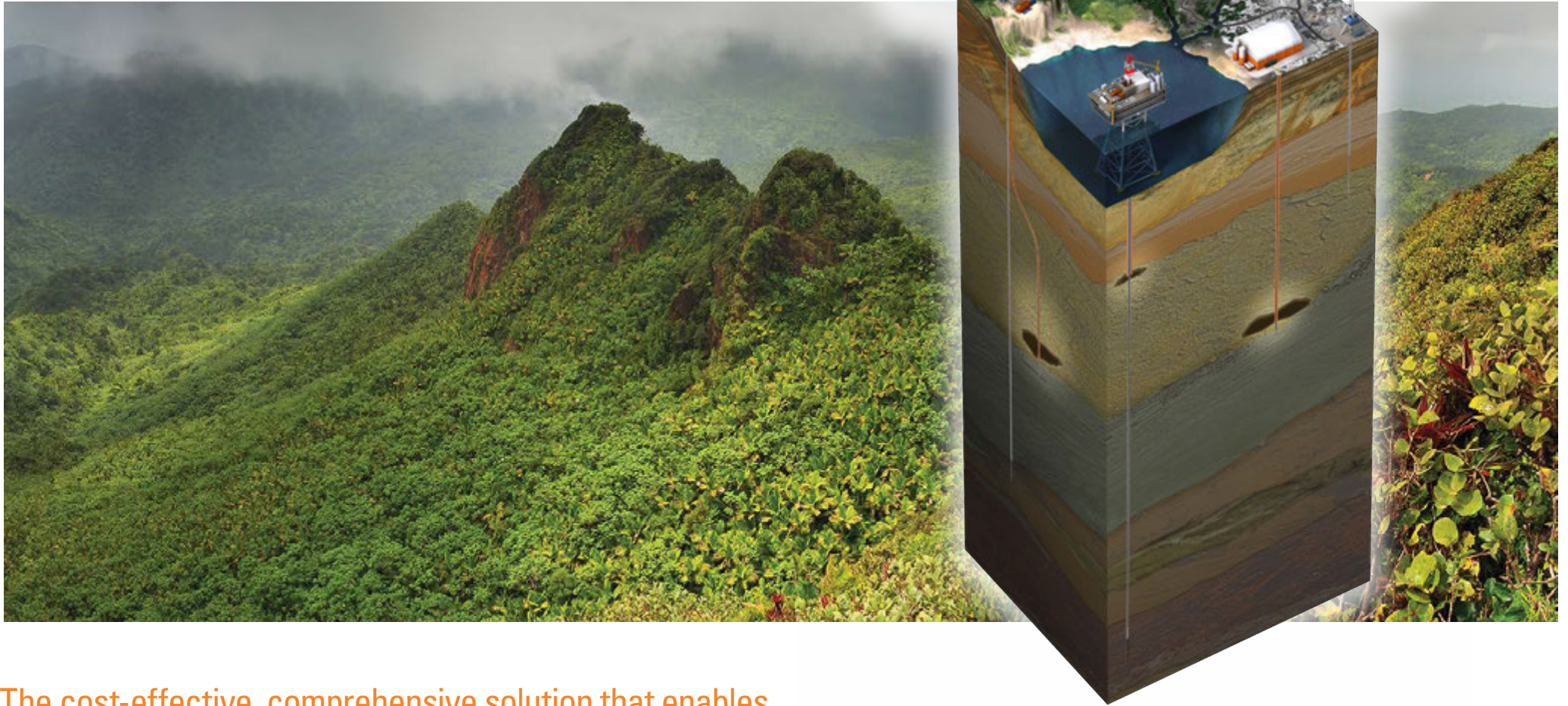


iWISE

Integrated waste injection services



The cost-effective, comprehensive solution that enables remote drilling operations to meet the world's most-stringent environmental standards.



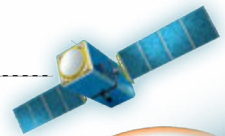
Limiting the risks associated with and achieving the unequaled benefits of cuttings reinjection (CRI) demands high performance in surface and subsurface engineering analysis and diagnostic expertise—before, during, and after the operation.

iWISE* integrated waste injection services comprise a unique and comprehensive portfolio of field-proven CRI technologies, workflows, and services that enable us to deliver reliable, single-source, start-to-finish solutions—on time, on budget, and within environmental constraints.

Benefits

- **Balance**
By disposing of cuttings and waste as they are generated at the rig site, transportation and disposal costs are reduced or eliminated while drilling operations continue uninterrupted. Large waste storage structures are unnecessary, and total containment of waste ensures environmental compliance.
- **Effectiveness**
Secure, zero-discharge containment of drilling and completion waste minimizes emissions, reduces HSE risk, and assures against long-term liability concerns.
- **Reliability**
Safer and more efficient systems combining field-proven technologies and an all-inclusive integrated monitoring system result in lower NPT, regardless of weather conditions. These systems are designed, operated, and maintained by experienced and fully trained personnel leveraging best-in-class technologies and technical expertise.
- **Flexibility**
Featuring compact, modular designs, our CRI solutions enhance operational flexibility, simplify transport, and reduce rig-up and rig-down times.

iWISE Live* integrated waste injection services monitoring via InterACT* global connectivity, collaboration, and information service



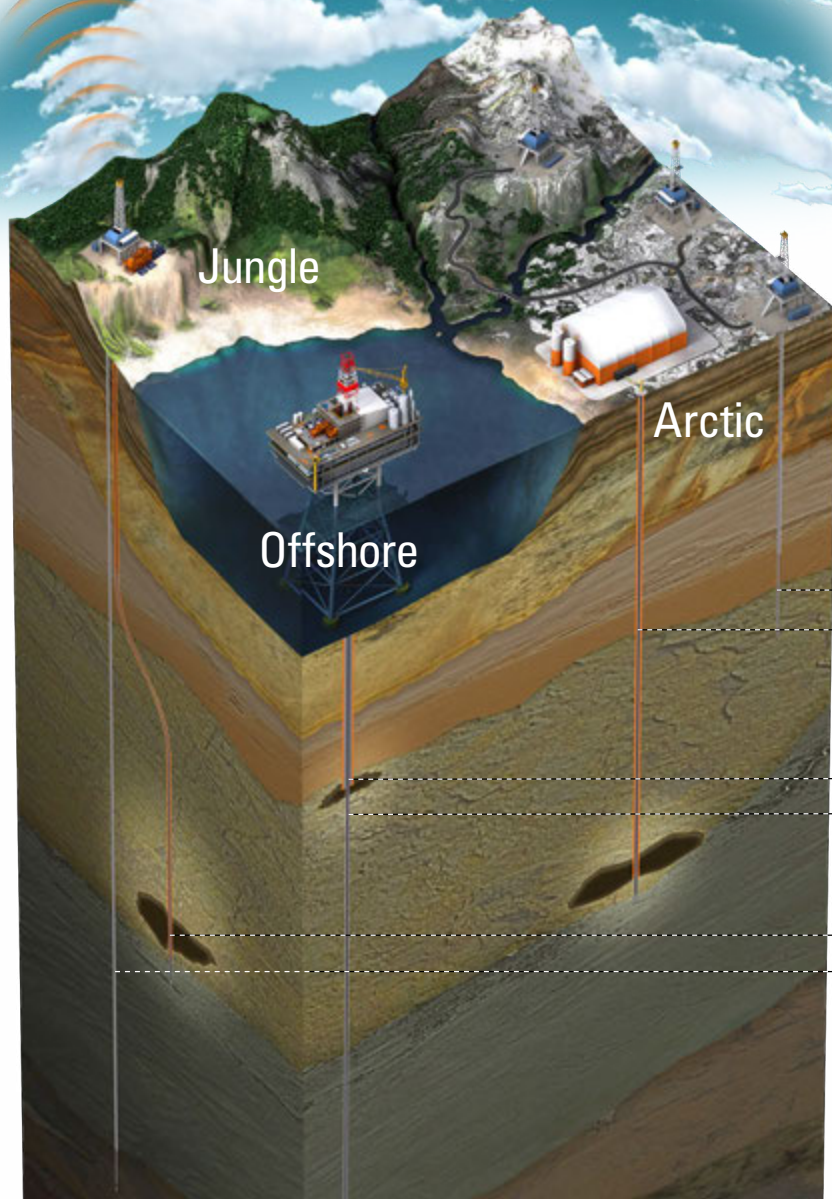
Heliportable rig in the jungle featuring modular CRI equipment



Enclosed centralized CRI facility in the Arctic



Offshore production platform with space-optimized CRI equipment



CRI systems can be configured to meet project requirements in a variety of remote environments.

Production well

Dedicated injection well

Reinjection through annulus

Production through tubing

Dedicated injection well

Production well



Developed over years of practical field experience, iWISE services comprise a range of features.

■ Equipment

We customize a fit-for-purpose CRI package to meet the challenges of any operation, including fast, large-hole drilling; constrained work space; and subzero temperatures.

■ Transport

Gravity-assisted conveyance with slurry flushing is common, and auger, vacuum, and pneumatic conveyance systems are also available.

■ Slurrification

The iWISE services slurrification unit can be customized based on drill cuttings tonnage or restrictions such as deck loading or space availability.

■ Reinjection

We use triplex reciprocating plunger-style high-pressure pumps to reinject into the preselected subsurface formation. These can be supplied skid-mounted inside a crash frame, in a container, or on a truck or trailer, with or without a sound-attenuation enclosure.

■ iWISE Live monitoring

iWISE Live monitoring is a proprietary package of technologies aimed at live digital monitoring and logging of injection slurry parameters as well as downhole pressure information. This enables greater efficiency, streamlined process monitoring, and CRI assurance.

■ Real-time diagnostics

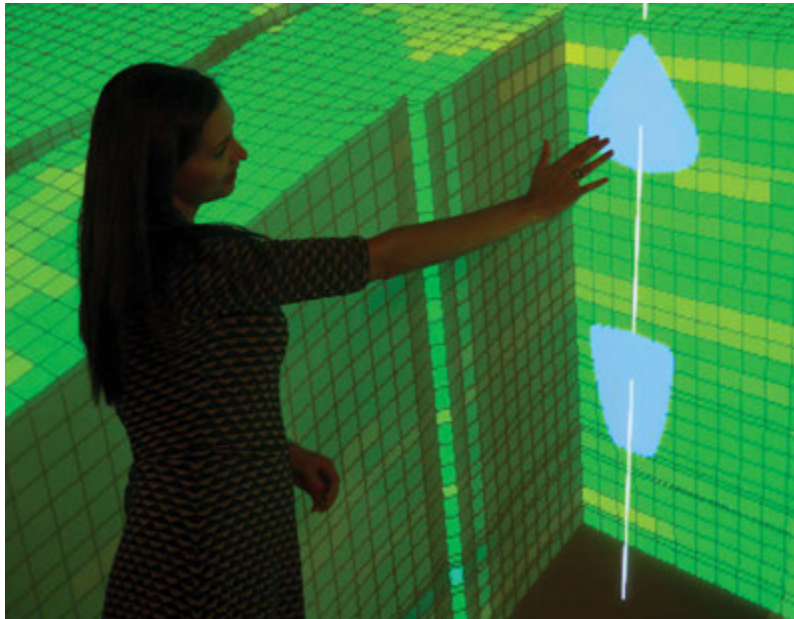
In-depth evaluation of the data captured by the injection monitoring system enables early detection of pressure anomalies that could be warning signs of issues with the well, surface operations, or the hydraulic fracturing model.

■ Project management

We provide comprehensive in-house management of subsurface and surface project deliverables. We design, engineer, manufacture, and deliver custom equipment to suit specific needs while helping to reduce costs.

■ Custom facility design and specification

When a standard CRI unit is not the desired solution, a team of M-I SWACO project, design, and discipline engineers can design a custom CRI facility for new and refurbished drilling installations.



3 million

barrels of slurrified cuttings reinjected into a single receiving well

65 million

barrels of cuttings and drilling waste effectively and securely injected worldwide

Zero

wells plugged, waste breaches, well integrity failures, or overpressure incidents

iWISE services begin with front-end planning and study to validate feasibility and develop a site-specific design basis. The CRI assurance cycle continues to include design, execution, and evaluation for enhanced operations.

Design

- **Front-end engineering design (FEED) and subsurface feasibility studies**

The PowerFEED* cuttings-reinjection domain modeling and mapping service performs comprehensive analyses to address geological uncertainty and complexity—such as intersections of the fracture and pore domain with natural faults or well trajectories—to enable defining injection parameters, establishing drilling and completions plans, and determining surface facility requirements and procedures.

- **Slurry rheology design and QA/QC**

Poor slurry rheology and design can result in plugged wells or unwanted erosion or corrosion. Comprehensive testing and assessments ensure a reliable fluid design that optimizes completions and production results without compromising drilling quality.

- **CRI facility design and specification**

With a solid understanding of subsurface requirements, iWISE services CRI design experts can specify and customize the necessary surface equipment and facilities to optimize your HSE profile and overall productivity.

Execute

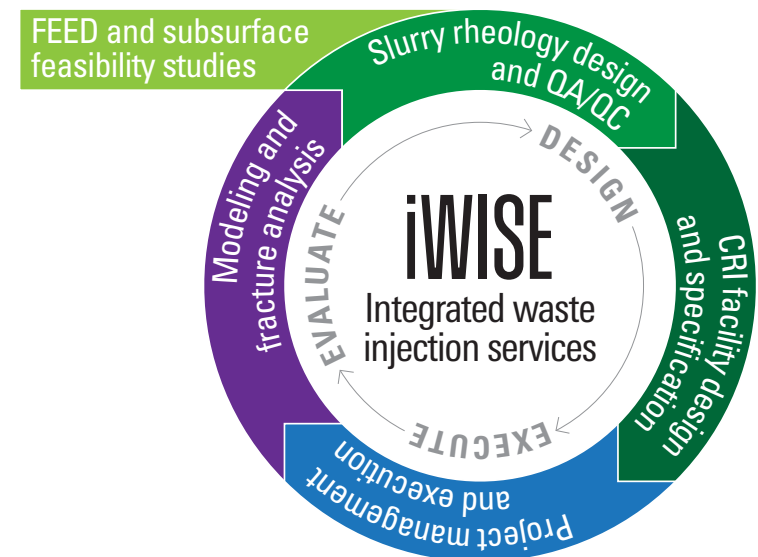
- **Project management and execution**

We bring together the optimal plan, people, and equipment to deliver the project on time with minimal supply disruptions, safer operation, and reliable management.

Evaluate

- **iWISE Live monitoring**

Monitoring injection slurry parameters and downhole pressures facilitates the validation of hydraulic fracture model results. Evaluation of these results enables us to close the loop by precisely calibrating operational settings that minimize risks.



iWISE

Integrated waste injection services

The comprehensive project assurance solution to help you meet the world's most stringent environmental standards for drilling waste management.

Find out more at miswaco.com/iWISE

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