ENGINEERED CHEMICAL AND MECHANICAL SOLUTIONS FOR DEEP WATER PRODUCTION CHALLENGES

Solving challenges.™

A HALLIBURTON SERVICE
Deep Water Flow Assurance Solutions
Flow assurance solutions begin with a thorough understanding of the production conditions over the expected life of the asset. To gain this in-depth knowledge, Multi-Chem utilizes OLGA®, a modeling tool for multiphase transportation (oil, natural gas, and water), and advanced testing techniques to identify risk and provide mitigation strategies.

Hydrate Risk Management
Low dosage hydrate inhibitor (LDHI) programs are designed to manage the risk caused by hydrates in production systems, such as line restrictions and plugs. Multi-Chem is a leader in LDHI chemistries, utilizing tools like advanced hydrate rocking cells to develop technologies and application methods that are new to the industry and proven in the field.

Paraffin and Asphaltene Management
Multi-Chem paraffin and asphaltene treatment products are focused on preventing and removing organic deposits in production systems and are customized to meet specific deep water production challenges. A specialized paraffin / asphaltene control program designed by Multi-Chem will help manage these flow assurance challenges and keep production systems flowing at optimal levels.

Scale Control
Multi-Chem customizes scale inhibitors to prevent various types of mineral deposition which occur in deep water production operations. Relying on years of water-treating expertise, Multi-Chem subject matter experts analyze the water chemistry in production and injection systems for scaling tendencies and examine any formed deposits to identify scale composition. From there, a specific scale control program is developed that best mitigates scale risk, maintaining the highest levels of production and reducing cost of operations associated with scale cleanup, removal, and disposal.

Deep Water Asset Integrity and Offshore Water Solutions
Corrosion Challenges
Multi-Chem takes the time to fully model the production conditions of your system to truly understand all of the critical parameters that contribute to the corrosion potential of equipment and flowlines. Armed with this information, a specialty chemical solution is implemented which mitigates the corrosion risk found in deepwater systems and continuously monitors system parameters to ensure that equipment remains operating at its fullest potential.

Bacteria and Seawater Flood Management
Multi-Chem knows and understands the importance of a successful bacteria mitigation program. On seawater injection systems the souring of the reservoir can have dire consequences on the economic viability of the asset. Bacteria fouling of the associated infrastructure can create costly equipment failures and noncompliance issues. Multi-Chem is a leader in biocide technology offering a full suite of EPA registered biocides and industry leading, novel microbial control strategies.

Fluid Separation and Water Quality Challenges
In deepwater environments, efficient separation of oil and water is critical to producing sales-quality oil and remaining in compliance with overboard water discharge. Multi-Chem performs an extensive on-site evaluation of separation systems to identify the best combination of chemical and mechanical separation methods. The most cost-effective solution suited for the production conditions is developed to ensure oil sales specifications are met and water discharge is within regulatory compliance.
DeepSEAL™ – Deepwater Umbilical Certified Products

Multi-Chem understands the importance of providing certified chemicals meeting the highest standards of quality, cleanliness, and performance for use in deepwater umbilical applications. Products must be designed to withstand extreme temperature and pressure variances over long periods of time.

The DeepSEAL product certification process includes thorough testing of materials compatibility, particulate content, low temperature and high pressure viscosities, and long-term product stability.

DeepSEAL Certified Qualifications

- Stability tested for 60 days at 4°C and upper temperature limit
- Stability tested on capillary/umbilical flowloop at both upper temperature limit and 4°C
- High pressure viscosity at 4°C to define deliverability over a range of operating conditions
- Filtered to ASE AS4059 Class 8, and upon request, able to deliver Class 6B
- Rigorous material compatibility testing
- Strict QA/QC manufacturing protocols
- Totes sealed and tracked
- Retain samples of the raw materials and finished blends are kept for one year
- Chain of Custody (CoC) for each batch and container

Value Delivered to Our Customers

Customized DeepSEAL™ LDHI Anti-Agglomerant Prevents Hydrates in 20-mile Subsea Tiebacks
Substantially increased the producing life of the field by successfully controlling hydrates under high water cut conditions (60% water cut), treating water production of up to > 1800 bwpd.

High Performance Anti-Agglomerate LDHI Extends Life of 33-mile Subsea Tieback Well (3,300 ft. of water)
Protected flowline from hydrate restrictions and blockages after water breakthrough caused increased water cut and water production, allowing an additional 500,000 bbls of oil to be produced.

Hybrid LDHI Solution Extends Life of Well in 40-mile Subsea Tieback
Enabled gas production with up to 1400 bwpd by controlling hydrates via hybrid LDHI/thermodynamic inhibitor.

SeaWave® Service Enables Safe Discharge in Strictly Regulated Offshore Environments
Consistently treated a wide variety of flowback and produced water to meet discharge specifications across multiple geographies and operating environments.
Commitment to Safety and Environment
Multi-Chem is committed to conducting business in a manner that promotes safe work habits, sound environmental practices, and compliance with industry regulations. We are dedicated and driven to create safe working environments through continuous improvements, focused safety programs and training specific to deep water operations.

Flow Assurance Engineering Support
Multi-Chem’s team of flow assurance engineers can model systems using industry recognized steady-state and transient multiphase simulation software. This information may be used to provide process and procedure reviews as well as recommendations to assist in operations, field design, and general flow assurance issues.

Performance Monitoring
To ensure optimal program performance, our deepwater experts utilize the MVP 2.0™ chemical program management tool to monitor system data, flowline parameters, chemical inventory, chemical usage, lab analyses, and KPIs to assess product effectiveness and advise on flow assurance issues, both chemical and mechanical.

For more information, please contact your local sales representative or e-mail multichem@halliburton.com

www.halliburton.com/multichem