For years, conventional oil production facilities have been challenged with oil and water separation issues. These often lead to problems such as high oil losses to disposal, disposal pump filter change outs, and off-spec basic sediment and water (BS&W)—leaving producers with process stability concerns, increased production risks, and elevated operating costs. With a constant focus on improving profitability, these operators are desperate for game-changing technology that will provide improved results over existing treatment options.

A major operator in the Canadian conventional oil arena was continuously challenged with high oil-in-water (OIW) content, measuring 2,000 ppm on average. In addition, disposal pump filters needed to be changed out two times per month, adding further cost and downtime. Previous attempts to optimize the system resulted in an increase in treatment dosage rates and costs with little improvement in system performance. The operator needed a new solution that would not only improve oil and water separation, but also their bottom line. So, the operator reached out to Baker Hughes, a GE company (BHGE), recognizing the company's ability to solve challenging technical issues with innovative technologies.

BHGE began a customized solution by conducting a detailed site survey using the TOTAL SYSTEMS APPROACH™ process to better understand the root cause of the problem. Using emulsion samples provided by the operator, the team performed an onsite technical evaluation to determine the optimal solution.

Based on the test results, BHGE developed a custom TRETOLITE™ CLEAR demulsifier, formulated to meet the specific reservoir and operating conditions.

Working closely with the operator, BHGE implemented a four-week trial of this new technology, which showed immediate, positive results and greatly improved the emulsion resolution. See Figure 1. A 98% reduction in OIW content to disposal was achieved, from 2,000 to 25 ppm. The TRETOLITE CLEAR demulsifier treatment also helped lower the sales oil BS&W levels from 0.3 to 0.1%, improving operational stability and the opportunity
to increase production throughput. The operator also observed a significant drop in disposal well differential pressure. A subsequent performance test of their disposal well capacity revealed that a 94% increase in disposal well capacity could be sustained without requiring any cleanouts. The operator has initiated actions to route additional production to the facility to leverage the increased throughput capability.

Extremely pleased with the results, the operator will continue to use the TRETOLITE CLEAR demulsifier treatment as a permanent solution in their facility.

Figure 1. Emulsion resolution comparison between the TRETOLITE CLEAR demulsifier and the incumbent treatment.