

Optimise crude processing with the Tracerco Profiler™

Making desalter vessels transparent with the Tracerco Profiler™.

The Challenge

Refiners aim to optimise feedstock blends to improve margins, but variability can bring significant operational challenges during the process. One critical need is the efficient removal of solids, salts and water from crude feedstock. It is essential that washing of the crude is effective at removing high levels of these, and the oil can be efficiently separated prior to crude distillation. Efficient separation needs accurate and reliable interface control to manage its position and quality.

The Solution

The Tracerco Profiler™ has been successfully used for desalter interface control. The device gives an accurate measurement of the density distribution within a desalter, offering continuous high-resolution imaging and control of each phase. This monitors the effectiveness of chemical additives and mud washing and allows the most efficient operating conditions to be maintained.

With accurate and reliable real-time process measurements, the Tracerco Profiler™ provides operators with interface confidence. When the interface is controlled correctly, the desalter can be operated at the ideal level to maximise performance, which enhances separation of crude from water. By optimising separation, mixing can be increased to maximise wash water contact, thus removing more undesirable materials. This allows improved feedstock flexibility.



By providing a high-resolution measurement around the emulsion layer, the tendency to overdose chemicals is reduced. This enables refiners to reduce chemical dosing costs, enhance safety and benefit from reduced environmental impact.

By providing a continuous high-resolution measurement throughout the level range, interfaces such as emulsion can be monitored and controlled, reducing the tendency to overdose chemicals. This enables operators to reduce costs, enhance safety and benefit from improved environmental compliance by reducing grid energy demand and consumption. The likelihood of process trips is also reduced and while this is important for reliable production, it also has the potential to reduce associated Green House Gases (GHG) and emissions from flaring.

Following a desalter improvement initiative, a European refiner commented;

"The Tracerco Profiler™ has provided interesting information on the workings inside the desalter that were otherwise unseen. It has allowed us to see rises in the solid layer, along with the effect of mud washing on this solid layer. The depth of the emulsion layer and its position within the desalter have been seen with significant changes on different feeds. It is used as another tool, along with lab analysis, to make optimisation decisions around the desalter. One unusual thing that the Tracerco Profiler™ has shown, is the emulsion layer of a higher density than the water layer found to be asphaltene stabilisation."

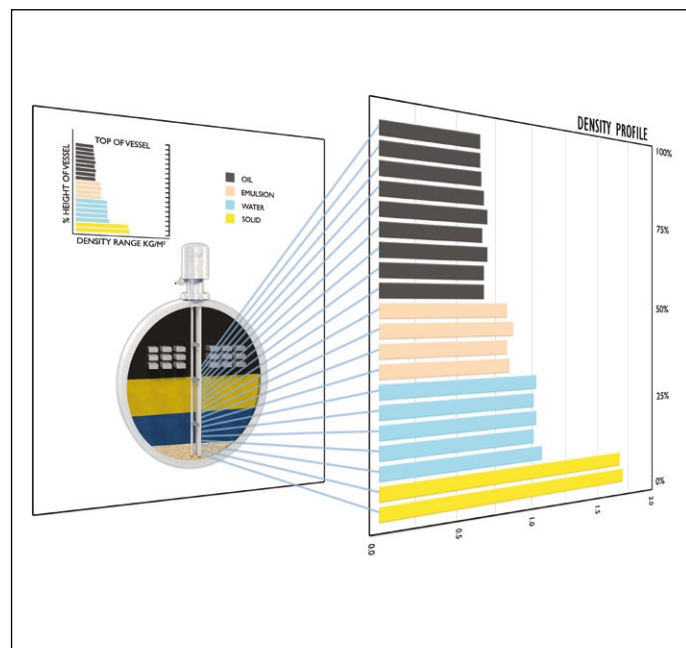
Another major North American refinery stated:

"The accuracy and reliability of multiple real-time measurements has given us the confidence to run levels closer to the grid, yielding higher efficiencies and throughputs, including the ability to process lower cost opportunity crudes. We gained the ability to effectively process alternate feeds, and increased throughput by 20,000 barrels per day – which is a very big deal.

"By providing a high resolution measurement around the emulsion layer, the tendency to overdose chemicals is reduced. This enables refiners to reduce costs associated with chemical dosing, enhance safety and associated environmental benefits.

The Science

Tracerco provides proprietary software with every unit – the Tracerco Profiler™ HMI, a ready-made graphical user interface that provides a clear insight into separation quality, whilst maintaining efficient operation and control of the Tracerco Profiler™. Alternatively, we work with customers to integrate into their own DCS and HMI system.



The display options available from the Tracerco Profiler™ HMI provide a 'window' into the vessel, allowing operators to visualise the process density distribution and alarm/diagnostic data. The Tracerco Profiler™ HMI also provides easy access to process and instrument status in real time, and trend data that allows adjustments to be made should any anomalies occur. The Tracerco Profiler™ is field-proven in over 750 installations. Along with our Tracerco Profiler™ software, the Tracerco Profiler™ acts as the interface control solution for millions of barrels of processed oil per day.

Our innovative work gives customers the insights they need to help solve their problems. Read more of our case studies at tracerco.com/downloads/case-studies

You can find additional information and specifications for our product range in our product data sheets at tracerco.com/downloads/product-documentation/