



Digitally Enabling
Oil & Gas Operations

Case Study

Addressing Oil in Water Challenges.

Environmental management, performance and compliance remains a top priority for oil and gas operators. One of these priorities is controlling the levels of oil in produced water that is discharged to sea during oil and gas production.

We recently worked closely with an existing customer to explore how data science could help them to manage this.



The Challenge

Our customer was experiencing significant issues with consistently high levels of oil in water, which was making it difficult to meet regulatory compliance targets.

Conventional engineering methods had failed to identify the root causes, so OPEX undertook a data-driven study to help address the challenge.

Pulling together a multi-discipline team of data scientists, data analysts and process engineers, we kicked off a 3-month data science study to help our customer overcome this challenge.



Our Approach

Working with 2 years of data from the produced water system along with chemical samples, we analysed more than 70 million data points using a range of algorithms to understand and identify the key factors that were contributing to high and low levels of oil in water.

These insights allowed us to define detailed operating conditions so that our customer can attempt to control occurrences of high levels of oil in water and reduce the environmental and regulatory impact.



Predictive Insights

Using numerous machine learning techniques, predictive models were built which were demonstrated to provide the operator with up to 5 days' notice that a significant oil in water event was imminent, with recommendations as to what could be changed on the asset to bring the oil in water back under control.

