

Reduced costs due to improved slop treatment and produced water cooler performance



BACKGROUND

Two major problems affecting the SAGD industry during the oil treatment process are the creation of slop oil and produced water cooler fouling.

Most facilities are poorly equipped to process slop oil on site and are forced to truck difficult to process slop oil to third party disposal or treatment facilities. Trucking slop oil is a burden on the producer as transportation, disposal and lost production impact the cost effectiveness of the facility.

Produced water coolers are prone to fouling from organic species which reduces their effectiveness. The coolers must then be taken out of service and a chemical clean requiring specialized chemical, crews, and equipment is completed. This process is expensive and has elements of safety risks.

SITUATION

A SAGD facility was experiencing issues related to skim inlet quality, high amounts of offsite disposal of slop oil and difficulties with low run times on the produced water coolers.

Nalco Champion was approached to find a chemical solution to these issues with the intent to limit offsite disposal of slop oil and increase the life expectancy of the produced water coolers. Doing so would decrease the total cost of operating the facility.

Value

3 x

INCREASED LIFE SPAN OF
PRODUCED WATER COOLERS

Value

\$1.1 Million

ANNUAL SAVINGS
OVER INCUMBENT

Upon review of the system, Nalco Champion observed a skim tank inlet oil in water average of 650ppm, high solids content of the slop oil, and run times on the produced water coolers of 15-20 days.

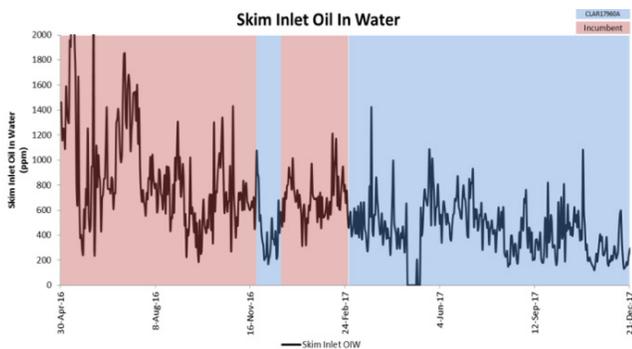
Typically, these issues are most affected by the Reverse Emulsion Breaker in use at site which was the focus of Nalco Champion's investigation.

SOLUTION

From testing, CLAR17960A was selected for trial in the system. The goals of this trial were to improve the water quality of the FWKO water dumps, recyclability of slop oil through the system and increase the lifespan of the produced water coolers.

SLOP GENERATION

The incumbent chemical program was able to reliably break the produced reverse emulsion and provide oil in water averages of 650ppm. Upon transitioning, Nalco Champion observed a 50% decrease in the oil in water detected in the FWKO water dumps. Generating less slop oil on site was advantageous as less operational tasks were required and the task of managing fluids on site became a possibility.

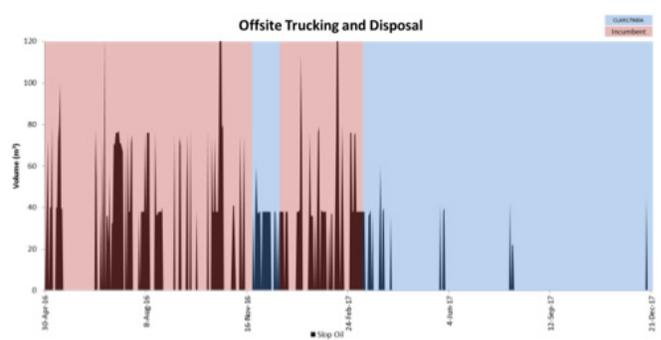


SLOP RECYCLE

When slop oil was recycled to the system while utilizing the incumbent program, a buildup of solids would be seen in the water-oil interface. These solids impeded emulsion resolution. Upon transition, these solids built significantly slower allowing for additional slop oil to be put through the system. This increased the amount of oil being sold instead of being disposed of as a waste product.

PRODUCED WATER COOLERS

The produced water coolers, while treated with the incumbent product, would require cleaning every 15-20 days. After switching products, the lifespan of the coolers increased to ~60 days. Increasing the lifespan of the cooler implies less cleanings which require high pH cleaning solutions and specialized equipment.



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GOALZERO

SAFETY MATTERS

The safety of our associates, customers and communities is vitally important. From the way we operate, to the products we develop, to how we partner with customers, our goal is zero: zero accidents, zero incidents and zero environmental releases.

At Nalco Champion, safety is more than a metric, it's a mindset. It's how we conduct ourselves, every day, everywhere it matters.

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