

# LIFESPAN crude blending model reduced fouling in hot pre-heat train of crude unit, cut fuel gas consumption and CO<sub>2</sub> emissions

## CHALLENGES

- High percentage of West Texas Intermediate (WTI) crude processed with other high fouling potential crudes resulted in low stability and high fouling potential
- Fouling in the crude unit hot pre-heat train had reduced the furnace inlet temperature, making it necessary to increase the heat duty provided from the furnace to compensate for the loss of heat transfer
- Increased heat duty from the furnace was accomplished by burning extra fuel gas as well as additional CO<sub>2</sub> emissions

## SOLUTION

- [LIFESPAN™ crude blending model](#) is a proprietary, cloud-based web application that accurately predicts the stability of asphaltenes in crude oil and fuel oil blends. It was utilized to quickly assess the stability impact of the crude blend's composition
- Baker Hughes ASIT™ asphaltene stability index test provided daily on-site measurements, for continuous crude compatibility assessment.
- LIFESPAN 3227K antifoulant was also utilized to disperse organic and inorganic contaminants in the process stream and reduce fouling in the heat exchangers

## RESULTS

85%

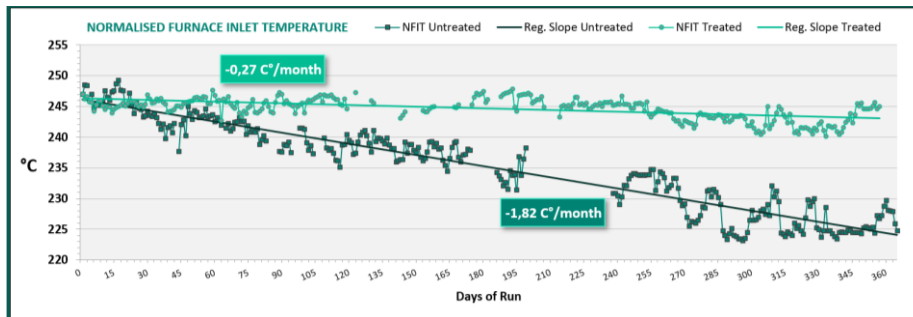
Reduction in extra fuel gas consumption and CO<sub>2</sub> emissions

\$1.0M

Net cost savings for reducing extra CO<sub>2</sub> emission from 15K to 2.2K tons/year

\$2.3M

Net cost savings for reducing extra fuel gas consumption from 4.8K to 0.7K tons/year



Normalized furnace inlet temperature was reduced from 1.82°C to 0.27°C a month while processing WTI crude.