



## THE CHALLENGE

The extent of fouling was extreme on the shell side and included significant coking on the tube side. This was due to an uncontrolled shutdown with an operational process upset which overloaded the exchanger exceeding five times the normal levels of fouling.

This type of extreme fouling would typically take 10+ days to clean using traditional processes utilizing well over 1 million gallons of water.

## THE SOLUTION

We used ABSOLUTE'S patent pending process in Phase 1 to remove hydrocarbon fouling. This cleaned the shell side fouling and all tubes except the coke plugged tubes. Due to the excessive coke we engaged a 3rd party to carry out the second phase which required minimal high pressure water, which was contained and recycled.

With coke plugs removed the exchanger was given a final rinse in our organic solvent to remove any hydrocarbon trapped behind coke plugs.

## BEFORE: HEAT EXCHANGER SPECIFICATIONS

Type of Asset: Heat Exchanger

Material: Carbon Steel

Size: 20 feet long, 61" diameter

Arrival Weight: 52,700 lbs

Design: Straight Tube

Fouling / Process: Tube- Heavy Gas Oil / Shell- Gas Oil

# of Tubes: 1460

Outer Tube Dimension: 1"

## AFTER: BENEFITS & RESULTS

Fouling Removed: 14,100 lbs

Time Cleaned: 24 hours

Est. Time Saved: 180 man hours

Return Weight: 38,600 lbs

Inspection Standard: Process

- ✓ No water consumed during Phase 1
- ✓ Removed fouling left on from other service providers