

“The Twisted Challenge” Twisted Tube Heat Exchanger



THE CHALLENGE

Due to broader surface areas, twisted tube bundles allow greater heat transfer compared to straight tube exchangers, however it becomes fouled more quickly due to the design. Additionally, the twisted tube design makes it very challenging to clean. This type of exchanger was historically required a minimum of 6 days of high pressure water cleaning at 100 litres/ minute.

Due to the total cost of ownership, the client was no longer attempting to clean these exchangers and was progressively phasing them out. ABSOLUTE accepted the challenge. The client sent us one from their “boneyard” to clean and the results were above expectation and unseen before.

BEFORE: HEAT EXCHANGER SPECIFICATIONS

Type of Asset: Heat Exchanger

Material: Carbon Steel

Size: 24 feet long, 60” diameter

Arrival Weight: 55,000 lbs

Design: Spiral Tube

Fouling / Process: Tube- Gas Oil / Shell-Gas Oil Pump Around ✓

of Tubes: 2,666 tubes

Outer Tube Dimension: 0.75”

THE SOLUTION

We used our ABSOLUTE patent pending technology to clean the exchanger and engaged a 3rd party to provide an inspection and report. The independent inspection was performed according to the clients direction, partial at 451 tubes, equating to 16.9% coverage.

We returned the asset to operating state, eliminating its disposal. The client was able to reclaim the operating efficiency in heat transfer that these exchangers provide and eliminated phase out costs of their twisted tube bundles.

AFTER: BENEFITS & RESULTS

Fouling Removed: Unknown

Time Cleaned: 24 hours

Est. Time Saved: 120 man hours

Return Weight: Unknown

Inspection Standard: Eddy Current

✓ No water consumed or deepwell disposal required

✓ Completed cleaning at a significant lower cost than previous service provider