



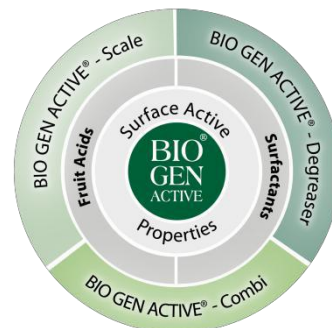
Cleaning Tube Heat Exchanger

Bio Gen Active® Degreaser 691, Combi 202 & 800 Gel

Green Cleaning Reducing Environmental Impact

DESCRIPTION OF APPLICATION

Sector	Refinery Industry
Application	Cleaning of tube heat exchanger
Product	Bio Gen Active® Degreaser 691, 800 Gel & Combi 202
Deposit	Cooked oil



BACKGROUND

Five heat exchangers in the preheating train of a SynSat installation were fouled with greasy rubber like deposits on the jacket side of the tubes. This led to increased fuel costs and reduced heat transfer capacity of diesel. At high temperatures, >250°C, coked deposits also formed. This was very difficult to remove by pressure-jet washing alone and previous attempts with conventional high pressure-washing were unsuccessful.

PROCEDURE

The cleaning procedure was made in three stages. In the first, Bio Gen Active® Degreaser 691 and CIP (Cleaning In Place) was used. In the second step, still using CIP, Bio Gen Active® Combi 202 was incorporated. Finally the entire system was flushed with water. In stage three the tube bundle was removed and Bio Gen Active® Degreaser 800 gel was applied before a final wash with high pressure water.

RESULTS

After high pressure flushing the estimated post-cleaning effectiveness exceeded 95 %. Practically all the coked oil had been removed. After 2 years of service the heat exchangers have not required any further need to be cleaned. As a result Preem Refinery produces a more environmental friendly diesel fuel and they were able to reduce production down time. Altogether Preem Refinery has saved more than \$200,000 per year by using Bio Gen Active® products for this one application.

