

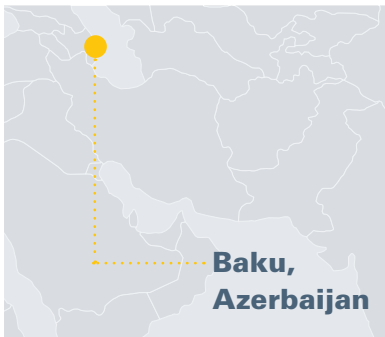
SPM Oil & Gas Repairs Cooler Leaks in 19 Days, Without NCR

Repair protocol delivers innovative solution, avoiding nonconformance reporting (NCR)

SPM™ Oil & Gas
A Caterpillar Company

Case Study

SPM Oil & Gas' Center of Manufacturing and Engineering Excellence in Baku enables oil and gas companies to reduce total cost of ownership (TCO) and nonproductive time (NPT) by providing superior engineering expertise to identify and repair damaged equipment quickly with quality materials, backed by a warranty.



FUN FACTS



Eliminated
new equipment cost



19-Day
turnaround



**In-Country
Commitment**

HIGHLIGHTS:

- Repaired multiple points of failure in heat exchanger plate
- Avoided NCR report
- Returned MPG cooler to service in 19

THE CHALLENGE

Main Power Generator (MPG) air coolers serve a vital function in oil and gas operations. The heat exchanger plate is crucial to transfer heat between water and oil. An exploration and production (E&P) company operating in an offshore oil and gas field in Azerbaijan experienced a heat exchanger plate failure and sought to quickly repair the equipment to avoid filing an NCR and extended downtime.

THE APPROACH

The E&P approached SPM Oil & Gas' Center of Manufacturing and Engineering Excellence in Baku for a solution. SPM Oil & Gas' skilled technicians and engineers employed multiple methods to determine the best repair approach. After ruling out welding the heat exchanger tube ends and installing new gaskets, technicians created a multi-point repair plan to uniquely resolve the heat exchanger plate's leaking.

SPM Oil & Gas technicians drained the cooler pipes and tested each tube to identify leak points. A new inlet plug fitting was connected to the hand water pump and pressurized to OEM specifications. Temperature-resistant red silicon (RTD) was applied between and around each tube, allowing O-rings to be fitted around each tube between both plates.

Technicians manufactured a duplicate brass seal plate five millimeters thick to perfectly replace the original seal plate. Once installed, the heat exchanger plate tube ends were soldered to create a sure seal between the tubes and new plate. The thickness of the original seal plate was reduced in thickness to three millimeters on one side and two millimeters on the other. The refurbished seal plate was installed with a .25-millimeter NOVUS SUPRA gasket.

Finally, pressure and leak tests were performed to confirm the repair.

THE RESULTS

The repair process eliminated all heat exchanger plate leaks and extended the equipment's operational life.

The MPG air cooler was returned to service in just 19 days without an NCR report, minimizing the operator's downtime and need to purchase new equipment.

THE SOLUTION

SPM Oil & Gas' state-of-the-art Center of Manufacturing and Engineering Excellence in Baku and in-country engineering expertise assure best-in-class quality, delivery, and responsiveness for oil and gas companies across the Eastern Hemisphere. SPM Oil & Gas can solve engineering challenges and improve efficiencies with a global product offering and localized service capabilities that meet the needs of each operating environment. Its strategically located Centers of Excellence, engineering and technical proficiency and locally manufactured parts enable SPM Oil & Gas to reduce turnaround times by more than 50% compared to returning equipment to OEMs.

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