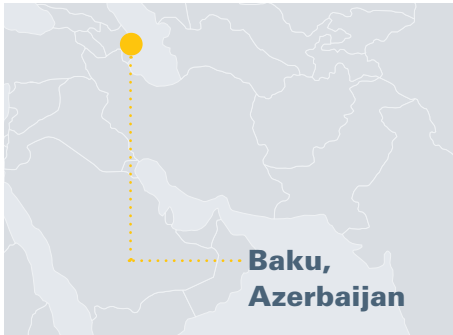


SPM Oil & Gas Reconditions Chemical Process Pump

Leaking Pump Returned to Use

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 pumps quickly with quality materials, backed by a warranty.

THE CHALLENGE

An exploration and production (E&P) company operating in Azerbaijan had detected leakage from the mechanical seal of a chemical process pump that was part of their operations. The pump was removed from service.

THE APPROACH

The E&P client sent the leaking pump to SPM Oil & Gas' Center of Manufacturing and Engineering Excellence in Baku for inspection. SPM Oil and Gas stripped down the pump for analysis and detected multiple damaged elements. Broken grub screws were found in the shaft coupling. The impeller and its shaft had come uncoupled from the motor shaft and were touching the pump casing, causing further damage. The key place on the motor shaft was missing its key, and the grub screw holes were not connected to corresponding areas on the shaft.

SPM Oil and Gas replaced the mechanical seal to protect against further leakage. The damaged areas of the rotor were removed. The pump coupling was repaired and installed on the rotor, with the threads and screws of the coupling fixation renewed to ensure stable performance. The pump's impeller was reconditioned, cleaned, and installed on the pump.

When the pump was first re-assembled and tested, a high temperature was detected in the motor area. SPM Oil and Gas sent the motor to an outside party for repair; however, the motor was still showing signs of temperature issues in a follow-up test of the assembled pump. The pump was determined to require the installation of high-speed bearings to ensure ongoing temperature control.

THE RESULTS

Following the reconditioning, motor repair, and addition of high-speed bearings, the pump was re-assembled and underwent another round of testing. Its temperature level was found to be in an acceptable range and no leakage or noise were detected.

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.

FUN FACTS



Repaired
to industry standards



18-Day
turnaround



In-Country

Commitment

HIGHLIGHTS:

- Detected multiple damaged parts inside leaking chemical process pump
- Replaced mechanical seal and repaired and reconditioned components of rotor and impeller
- Continued to detect unacceptable temperature ranges from motor while in operation; analysis by outside party determined installation of high-speed bearings were required
- Returned pump to service in 18 days

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