



FeS DISSOLUTION AND IRON CHELATION OF SCAVSOL AF 50 VS THPS

THE PROBLEM

An oil and gas producer in the Permian using THPS was experiencing iron sulfide deposition in their oil and gas processing system. The system was producing approximately 186 barrels of oil, 820 barrels of water, and 214 MSCFD of gas via artificial jet pumps and standard separation equipment.

The effects of uncontrolled iron sulfide in the processing system resulted in estimated penalties due to high basic sediment and water (BS&W) measurements, increased corrosion rates, employee overtime to address process flow, and increased chemical costs for correcting interfacial pads and water quality.

The total cost to the operator was calculated at over \$200,000/year.

THE SOLUTION

Solugen supplied the company with ScavSol AF 50, a chelating agent that provides value to oilfield operations by remediating and preventing iron sulfide deposition, which eliminates additional costs associated with fluids and gas handling. They also provided a local application expert on-site to help remediate the existing fouling. This eliminated the need for excess chemical consumption, downtime due to flow constraints, pipeline penalties, and improved asset integrity.



DI water (left) followed by addition of FeCl_3 (Iron Chloride) and Na_2S (Sodium Sulfide) to afford in situ generation of FeS (Iron Sulfide) (middle) after a ScavSol AF 50 treatment to sequester the Fe^{3+} ions (right).

ScavSol AF 50 was applied on the recirculated artificial lift system to chelate iron prior to the formation of iron sulfide for the initial 24 hours to prevent and remediate pre-existing iron sulfide. Following confirmation of iron sulfide removal with evidence from vessel sight glasses and in-line screens, ScavSol AF 50 was applied at the recommended stoichiometric rate based on iron at 200 ppm*.

Solugen monitored the system for several days then began reducing the rate of ScavSol AF 50 to optimum levels to control iron. The ScavSol blends provided better water clarity than THPS and removed the FeS interface.

VALUE DELIVERED

Through a single application, Solugen outperformed THPS and remediated the iron sulfide in 24 hours, returning the facility to peak performance with an **estimated annual savings to the customer of over \$100,000.**

**Based on 50 ppm of average iron in the system and 800 barrels water produced per day*

