

MC EB-1625 Improves Injection System Operations

Water Quality Improves as Direct Savings of \$156,000/year Achieved

BACKGROUND

The produced water being hauled in contains H₂S, FeS, and crude oil which skimmed regularly. The water quality changes with every load. Depending on the water quality being hauled in, filter runs on the production water range from every 30 minutes to several hours before plugging off. When plugged on the production side, the operator is required to change them. Further downstream in the injection facility as the hotter production water was depleted the transition to the colder fresh water would result in premature plugging of the 5 micron filters. This also resulted in increased manpower and very high filter usage to keep these facilities operating 24/7.

ISSUES

This case involves a waterflood facility where produced water and fresh water are used as the injection fluid. Total volume injected is approx. 10,000 bbls per day, with 1,000 to 2,000 bbls coming from produced water from surrounding wells that is hauled in by truck. The produced water is processed through three 400 bbl tanks which are heated to 150 F, then run through a hydro-cyclone unit to help remove the hydrocarbons. The fluid is then filtered through 25 micron filters and then into the injection facility where it is filtered again through 5 micron filters. It is then injected, in some cases mixing with fresh water that is 50 F. Testing conducted on the filters identified oil and FeS as the primary plugging agents.

ANALYSIS

Multi-Chem's local technical team set up a project to improve the filter runs on production side as well during the transition period from the warm produced water to the colder fresh water on the injection side. The right product would improve oil, water and solids separation and result in much more effective and easier skimming procedure.

RESOLUTION

Several different approaches have been taken to combat the problems encountered on this system such as biocides, iron sulfide dissolvers, surfactants etc with very little success. MC EB-1625 was initiated on continuous basis into the first tank where the water trucks were unloading. This would allow adequate mixing to occur. Usage rate of 1 GPD proved to be effective at improving process.

DELIVERED VALUE

Since the MC EB-1625 program was started, the system has required less intervention. Reductions in manpower, system downtime, and filter usage have occurred. Filter costs have been reduced from \$400 to \$600 per day to \$100 to 150 per day. Chemical usage costs of \$21 per day result in considerable cost savings for the operator.

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