



NATURAL GAS PROCESSING PLANT

ENVIRO-SCRUB® LM

Background

A natural gas processing plant was treating a stream with high H₂S content using other H₂S scavenging technologies. The operation of this system is based on sparging gas through the solution to remove the H₂S in the sparge contactor. Once the H₂S monitor in the outlet reaches the breakthrough point, the spent chemical solution is removed and replaced with fresh chemical solution. The breakthrough point was 4 ppm. The plant was looking for other technologies in order to increase the time between change out to reduce down time, maintenance, and chemical costs. The goal was 30 days between change outs for this system. The customer tried 4 or 5 scavenger technologies, which resulted in run time between change outs lasting anywhere from 7 to 25 days.

System Data

Gas production: 126 SCFM average
Inlet H₂S: 1,300 ppm
Outlet H₂S: <4 ppm
Pressure: 200 psig

Solution

Three trials were run with Enviro-Scrub® LM in the system using different mix ratios. In the first trial 14 drums of Enviro-Scrub® LM plus one drum of methanol was mixed, resulting in 24 days of run-time. For the second trial 15 drums of Enviro-Scrub® LM were fed in the system, and 28 days runtime was achieved. A final trial with 7 drums of Enviro-Scrub® LM plus 7 drums of water

achieved 27 days run-time. The last trial optimized the dosage, resulting in a chemical consumption rate of 100% theoretical H₂S levels were monitored during the trials and Enviro-Scrub® LM consistently reduced H₂S levels to <4 ppm during the run-time.

Results

Longer runs were obtained using Enviro-Scrub® LM. Using the optimal dosage of Enviro-Scrub® LM the time between change out experienced from the previous technologies was increased. The desired 30 days run-time can be met with incremental addition to the charge of Enviro-Scrub® LM. Analytical tests of the samples collected in the trials showed that chemical usage in this application is 0.05 gal Enviro-Scrub® LM MMSCFD/ppm H₂S. Taking 20 days between breakthrough with other technologies there are 18.25 change outs per year, using Enviro-Scrub® LM there are only 13.51 change outs per year that represents almost 5 change outs less per year, translating this to savings due to labor, lost production and disposal costs.