

CASE STUDY 401

NATURAL GAS PROCESSING PLANT H₂S OPTIMIZATION PROGRAM

BACKGROUND

A natural gas processing plant was treating a stream with high H₂S content using a competitor's H₂S scavenging technology.

H₂S was removed by sparging the gas through our Enviro-Scrub® LM H₂S scavenger in a contactor. When the H₂S monitor at the contactor outlet reached the breakthrough point of 4 ppm, the scavenging chemical solution in the unit was replaced.

The plant was looking to increase the run-time between change-outs, thereby reducing down time, maintenance and chemical costs. Prior to Q² technologies' involvement, four different H₂S scavenging technologies had been tested with varying results. The run-time between change-outs for these trials ranged from 7 to 25 days.

SYSTEM DATA

| | |
|-------------------------|---------------------------------|
| Gas Production | 126 SCFM <small>average</small> |
| Inlet H ₂ S | 1,300 ppm |
| Outlet H ₂ S | < 4 ppm |
| Pressure | 200 psig |

SOLUTION

- Q² Technologies ran three separate trials with Enviro-Scrub® LM, using a different mix ratio for each test. In the first trial, a mixture of Enviro-Scrub® LM and methanol achieved 24-day run. The second trial used Enviro-Scrub® LM with no dilution, and runtime increased to 28 days.
- At this point an analysis of the replaced chemical revealed that much of it was unreacted. The treatment program for the third trial was optimized by diluting Enviro-Scrub® LM with water. The resulting chemical consumption rate was 100% theoretical, and the run-time achieved with this optimized trial was 27 days.

RESULTS

- Enviro-Scrub® LM delivered longer runs than any other H₂S scavenging technology tested.
- Based on an average of 20 days between chemical change-outs with competitive programs, Q² Technologies achieved a 35% increase in run-time and a 35% reduction in change-outs per year.
- With the Enviro-Scrub® LM solution, savings include less lost production, as well as reduced maintenance and chemical disposal costs.

TAKE-AWAY:

- Run times per chemical change-out increased by 35% by using Enviro-Scrub®