

ULTRAFAB™ REMOVES H₂S FROM FULL WELL STREAM



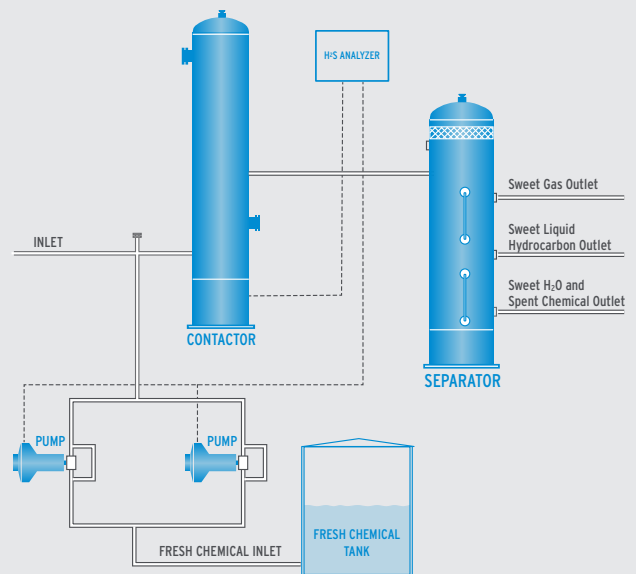
SITUATION

Hydrogen sulfide is a nuisance to oil and gas producers in the Eagle Ford. While most operators implement solutions that remove H₂S from produced gas and effectively meet the sales specification, many operators struggle to successfully remove H₂S from produced liquids. Whether originating in crude oil or produced water, H₂S migrates to the vapor phase when placed in storage tanks under atmospheric pressure. This can create a significant safety hazard for employees working in the facility as H₂S concentrations can be 200 or 300 times more concentrated in the vapor phase than in the liquid phase.

CHALLENGE

An Eagle Ford operator using UltraFab Flooded H₂S Removal Systems to treat their sales gas was injecting a large volume of liquid scavenger in multiple locations to control H₂S coming out of the liquids. Removing this H₂S was critical for the safety of their personnel and for safe transport of the crude oil. The various injection points included downhole injection via a cap string to remove H₂S before topsides production, and secondary injection points in the liquid dumps of the separators to control H₂S released from the liquids into the headspace of the storage tanks.

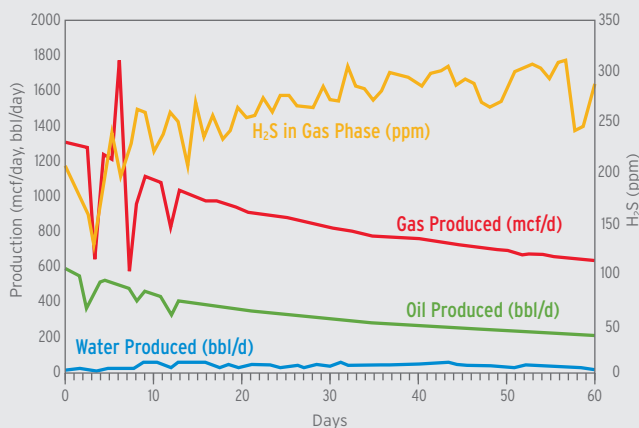
The operator was using as much as 160 gpd of scavenger to treat produced oil and water. This was in addition to approximately 25 gpd used by the UltraFab system to reduce H₂S in the produced gas to less than the 4 ppm sales specification. Even though the existing program



successfully mitigated H₂S and maintained a safe work environment, the operator knew the methods being used were not efficient and that scavenger consumption was higher than necessary.

SOLUTION

The operator asked UltraFab personnel to help them determine an effective method for treating the entire well stream to remove H₂S from both the gas and liquid phases. A collaborative effort culminated with installation of an UltraFab Flooded H₂S Removal System modified to handle liquids and also incorporating a three phase separator so the oil and water could be sent to their respective tanks and pipelines. A specialty chemical program was also designed to treat the production stream at the wellhead for paraffin and scale upstream of the UltraFab system.



RESULTS

The UltraFab system successfully treated all three phases of well production at maximum rate and has continued to do so for several years now. At its peak, the UltraFab system sweetened over 700 bbls/day of liquid, 1.5 MMscf gas, and as much as 250 ppm H₂S. H₂S concentration in the outlet gas was successfully maintained below the required 4 ppm outlet sales spec and no additional scavenger was necessary in the oil or water due to high H₂S.

The installed solution consumed an average of 42 gpd of triazine scavenger to treat the entire well stream - a 145 gpd reduction in chemical usage compared to the previous treatment method. The customer was also able to remove their high pressure separator since the UltraFab solution included a three phase separator.

The operator was pleased with the result and began revising production plans to use UltraFab Flooded H₂S Removal Systems for full well stream treatment on other well pads where H₂S was present.

THE ULTRAFAB ADVANTAGE

UltraFab design, coupled with Nalco Champion technical expertise and wide-ranging field experience, result in greater operational efficiency and lower chemical cost. UltraFab solutions are available in a wide range of sizes and configurations, treating gas volumes ranging from a few MMscf/D to several hundred MMscf/D and reducing H₂S concentration to virtually any outlet specification, including zero ppm.

GOALZERO

SAFETY MATTERS

The safety of our associates, customers and communities is vitally important. From the way we operate, to the products we develop, to how we partner with customers, our goal is zero: zero accidents, zero incidents and zero environmental releases.

At Nalco Champion, safety is more than a metric, it's a mindset. It's how we conduct ourselves, every day, everywhere it matters.

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