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SVW-40565: Eagle Ford Central Delivery Point (CDP)

The Problem

An Eagle Ford Shale operator aggregates production from multiple fields to a Central Delivery Point (CDP) consisting of three 50,000-barrel oil storage tanks and associated process equipment. New horizontal wells from one particular area served by the facility's gathering system produce fluids with elevated hydrogen sulfide levels, leading to increasing H_2S concentrations at the CDP inlet as new wells were brought online.

The primary concerns are preventing H_2S vapors from flashing into the oil tank headspace and exceeding the oil sales pipeline specification limit of 4 ppm. To manage H_2S, the operator was continuously injecting an amine-based, high-pH scavenger. However, due to the chemical's incompatibility with produced water, the injection point was limited to a distance of 1,000 feet upstream of the oil tanks.

Despite injecting 300 gallons per day, frequent H_2S spikes measured in the tank headspace required batch treatments of 500-700 gallons of the amine scavenger per event. At the same time, severe scale formation was occurring in water knockout vessels and heater treaters.

The Solution

Seeking to maintain H_2S below 4 ppm and mitigate scaling – and with a broader objective of reducing chemical expenditures – the operator turned to Imperative Chemical Partners for answers.

A root cause investigation of the scaling issues determined that the calcium-rich produced water was negatively reacting with the high-pH amine scavenger. Water chemistry analysis confirmed that recirculating tank bottoms through the system intensified the problem, as evidenced by comparisons of CDP inlet water samples versus internal facility samples.

Imperative Chemical Partners proposed replacing the amine scavenger with SVW-40565, a non-triazine, water-compatible scavenger formulated for three-phase production streams. Although dosage rates were initially maintained at 300 GPD, SVW-40565's lower per-gallon cost delivered an immediate 30% savings.

Unlike the amine-based scavenger, SVW-40565 is compatible with oil, gas, and water and does not promote scale formation. This allowed a second injection point to be installed on the main trunkline ±12 miles upstream of the CDP, where production inflow is a 50/50 mixture of oil and produced water.

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The Outcomes

Upstream injection significantly extends chemical contact time for more efficient H_2S treatment. This allowed rates to eventually be lowered from 300 to 200 GPD, capturing a further ±30% cost reduction. In addition, injecting SVW-40565 upstream enables a high-H_2S leg of the gathering system to be treated prior to commingling to reduce CDP inlet H_2S concentrations while preventing scaling downstream.

Since implementing SVW-40565, no batch treatments have been required. Eliminating scale formation has decreased downtime and facility maintenance, extended equipment life, and improved overall operational stability. The bottom line is more consistent H_2S scavenging performance at significantly lower cost.

In fact, despite CDP throughput roughly doubling to 6,000 BOPD and production from new wells containing up to 15,000 ppm H_2S, the operator has realized a ±60% savings in total chemical spend, demonstrating the economic value of selecting the right chemistry and injection strategy in a highly dynamic production environment.

↑ 75%
Increase in Production Throughput

↑ 300+%
Increase in H_2S Concentrations

↓ 33%
Reduction in Chemical Injection Rates

↓ 60%
Reduction in Chemical Spend

↓ 100%
Elimination of Batch Treating and Scaling Issues

CASE STUDY

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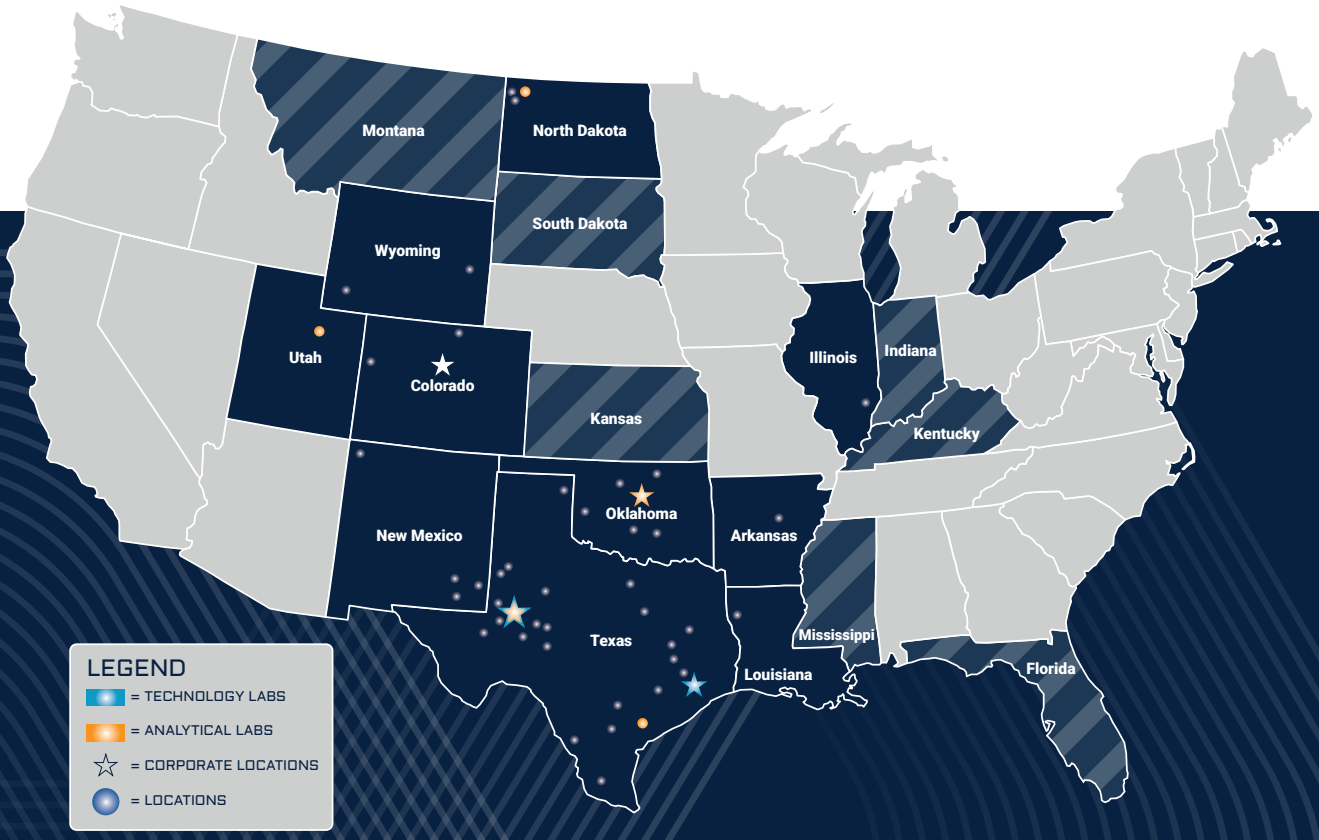

If you are interested in increasing oil and gas production and reducing operating costs, contact us today. We are ready to put our people, processes, and products to work for you.

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