

CASE STUDY

SECURE HS-8910 Field Trial Success: H₂S Controlled and Chemical Cost Reduced by 34%

EXECUTIVE SUMMARY

A Canadian heavy oil producer with a field consisting of multiple single well oil batteries required continuous chemical treatment to control hydrogen sulfide (H₂S). Produced liquids flowed through the tubing directly to the production tanks, while casing gas was routed to the tank headspace. The existing program used an MEA-triazine-based H₂S scavenger injected at two locations: down the casing and into the production piping upstream of a static mixer or tank inlet.

A 16-week field trial of SECURE HS-8910 was initiated at one single-well battery on October 14, 2025 and continued through February 3, 2026. HS-8910 replaced the incumbent MEA-triazine-based scavenger at the existing casing and flowline injection points. Retaining the same injection configuration allowed the performance of the two programs to be compared without introducing changes to the chemical delivery system.

34%

CHEMICAL COST
REDUCTION

\$150K

CAD ANNUALIZED
SAVINGS

67.5%

INJECTION RATE
REDUCTION

37%

LOWERED TOTAL
SCAVENGER VOLUME

THE CHALLENGE

The operation required a scavenger program capable of consistently controlling monitored H₂S to the field operating target of less than 10 ppmv. During the baseline period, H₂S levels approached 800 ppmv despite the relatively high injection rates used by the incumbent program.

The replacement program needed to:

- Improve the consistency of H₂S control.
- Reduce total scavenger consumption.
- Reduce chemical treatment cost.
- Perform effectively within a liquid-rich production system.
- Use the existing casing and flowline injection infrastructure.
- Reduce the potential for carbonate-scale formation associated with higher-pH MEA-triazine scavenger formulations.
- Avoid creating additional operational or tank-fouling concerns.

The primary application challenge was therefore not simply to replace the incumbent chemistry, but to improve treatment performance while progressively optimizing the chemical rate and maintaining H₂S near the operating target.

THE SOLUTION

SECURE HS-8910 is a water-soluble, non-triazine, nitrogen-free H₂S scavenger formulated in a complex alcohol carrier for liquid-rich and in-line applications. The product is controlled at a pH of 5–7, compared with pH 9–11 for conventional MEA-triazine scavengers. This pH-balanced formulation is designed to reduce the potential for carbonate-scale formation associated with higher-pH scavenger chemistry.

The combined HS-8910 injection rate was initially established at 200 L/d across the casing and flowline injection points. The rate was then reduced in controlled steps based on the monitored H₂S response at the tank inlet and production tanks. By the end of the initial trial, the combined injection rate had been optimized to 65 L/d.

Following the initial 16-week field trial, the HS-8910 program was expanded from one location to three locations and subsequently to the remaining applicable locations within the operation.

THE INSIGHTS

The trial demonstrated that effective H₂S control did not require either increased chemical consumption or changes to the existing injection infrastructure. Maintaining the original casing and flowline injection points provided a more direct comparison with the incumbent program and showed that chemistry selection and controlled rate optimization were the primary changes affecting treatment performance.

Progressively reducing the injection rate, rather than moving immediately to a lower target rate, allowed the operating team to evaluate the H₂S response at each stage of the optimization. This approach identified a substantially lower final operating rate while limiting the risk of losing H₂S control during the transition.

The application also identified several potential secondary benefits of HS-8910:

- Its formulation is suited to liquid-rich and in-line scavenger applications.
- Its controlled pH is expected to reduce carbonate-scaling tendency relative to higher-pH MEA-triazine formulations.
- Its non-triazine chemistry provides an alternative where triazine consumption, reaction products, or chemical loading are operational concerns.
- ATP testing conducted during the evaluation showed a substantial decrease in microbial activity in both production tanks.

THE RESULTS

The HS-8910 trial produced measurable improvements in H₂S control, chemical consumption, and treatment cost, including:

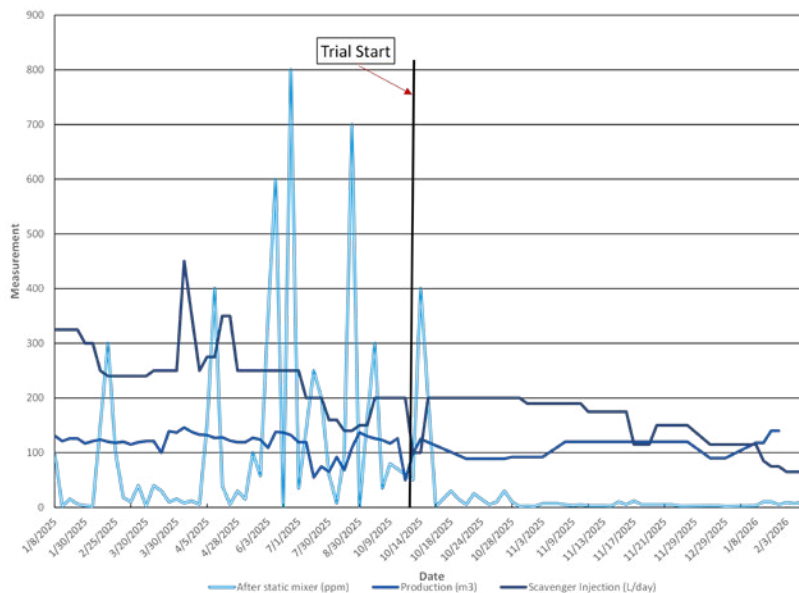
✓ **Improved H₂S control:** Baseline H₂S monitoring included excursions approaching 800 ppmv. Following the introduction and progressive optimization of HS-8910, both the variability and magnitude of monitored H₂S results decreased. By the end of the trial, the highest monitored readings were approximately 10 ppmv, near the field operating target of less than 10 ppmv.

✓ **67.5% reduction in final injection rate:** The combined scavenger injection rate was reduced from 200 L/d at the beginning of the trial to 65 L/d at the end, representing a 67.5% reduction in the final operating rate.

✓ **37% reduction in total scavenger volume:** Because the injection rate was progressively reduced throughout the evaluation, the total scavenger volume used over the comparison period was reported to be 37% lower than the incumbent program.

✓ **34% reduction in chemical cost:** The optimized HS-8910 program reduced chemical treatment costs by 34%, resulting in estimated annualized savings of approximately CAD \$150,000.

The 16-week field trial demonstrated that SECURE HS-8910 could provide improved and more consistent H₂S control while materially reducing scavenger consumption and treatment cost.



BUSINESS OUTCOMES

Achieve improved H₂S control and lower treatment cost without requiring changes to existing injection infrastructure.