

Innovative Startups Address Hydrogen Sulfide And Other Costly Problems

By Colter Cookson

With its ability to drill thousands of feet below ground, transport oil and natural gas hundreds of miles, and turn those raw materials into everything from electricity to plastic, the oil and gas industry is a modern marvel. It owes much of its success to its people, who are always looking for better ways not only to plan, drill, complete and manage wells, but also to provide the countless ancillary services that make production possible.

Nowhere could that spirit of innovation be more evident than in the newest service and supply companies. These startups' founders are leveraging their track records, relationships and expertise to identify gaps and inefficiencies in traditional processes, then come up with creative solutions. Their focuses range from providing capital to optimizing drilling equipment, digitizing well logs, remediating sour crude and treating produced water.

Removing H₂S

Among these innovators is RevEnergy

formed to offer more efficient ways to remove hydrogen sulfide from oil. “With the assistance of AECOM, a world-renowned engineering firm, we have developed a transportable, skid-mounted system that can reduce hydrogen sulfide concentrations below 4 parts per million by weight,” reports Gary Devries, the company’s chief financial officer. “That is low enough to meet strict downstream processing specifications and allow safe transportation by truck, train or pipeline, meaning producers will be able to market their oil more effectively.”

RevEnergy’s process involves using an inert gas to strip H₂S from the oil. The gas is recycled and reused repeatedly, and the entire process takes place in a closed system, so there are no emissions, and therefore, no need for Title V air permits, Devries says.

“The inert gas leaves nothing behind in the oil,” he adds. “This gives us an advantage over chemical solutions such as triazine, which create residue that generally reduces the oil’s value and must be removed downstream.”

The process also does not cause any

loss in the amount of sellable oil, Devries reports. “If a barrel comes in, a barrel comes out,” he emphasizes. “This is in contrast to mechanical treatment methods, which sometimes lose 2-3 percent of the oil volume during treatment as some of the lights are stripped out.”

Devries says RevEnergy plans to operate its treatment skids for clients in exchange for volume-based monthly fees, a model that reduces the client’s upfront capital costs. The exact cost will vary based on the quality and quantity of the oil that needs to be treated, he says, noting that heavier oils take longer to process.

“Usually, the system would be deployed at a central tank battery or processing facility,” Devries comments. “The economics can make sense at volumes below 1,000 barrels of oil a day, but we would not want to put a system on an individual well that is only 100 bbl/d.”

Simulations and lab tests suggest that the process will be suitable for oil from every major U.S. play, Devries reports. He says the company is looking for partners to do field tests. □