



## APCOTANE™ eliminates H<sub>2</sub>S allowing for Pipeline Specification Approval.

Apollo's patent pending Apcotane™ able to work effectively

### CHALLENGE

Find a cost effective hydrogen sulfide (H<sub>2</sub>S) treatment for sour oil in South Texas

### SOLUTION

Apply Apcotane™ to improve H<sub>2</sub>S treatment efficiency while increasing per barrel price.

### RESULTS

- ▶ Eliminate H<sub>2</sub>S levels to allow for pipeline specification.
- ▶ Economically treat sour oil thus transforming the bottom-line.
- ▶ Add margin to the bottom-line by reducing transportation cost and increase realized price per barrel.



### Eliminate Hydrogen Sulfide in sour crude oil.

Hydrogen sulfide (H<sub>2</sub>S) is naturally produced from the Eagle Ford Shale Formation. The hydrogen sulfide levels can range from a few ppm up to 50,000 ppm and must be reduced to below pipeline gas specifications, typically less than 10 ppm. In addition to reducing the value of the product, hydrogen sulfide exposes producers to environmental and safety risks and increases the risks of corrosion.

Operator is currently producing oil in the Eagle Ford Shale with high H<sub>2</sub>S volumes. They decided they would like Apollo to do a test on their site. At this particular site about 200 barrels of oil is produced per day. The H<sub>2</sub>S ranges between 1.5%-2% in the vapor space.

### Apply Apcotane™ to treat oil, increase profits.

The Operator tasked Apollo with lowering the overall treating cost and improving the treating efficiency for hydrogen sulfide. Apollo recommended Apcotane™, the H<sub>2</sub>S mitigation product which is a bi-soluble, non-corrosive, and irreversible product.

Apcotane™ is formulated to eliminate potential calcium carbonate scale precipitation, common among triazine products, by not allowing precipitation to occur.

Apollo was able to provide direct injection of Apcotane™ via pumps already on location. Apcotane™ was able to be injected directly in the same location that triazine was previously being injected. This is a huge discovery because it allows for virtually zero capital expenditures for the operator to implement across their assets.

### Reduced H<sub>2</sub>S levels to oil pipeline specifications

Previously the operator has used a triazine product to help reduce the Hydrogen Sulfide. They had been able to drop it from 15,000-20,000 ppm down to around 300 ppm. This would not allow for pipeline spec but was allowing them to truck the oil. They were adding in .1% of solution to achieve these results. So Apollo was asked to do a comparison using the same dosage rate. Due to long residence time Apollo was asked to thief the tank 24 hours after implementation. After the residence time, Apcotane had shown the oil contained zero H<sub>2</sub>S.

Apollo was then tasked with checking the tank after six hours. At the six hour mark only about 80 barrels of oil were present in the tank. The tank was thieved. Once again there was zero H<sub>2</sub>S showing on the dragger tube. After these great results, Atlas then tasked Apollo with reducing Apcotane to .05% of solution (about 4 gallons per 200 barrels). Apollo then checked the tank after 6 hours, once again Apcotane™ totally eliminated Hydrogen Sulfide.

Field testing has proven Apcotane™ is the superior H<sub>2</sub>S mitigation product when compared with Triazine. The ability to replace a typical scavenger in normal application without Capital Expenditure is very advantageous for producers when dealing sour oil.