

High-Resolution H₂S Monitoring to Optimize Refining Services

A WellAware Case Study

Introduction

Arkema group's Careflex[®] division helps oil and gas refineries perform safe and efficient catalyst sulfiding operations. Arkema's highly trained technicians enable customers to remove harmful sulfur during one of the final stages of the hydrocarbon refining process. With Arkema's support, refineries are able to optimize sulfiding processes, maximize equipment runtime, and prevent sulfur dioxide emissions from harming people or the environment. However, Arkema realized there was an opportunity to enhance its services even more with real-time monitoring technology. WellAware stepped in with a monitoring solution that has since improved their results significantly.

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About the Operator:

Arkema was founded in October 2004 out of a reorganization of Total's Chemicals branch. The company has since grown through strategic investments and targeted acquisitions and is now one of the world leaders in specialty chemicals. Arkema currently delivers many types of specialty chemicals to various industries. The Careflex[®] division, specifically, provides on-site sulfiding services to oil and gas refineries all over the globe.



The Challenge: Lack of Real-time Visibility Into Critical Refining Process

Removing sulfur dioxide emissions from the late-stage hydrocarbon refining process is paramount for oil and gas refineries. Sulfur can cause critical equipment to fail at a tremendous cost to operators, and sulfur dioxide emissions are especially harmful to people and the environment. Therefore, refineries have to manage and control sulfiding processes carefully.

The challenge is that neutralizing sulfur requires precise amounts of sulfiding agent at the right time and location. That's why many refineries choose to work with Arkema's Careflex division, which delivers a highly specialized sulfiding agent, DMDS Evolution® E2, through a mobile operation. Arkema technicians travel to refineries and provide sulfiding services on-site.

However, Arkema technicians didn't have complete visibility into how their efforts translated into sulfur removal progress. They weren't always sure whether they pumped enough or too much chemical, and customers couldn't see when the catalyst was active.

The lack of insight prevented Arkema from providing exceptional customer service with complete confidence. The team wanted to show customers real-time data about progress and prove when sulfur was neutralized. Customers also often wanted to know precisely when the catalyst in the sulfiding process was activating.

Arkema set out to find a mobile solution to increase visibility, both for technicians and customers.

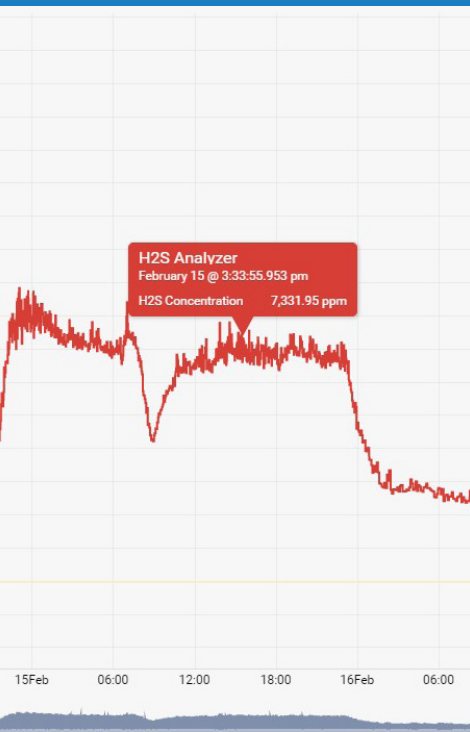
The Solution: High-Resolution Monitoring and Web Interface Showing Real-time Performance

After evaluating different options, Arkema chose to work with WellAware to implement a mobile and remote real-time monitoring platform to track hydrogen sulfide (H₂S) concentrations in process streams during sulfiding operations.

WellAware provided Arkema with a web-based interface that managers could use to track sulfiding jobs, aggregate performance data, and follow sulfiding fleets in the field. Refinery customers were also given

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secure, site-specific views into sulfiding job performance and H₂S concentrations, allowing them to see when catalysts were activating.

In addition to monitoring inline H₂S concentrations, WellAware also implemented a pump monitoring program using specialized meters to track chemical delivery from mobile high-pressure pump systems. The monitoring program tracked 30-second resolution pump flow rates and aggregated chemical delivery volumes.

Consequently, Arkema was able to measure job efficiency more effectively because the team knew how much chemical was being used relative to H₂S concentrations.

The Results: Precise Chemical Delivery, Safer Operations

Using WellAware's chemical management solution, Arkema's Careflex division is now able to support customers better and provide a safer, more efficient service.

Arkema technicians can track H₂S and chemical flows in real time, allowing them to inject the exact amount of chemical needed to remove the most amount of sulfur from the hydrocarbon refining process. As a result, the division has been able to reduce chemical spending and waste without compromising success.

Arkema can also analyze historical data from previous sulfiding jobs to set benchmarks for chemical usage and expected results. These benchmarks are useful for communicating expectations to customers up-front. Furthermore, refinery workers and Arkema technicians are safer because no one has to check H₂S concentrations manually. Remote monitoring enables everyone to stay away from highly corrosive and toxic doses of H₂S.

Arkema is able to deliver its upgraded Arkema service to premium oil and gas refiners, serving companies like Shell, ExxonMobile, Citgo, Valero, CNRL, and more with confidence. The company now has the technology and capabilities it needs to optimize its sulfiding business further and operate with the highest level of customer care.

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Want to learn more about WellAware's monitoring solutions?

Check out our platform today.

Get Started



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