

Halliburton PSLs Collaborate to Meet Major Mideast Refiner's Decontamination Needs

TIGHT TIMELINES AND WATER CONSERVATION GOALS COMPLICATED THE PROJECT, WHICH REQUIRED EQUIPMENT, SPECIALTY CHEMICALS AND TECHNICAL EXPERTISE ON SITE

MIDDLE EAST

CHALLENGE

Remove pyrophoric iron sulfide from eight separate units during a refinery turnaround.

- » Refiner wanted to complete the turnaround quickly, in less than 10 days.
- » To save water, the refiner asked Halliburton to complete the work using only vapor phase injection

SOLUTION

Two Halliburton service lines collaborated to fulfill the scope of work.

- » Careful project planning and execution were required to meet expectations and ensure success.
- » Halliburton's local service team supplied the manpower and equipment.
- » Chemicals from our upstream and downstream specialty chemicals businesses were used to scavenge H₂S and solubilize the resulting sulphates for easy removal.

RESULTS

Halliburton met all customer requirements for the project, while providing all equipment, chemical products, manpower and technical expertise.

- » Halliburton eliminated H₂S and reduced the Lower Explosive Limit (LEL) to 0 percent in each of the units it cleaned.

OVERVIEW

A major new refinery in the Middle East was looking for a company to decontaminate eight separate units during its first major turnaround. The process involves a two-phase application of specialty chemicals to remove pyrophoric materials that reduce throughput and pose a serious fire risk.

With Halliburton's Pipeline and Process Services PSL providing local manpower and equipment and the Athlon/Multi-Chem PSL providing the chemicals and onsite technical expertise, we were able to offer a cost-effective solution that didn't involve using subcontractors for any part of the Scope of Work. The result was a streamlined project that met operational objectives in a cost-effective manner.

CHALLENGE

Because the project involves a varied scope of work — project management, manpower, equipment, specialty chemicals, and onsite technical consulting — it is standard for bidding companies to use one or more subcontractors for these types of jobs. However, this can complicate an already complex and critical task – removing the buildup of combustible iron sulfide from refinery equipment.

This particular chemical cleaning and decontamination job included cleaning a 90-meter-high crude distillation column with a total volume capacity of 6,000 M3, plus two desalters units with significant H₂S and sludge waste content.

SOLUTION

Halliburton leveraged its expertise in specialty chemicals, downstream operations and project management to complete this complex job under a tight time frame. RPA-880, an H₂S scavenger from our downstream specialty chemical product line, was applied to each refinery unit to form sulphates. A wetting agent, MX 5-4225, from our upstream production chemicals product line was then applied to solubilize the sulfates in water and remove it from the system. The wetting agent also included limonene, which helps degasify and addresses other contaminants while also providing a pleasant citric smell.

RESULT

Following Halliburton's treatment regimen, the H₂S found in each unit had been completely eliminated. Additionally, LEL percent, which indicates the risk of combustion was reduced to zero. All customer requirements were met and the project was completed on schedule and without any safety or environmental incidents.

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