CASE HISTORY

80% reduction in outage time for complete elimination of H₂S and reduction in ammonia in an SRU Sour Water Tank when utilizing chemical decontamination.

Results Achieved

- Complete elimination of hydrogen sulfide and reduction of ammonia to acceptable levels
- Over 80% reduction in outage time
- No personnel exposure to hazardous materials
- No additional disposal expense

A large petroleum refinery in New Jersey used our hydrogen sulfide abatement product, FQE® H₂S Scavenger, and ammonia control product FQE Ammonia Odor to decontaminate a sour water tank in their sulfur recovery unit (SRU) containing 1,438 m³ (380,000 gallons) of sour water.

The initial H₂S readings from the sour water vessel exceeded 80,000 ppm (8.0%). A 20% FQE H₂S Scavenger mixture in water was prepared and pumped into the tank. The tank contents were circulated for 48 hours to ensure good contact was made between the vessel water and the FQE H₂S Scavenger. The tank contents were sampled every two hours with the H₂S being reported at 0 ppm after 32 hours. Prior to the hydrogen sulfide treatment, the vessel was treated with FQE Ammonia Odor for ammonia control. The required amount of FQE Ammonia Odor was pumped into the tank and the vessel contents were circulated for 12 hours until the ammonia level was below the acceptable 10 ppm.

The chemical circulation was performed at an ambient temperature and was applied from bottom to top through a 3D nozzle mounted through the vessel’s top manway access. The spray nozzle was used to eliminate the high H₂S and ammonia concentrations present in the vessel’s head space. Upon completion, the treated water was processed through the wastewater treatment plant without delays.

Typically, this process is conducted by the slow addition of a strong oxidizing liquid over a 7-10 day period of time, resulting in extra time and additional disposal considerations being required.
Rail Car Chemical Decontamination

Results Achieved

over 20 times, saving thousands of dollars in manpower and dissolved the asphaltenes and

Chemicals Utilized

Minimal sludge deposits were

LEL-V 2S

A service company utilized FQE® Solvent-ME, FQE® Clean Road, and FQE® LEL-V for a rail car cleaning application at petroleum refinery located in Delaware. The refiner was looking to conduct a change of service on dark oil (crude oil) to clear fluid (ethanol) service. The cars needed to be fully de-oiled to eliminate the presence of asphaltene deposits at a rate of around 1 car every 4-5 days and was looking for a more efficient alternative to meet their tight timelines.

To ensure that all the cars were truly de-oiled; down to the porous cavities in the steel surface, FQE Cleaning was applied to remove LEL and H2S respectively. The whole operation was done in record time.

Chemical Decontamination of a Primary Separation Settler

Typical Separation Settler Diagram

SOLVENT
FROTH & WATER
Dissolved the asphaltenes and

FEED
Dissolved the asphaltenes and

Dissolved the asphaltenes and

Minimal sludge deposits were

50% reduction in down time

WATER, SOLIDS
UNDERFLOW
DEFLECTOR
VAPOUR
PLATE
SPACE
LIP
FEEDWELL
60˚
Clean Cone Bottom

3 Stripper Towers

Coker Fractionator

Primary Separation Settler

Pentane Absorber

Chemicals Utilized

H

2S reduced to 0

Process saved 12-24 hours of

Outage time; manpower entry relocating the injection point and indicating communication at

Prior to chemical application, it was confirmed that there was a lack of fluid in the product in the vessel. The vessel had a top cylindrical section with an internal diameter of 15.2 meters, and a conical bottom section with a 60° angle. The settler was enclosed by a hemispherical roof to contain the vapors released from the froth and solvent and a conical bottom section with a 60° angle. The settler was enclosed by a hemispherical roof to contain the vapors released from the froth and solvent. The product in the vessel was made up of mostly solvent (C5/C6), and bitumen.

An oil refinery in Wyoming running heavy Canadian crude utilized FQE® Solvent-H, FQE® LEL-V, and FQE® H2S to clean a

Cleaning application, a new process was chosen; the FQE

applications, a new process was chosen; the FQE

was oil-free.

was oil-free.

was oil-free.

was oil-free.

was oil-free.

was oil-free.

Three Stripper Towers

Coker Fractionator

Pentane Absorber

Chemical Decontamination and CASE HISTORY

Improve efficiency and financial performance