

# PROJECT NAME

HYDROGEN SULFIDE REMOVAL FROM A GAS STREAM UTILIZING BIOLOGICAL DESULPHURIZATION

## PROJECT HIGHLIGHTS

- Detailed engineering utilizing a European process package
- Environmental project tied to existing refinery
- Gemini's scope of work was to evaluate a process problem, provide recommendations and implement the solution through detailed engineering

## PROJECT DESCRIPTION

Gemini was initially contracted by Alberta Envirofuels (AEF) to undertake a wastewater management study to evaluate alternative options to deep disposal of sulfidic spent chemical waste derived from a caustic scrubber designed to remove H<sub>2</sub>S from a hydrogen based sour gas stream. The study was initiated by AEF in order to overcome the operational and cost related problem of high pH in disposal at a third party disposal facility. Recent changes in both wastewater composition and disposal practices have greatly increased costs making third party disposal no longer practical. The Paques process selected as the recommended solutions significantly reduced costs and provided environmental benefits.

## SCOPE OF WORK

As part of this study, Gemini investigated all possible options for KOH wastewater disposal. Simultaneously, Gemini also evaluated options for sour gas treatment to eliminate KOH wastewater generation. Based on Gemini's recommendations, AEF elected to proceed with the option to eliminate KOH wastewater generation by employing biological desulphurization. Following this Gemini undertook a Design Basis Memorandum to develop a capital cost estimate complete with schedule and scope of work on behalf of AEF. The vendor chosen by AEF for supply of biological desulphurization package was PAQUES. Gemini was then contracted to integrate the above technology package into AEF's process. An important responsibility to Gemini was to ensure the engineering documentation was in accordance to presentation standards required by AEF for their facility.

## RELEVANT SKILLS EMPLOYED

Gemini structured its project team to comprise of personnel with design, fabrication and construction expertise as a way of providing early in the project value added engineering services to AEF. The approach was a method by which Gemini sought to differentiate itself from its competition. Employing an integrated team early in the project can provide significant savings to the client by way of cost, schedule and time. Gemini's objective was to provide additional cost savings by employing its Field Solutions group to install the process.

