

Styrene Plant Dehydro Effluent Reactor Treatment with Neutralizing Amine

Background

The dehydro reactor effluent in a styrene plant contains process products as well as carbon dioxide and organic acids. The process condensate pH is typically less than 5.5. If left untreated, this can be very corrosive. The primary corrosion species is CO_2 , which forms carbonic acid when it condenses.

Solution

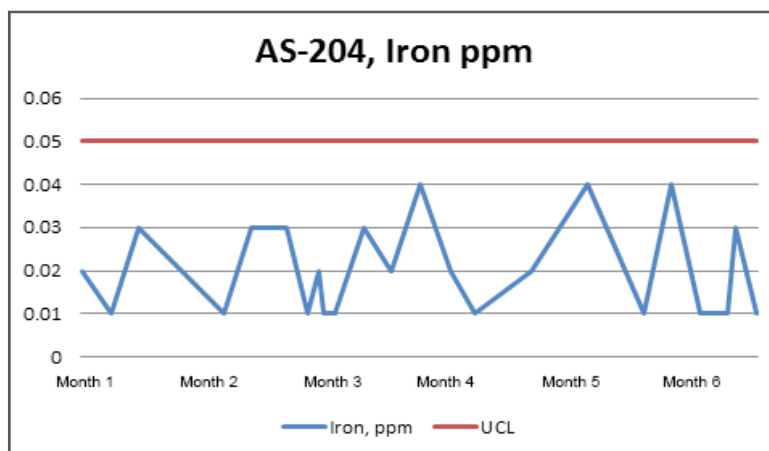
BL1516, a neutralizing amine treatment, was injected into the process gas stream to help mitigate corrosion from carbonic acid in the dehydro condenser. Three atomizing spray nozzles were utilized in this application to ensure optimum injection and dispersion of the BL1516.

Results

Vigorous sampling was performed to monitor pH, iron, manganese, and corrosion rates. Based on this data analysis, the optimum process condensate pH target in the steam hydrocarbon stripper required



to provide optimum corrosion inhibition was determined to be 8.3–9.2. Operating the system using this sampling regime and pH control helped the plant realize improved corrosion rates in the dehydro condenser, and extend the life of the condenser between turnarounds.



Results are examples only. They are not guaranteed. Actual results may vary.

