

Refinery Storage Tank Water

A refinery was storing wastewater in several tanks and needed to meet the city discharge limits before they were allowed to dispose of the water. The problem was with soluble sulfides (1,000 ppm in the water) as the discharge was 0.5 ppm. Integrated Engineers was contacted to see if they could create a treatment process to reduce the sulfides to discharge limits. Several large water treatment companies had failed to meet the stringent limits.

The samples were treated with both a biological approach using pure oxygen and a biomass as well as straight ozonation over a 24-hour period. The sample was also tested for biodegradation capability using a respirometer that measures oxygen uptake of a biomass versus time. The oxygen uptake rate (OUR) was measured at 140 mg/L/hr, which indicates a quick biokinetics rate.

It appears that the easiest method of treatment is to preozonate followed by using Floccin-J to remove the residual solids (see the table and picture below).

Untreated	4,760 ppm
Ozonated	1,620 ppm
Ozonated & Floccin-J	730 ppm
Biomass treated	2,310 ppm

