

Concrete Manufacturing Operation Meets Permit Requirements With PH Control System

A ready-mix concrete manufacturing operation needed to neutralize high pH process water resulting from rinsing of the interiors of concrete delivery trucks and rinsing of the exteriors following the loading process. The purpose was to be able to discharge excess process water and or storm water that drained into the process water detention basins. The treated water had to meet the following limits: The pH had to be under 9.0 and the total suspended solids had to be less than 30 PPM to comply with their discharge permit.



The client installed a Model 5000S from Fortrans with a modular in-line carbon dioxide feed system at their 25,000 gallon capacity sedimentation basin. The system fed carbon dioxide gas at 25 Liters per minute through 2" piping that was supplied with process water via a submersible pump and returned treated water to the sedimentation basin at the rate of 45 GPM or 64,500 GPD. After approximately 3 hours of circulating and treating the water, the pH of all of the water in the basin was 7.5. The TSS or total suspended solids was an average of 14 Mg/L after 3 hours settling time.

The water was circulated while the plant was in operation and shut off at night. While in operation, the system automatically detected a rise in pH over 8.25 and immediately began the carbon dioxide feed until the total basin pH was back to 7.5. The client was able to recycle treated water for rinsing trucks and supply recycled water into the concrete batching operation (non DOT mixes only). Treated water could also be used for irrigation of aggregate for easier batching operations. The treated water was also permitted to be discharged to the environment since it easily met the permit requirements as outlined above.