

Chlor/Dechlor...Automated logic knows when Less is More

ISSUE: NYS Department of Environmental Conservation modified the City of Long Beach's Wastewater Treatment Plant State Pollutant Discharge Elimination System (SPDES) permit to reduce residual chlorine from 2.0 mg/L to ≤ 0.5 mg/L. A unique design was required to implement a chlorination/ dechlorination process.

SOLUTION: This innovative design includes a chlorine probe that continuously measures residual chlorine concentrations providing feedback to chemical feed pumps equipped with variable frequency drives and programmable logic controllers that administer the proper sodium bisulfite dosing rate to achieve the required SPDES permit limit. This innovative system eliminates manual control of sodium bisulfite dosing, minimizing excessive chemical use, thus protecting the environment while complying with environmental regulations.

Proper mixing of sodium bisulfite is achieved utilizing recirculation pumps and diffusers. Sodium bisulfite is injected into recirculated Plant effluent and discharged through diffusers.

RESULT: Re-purposing existing infrastructure and designing a new prefabricated building for the dechlorination process significantly reduced capital costs and resulted in a shorter construction schedule. Discharge of dechlorinated effluent has benefited the environment by reducing residual chlorine to Reynolds Channel and reducing impacts to aquatic life in the receiving waters.

Effluent Dechlorination Facility

1

Effluent chlorine probe measures residual chlorine concentrations

2

Chemical feed pumps administer proper sodium bisulfite dosing based on chlorine probe feedback.

3

Recirculation pumps provide sodium bisulfite addition and proper mixing for dechlorination process

4

Baffle walls and diffusers create the required mixing and retention zones

Reynolds Channel

Effluent Dechlorination
at Long Beach WWTP
Long Beach, NY
City of Long Beach
Long Beach, NY

