Neptune Beach Wastewater Treatment Plant

Neptune Beach, FL.

Performance History and Discussion

The City of Neptune Beach chose biological dosing as solution to improve effluent quality and reduce operating expenses at their WWTP. By providing biological dosing a high concentration of live heterotrophic bacteria was added into the collections system, transforming it into a pretreatment reactor. As a result, the incoming pollutant load is lower and the effectiveness of the treatment process is enhanced.

Over the first nine months of treatment the average daily effluent CBOD (Carbonaceous Biochemical Oxygen Demand) dropped by nearly 50%, from 17/lbs/day to 9 lbs/day. In addition on average daily effluent nitrogen went from 126 lbs/day to 86 lbs/day, a reduction of over 30% when compared to baseline conditions.

The Neptune Beach WWTP has also lowered air delivery to the aerobic digesters by 60%, saving the plant energy expenses to run the digester blowers. This is possible because the impact of dosing when operating effectively under aerobic and anaerobic (using fermentation) conditions to deliver superior solids destruction without amounts of free oxygen.

The WWTP is currently undergoing a retrofit to convert the process from its current configuration (contract stabilization) ton an integrated fixed film activated sludge (IFAS) system. During the retrofit the plant will be limited to operating just half of the available biological processing capacity. Dosing treatment during the retrofit period will ensure that the plant maintains acceptable operations even with reduced capacity.

Present Conditions

The City of Neptune Beach was awarded a grant from the Florida Energy and Climate Commission to use the dosing technology to improve the efficiency of the WWTP by reducing aeration energy consumption, sludge handling and hauling and FOG – related service calls.

Project Profile

Summary at a Glance

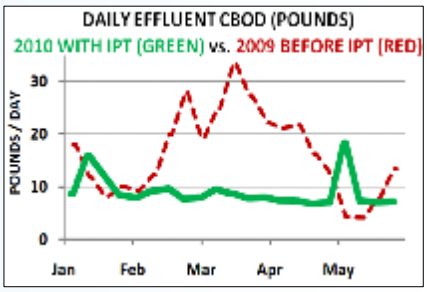
Project Installed: November 2012
Plant Size 5.7 MGD

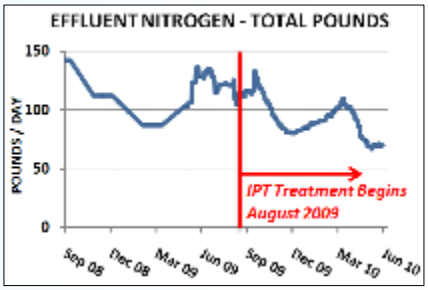
Service Objectives:

- Improve Effluent Water Quality
- Reduce Effluent Total Nitrogen
- Improve Energy Efficiency
- Control Hydrogen Sulfide (H2S) Odour and Corrosion

Performance Summary:

- 46% Reduction on Effluent CBOD
- 32% Reduction in Effluent Total Nitrogen





AFFORDABLE EFFICIENCY

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