



Crown Point Wastewater Treatment Plant Crown Point, IN

Project Summary

Due to capacity issues, the City of Crown Point was forced to either start planning for expensive capital expansions of the facility or to investigate alternative technologies that would increase capacity.

In 2007 the City chose biological dosing technology to improve the treatment capacity of the plant without incurring capital improvements. The goal was to improve the efficiency of the plant, reduce sludge production, improve effluent water quality and control odors at the plant.

Biological dosing treatment was initiated in 2007; as a result the amount of sludge produced per pound of influent TSS and influent BOD has gone down by 36% and 41% respectively. This improvement in efficiency has resulted in a 27% reduction in the total sludge hauled this year, a reduction that saves the City nearly \$19,000 and no longer has a need to expand its facilities. In the 3 years since dosing began, the WWTP has produced 3,120 fewer tons of biosolids compared to operation before biological treatment. Additionally, the plant has been operating with 50% of the aeration energy previously required for effective biological treatment while maintaining the extremely high average effluent water quality of 1.4 mg/L BOD, 1.5 mg/L TSS and less than 1 mg/L ammonia.



Present conditions.

The following bullet points summarize performance at the Crown Point WWTP for the months of August 2009 through July 2010. (The baseline for comparison is plant operation data during the 12 months prior to August 2007, the year before biological dosing treatment began):

- \$153,000 in annual savings for sludge disposal, aeration energy, FOG control and chemical usage,
- \$12,000 in annual savings from lowering the return activated sludge (RAS) pumping rate,
- The improvement in effluent TSS now allows the WWTP to utilize secondary effluent for plant non-potable utility water, saving 50,000 gallons each day of City water, or \$61,000 per year.
- Collection system has been maintained in good condition, no odor complaints logged.
- Capital expansion of sludge storage building (\$400,000) and digester tank (\$1.1 million) is still postponed. In October, 2010 the City of Crown Point extended its existing agreement with biological dosing technology by issuing a three year fixed contract valued at over \$0.5 Million. Based on current performance, the City will save over \$675,000 in operating expenses over the course of the contract by using collection system as an active part of the treatment process and increasing the efficiency of their existing assets.



Project Profile Summary at a Glance

Project Installed: August 2007

Plant Size: 5.2 MGD

Service Objectives:

- Reduce Sludge Production
- Improve Energy Efficiency of Wastewater Treatment
- Reduce Chemical Usage
- Increase Capacity

Performance Summary:

- 50% Aeration Energy Reduction
- 20% Reduction RAS Pumping
- 27% Reduced Sludge Production
- 50% Reduced FeCl Consumption
- 30% Reduction in Effluent TSS

Financial Payback: Over \$225,000

Crown Point's Savings:

- \$112,000 Aeration Energy
- \$19,000 Sludge Hauling
- \$12,000 RAS Pumping Energy
- \$61,000 City Water Usage
- \$14,000 FOG Control
- \$7,000+ Chemical Usage
- \$1.5M Indefinite CAPEX Deferral for New Digester Tank and Sludge Storage

Biological Dosing has, "improved operation of nearly all aspects of the Crown Point WWTP and the payback even got the Mayor's attention."

Chris Previs, WWTP Manager

AFFORDABLE EFFICIENCY

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