



Enhanced Ammonia Removal

Improved municipal wastewater nitrification using MICROCAT® - XNC Nitrifiers BSE 090



Problem

Due to adverse conditions including mixed liquor pH and alkalinity and reduced temperatures from the oncoming winter, nitrification (ammonia oxidation) in this medium-size, 5.0 MGD (18,900 m³/day) municipal wastewater plant was non-existent. Effluent ammonia levels equaled influent ammonia levels. The microbial nitrifiers had washed out of the system.

Product Applied

MICROCAT®-XNC Ammonia Oxidizing Bioformula

Objective

The treatment objective was to improve nitrification in the system. Ammonia was building up due to an inability to maintain a nitrifier population due to the plant being oversized and the pH and alkalinity being below ideal for nitrification. Typical influent ammonia concentration is approximately 35 mg/L.

Treatment System

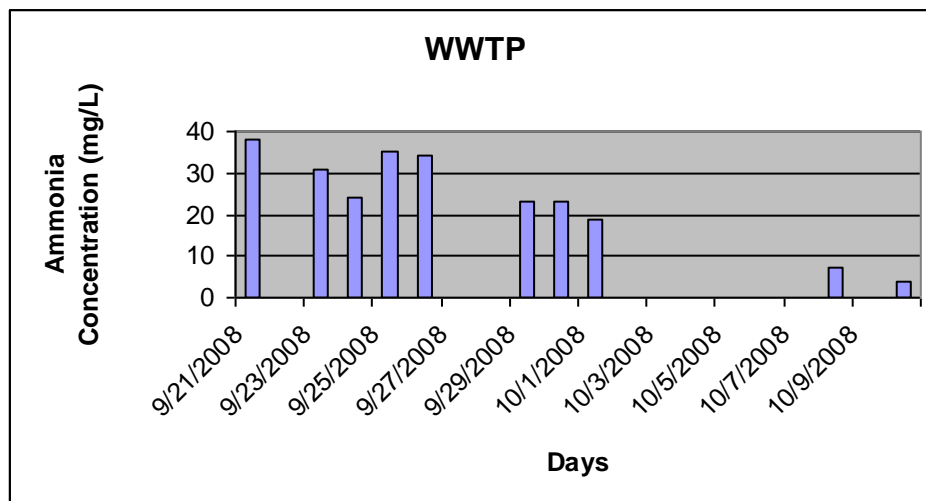
The wastewater treatment system consists of one primary clarifier, a one million gallon aeration basin and two secondary clarifiers.

Application Program

MICROCAT-XNC Bioformula was added to the aeration basin inlet at a dosage recommendation based on the daily flow. Ammonia, nitrate and other key parameters are monitored (water temperature, pH, BOD, and alkalinity) to make sure the conditions were conducive to nitrification.

Results

Ammonia reduction began slowly (probably due to lower than optimal pH and Alkalinity), but achieved the objective of reducing ammonia below permit levels (15 mg/L) within 18 days. Nitrification was achieved with the help of **MICROCAT-XNC** reducing the ammonia concentration below permitted levels and avoiding permit violations during the winter.



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