



Bioscience, Inc.
Environmental Products and Services

ISO 9001:2008 Certified

Nitrification Enhancement in an Aerated Lagoon Municipal Treatment Plant

Ammonia Oxidation improvement using MICROCAT® - XNC Nitrifiers - Bse 088



Problem

Ammonia was building up in the first lagoon of four lagoons in series and nitrate and nitrite were increasing in the other downstream lagoons due to loss of nitrification because of colder weather conditions over the winter.

Product Applied

MICROCAT®-XNC Ammonia Oxidizing Bioformula



Treatment System

Wastewater Flow: **1.5 MGD (5681 m³/day)**

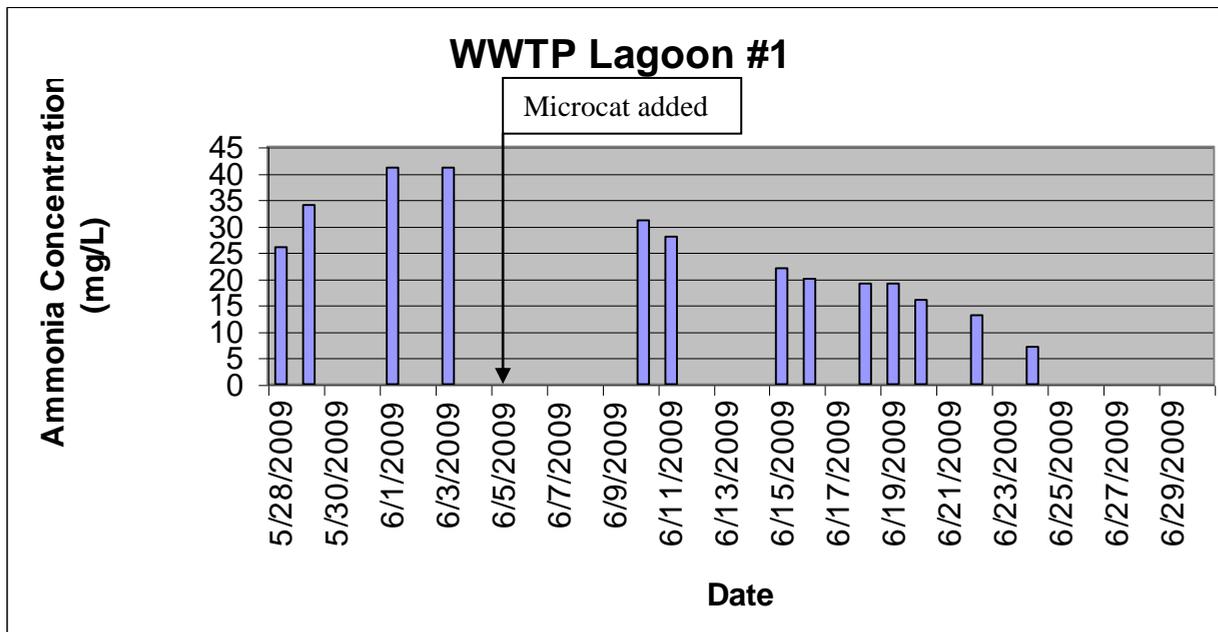
The wastewater treatment system consists of 4 lagoons in series. The first lagoon is approximately 15 million gallons (56,818 cubic meters) and the second, third and fourth are all about 8 million gallons (30,303 cubic meters) each. The first and fourth ponds are aerated, while the second and third are not.

Program

The treatment objective was to improve nitrification in the system at the onset of the summer months when the discharge permit levels are lowered. **MICROCAT-XNC** bioformula was added to the first lagoon at a dosage based on the daily flow. Ammonia, nitrate and other key parameters were 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 water temperature of 17 degrees C), but achieved the objective of reducing ammonia below desired levels within 27 days. Nitrification was achieved with the help of **MICROCAT-XNC** reducing the ammonia concentration below permitted levels and avoiding permit violations.



MICROCAT is a registered trademark of Bioscience, Inc.