


## Bio-Additive Aids Nitrification, Treatment Plant Study Shows



**W**ith cold weather on the way, many wastewater treatment plant operators are beginning to worry about effective nitrification. Lower temperatures reduce the activity of many nitrifying bacteria, resulting in potential permit violations for discharge of ammonia-nitrogen. Two new case studies indicate the effectiveness of bioaugmentation to improve nitrification.

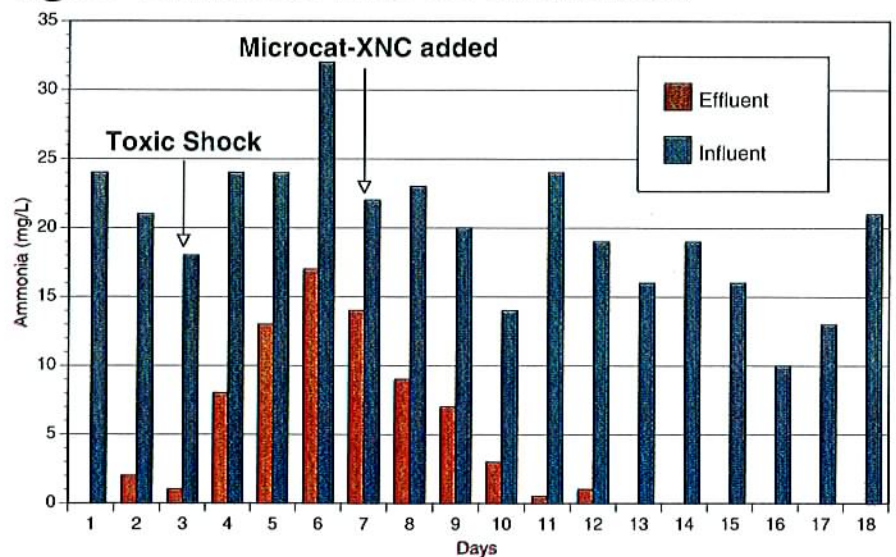
In an activated sludge municipal sewage treatment plant with a flow of 5 mgd, a toxic shock virtually eliminated nitrifying bacteria, leading to a potential permit violation. Normal discharge levels of ammonia-nitrogen were less than 3 mg/L, but they soared to 16 mg/L after the shock. Plant operators added Microcat-XNC nitrifying bioformula, a concentrated formulation of microorganisms selected for nitrifying capacity, at a rate of 30 pounds per day for the first two days and 20 pounds per day (in each aeration basin) on days three through five. At the end of the third day, ammonia-nitrogen levels had fall-

en to below 3 mg/L. By the fifth day, levels were reduced to 0.1 mg/L. (See Figure 1.)

In a separate industrial application in a 1.5 mgd aerated lagoon treatment plant at a petroleum refinery, use of the same formulation achieved nitrification within a hydraulic residence time of five days without recycling of biosolids. Lab studies had shown nitrate production in the augmented wastewater sample to 14 mg/L, while in the control it had measured less than 0.25 mg/L. 

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**Figure 1: Microcat-XNC for Nitrification**



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