



## **Case History**

### **Magnesium Hydroxide for Biological Treatment of Wastewater**

#### **Activated Sludge and Nitrification Processes at a Chicken Processing Plant**

A Midwestern Chicken processing plant generates approximately 2.0 million gallons of process wastewater per day high in BOD, Oil & Grease and Ammonia. Wastewater is processed utilizing both primary and secondary treatment. Secondary treatment is a two stage activated sludge system utilizing an anoxic zone as the first stage. Single stage nitrification is utilized to convert ammonia to nitrates. Caustic Soda was historically used to control pH and maintain sufficient alkalinity in the system for nitrification. The wastewater is clarified in a gravity clarifier prior to discharge directly to a river.

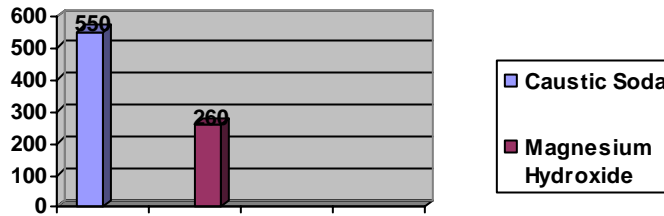
The plant had been using 50% Caustic Soda for an alkalinity source and pH control for years. The plant was converted to Aries Chemical Magnesium Hydroxide which provided the following benefits to their wastewater treatment operation:

- Significantly reduced chemical cost for alkalinity and pH control. Only 260 gallons per day of Aries Chemical's Magnesium Hydroxide was required to replace 550 gallons per day of 50% caustic soda.
- Improved pH control and stability throughout plant.
- Improved solids settling in Secondary Clarifier.
- Improved chemical handling safety. Aries Chemical's Magnesium Hydroxide is a nonhazardous product as compared to Caustic Soda which is a hazardous chemical. Caustic Soda requires special personnel safety handling equipment. Moreover, Caustic Soda requires Sara 313 reporting.

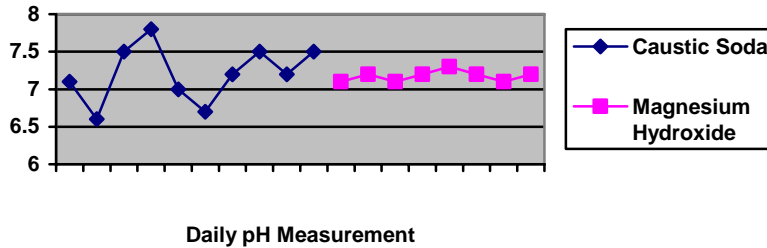
# Aries Chemical Magnesium Hydroxide versus Caustic Soda

## Operating Data

DAILY ALKALI USAGE (gallons)



Activated Sludge Basin pH Variation



For more information on Magnesium Hydroxide call Aries Chemical.

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