



CASE STUDY

New Jersey Wastewater Treatment Plant Improves Compliance, Performance and Economics by Pivoting to DelPAC 1525

Background

In 2002, the NJDEP requested that a 7.5 MGD facility look into phosphorus reduction methods to meet pending discharge limits. Within one year, the first phase of a low cost liquid aluminum sulfate (alum) pumping facility was completed. The plant experimented with multiple injection points and various flow rates to evaluate reduction capabilities. Overall, the results showed about a 50% reduction in phosphorus. Construction of phase two was completed in 2005, adding additional storage tanks and metering pumps. Although not yet required to meet a set discharge limit, the plant voluntarily continued to feed liquid alum for phosphorus reduction. It wasn't until 2008, when NJDEP requested the plant's DPCC (Discharge Prevention Contaminant and Countermeasure) Plan that concerns were raised with feeding liquid alum. The DPCC regulation reclassified facilities based on hazardous chemical storage capacity. If a facility had over 20,000 gallons of potential storage capacity they faced increased regulatory requirements. Liquid aluminum sulfate along with caustic soda, sodium hypochlorite and sodium bisulfite put the plant at near maximum capacity.

The DelPAC Solution

USALCO technical representatives had frequently visited the plant over the years and were very familiar with the treatment process and challenges that management faced. As a result of the pending regulation, the plant reached out to USALCO for assistance. USALCO began to evaluate various coagulants from its extensive product line in order to provide the plant with the best solution. On site bench testing was conducted to compare

aluminum sulfate versus other aluminum based coagulants. Repeated testing demonstrated that DelPAC 1525 was the product of choice. The superintendent agreed to a full scale plant trial beginning in May 2008 and due to its immediate success switched to DP1525 permanently. The following are a few of the benefits the plant realized due to the change:

- DPCC compliance
- Treatment cost savings of \$48,000/yr.
- Elimination of caustic soda due to lower alkalinity consumption w/DP1525 versus alum
- Enhanced settling in clarifiers led to reduced solids loading of pressure filters (reduced backwashing = water/energy savings)
- Improved UV efficiency since dosage is calculated on pressure filter effluent.

Future Compliance

The plant has continued to voluntarily treat for phosphorus reduction with the DelPAC 1525 to this day. The NJDEP has issued an effluent discharge limit for the plant of 0.76mg/l, which will go into effect in 2018. The plant superintendent recently commented *"We are very confident with our years of experience using DelPAC 1525 that we will meet the new limit, providing a high quality effluent."*

