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SUCCESS STORIES

Nutrient Analysis System Keeps Wastewater Plant in Control



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Nutrient Analysis System Keeps Wastewater Plant in Control

By Craig Mandli

Problem

The Denver, Colo., Metro Wastewater Reclamation District wanted near real-time nutrient analysis for a very challenging headworks wastewater aeration process, consisting of a combination of centrate and RAS. The centrate and RAS reaeration basin (CaRRB) effluent is added to primary effluent prior to mainstream aeration.

Solution

ChemScan, Inc. supplied a centralized nutrient analysis system for CaRRB improvements in 2009, following a two year period of development, testing, project design and procurement. The system uses a single ChemScan UV-6101 Analyzer and four in-line cyclic filters to monitor Nitrate and Ammonia from four sample locations within the plant. One of the major benefits of this process is to verify the reduction of very high ammonia generated in the anaerobically digested biosolids prior to mainstream aeration. The project required ChemScan, Inc. to develop new calibration methods for ammonia and nitrate, allowing much improved upper detection limits, new types of sample filters that could survive without frequent cleaning in the CaRRB and Primary Effluent samples, better automatic cleaning methods for the in-line cyclic filters, and addition of ortho-Phosphate analysis at two sample locations in 2010.

Result

The system is now approaching 5 years of reliable operation at the plant and generating real-time nutrient data for process operation and control.



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