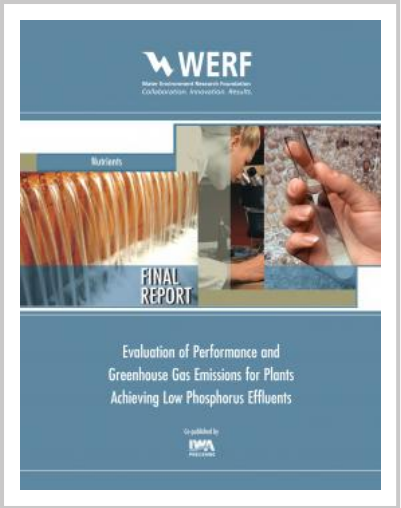
Evaluation of Performance and Greenhouse Gas Emissions for Plants Achieving Low Phosphorus Effluents



This project was conducted under the WERF Nutrient Challenge program and included evaluation of operational practices and performance results for wastewater treatment plants designed to meet very low effluent total phosphorus (TP) concentrations. As stringent phosphorus limits of 0.1 mg/L and lower are becoming more common, there is a need to better understand factors impacting the sustainability of operating to meet these limits. This effort focuses on maximizing what can be learned from existing facilities to help utilities operate more sustainably while achieving the necessary level of performance.

Eleven plants participated in this study. A number of these facilities had participated in earlier studies identifying phosphorus removal technologies and performance achieved and evaluating the reliability for achieving the needed effluent quality. Building upon this earlier work, each plant was assessed for its level of performance and operating practices associated with meeting low phosphorus limits. A carbon footprint calculation was developed to provide a comparison between facilities for greenhouse gas emissions associated with phosphorus removal operation. Several facilities also offered demonstration testing information and operating data to support an assessment of key issues that impact sustainable operation.

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