
CASE STUDY: Union County Public Works

Location:	Monroe, N.C. (Union County)
Industry:	Public Works Facility (SIC code 4900)
Pollution Prevention Application:	Wastewater Reclamation and Industrial Pretreatment
Waste Reduction:	Not Calculated
Annual Savings:	Not Calculated
Payback Period:	Not Calculated
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Background

Encompassing 640 square miles, Union County is located in south central North Carolina, east of Mecklenburg County. The county's close proximity to Charlotte has made it one of the fastest growing counties in North Carolina, with a population of 110,000 (July 1, 1998). Union County's Public Works Department provides potable water services, wastewater treatment, household hazardous waste disposal, and solid waste and recycling services for the county.

Waste Reduction Activities

Union County focuses waste reduction efforts in two major areas: wastewater reclamation and industrial pretreatment. To minimize discharges to the local watershed, the county placed two wastewater treatment plants (WWTP) online in 1997. The first facility, Olde Sycamore WWTP, went online that spring. The facility is a package plant that provides extended aeration, secondary clarification, tertiary filtration and ultraviolet disinfection to a golf course community of approximately 500 homes. After disinfection, all effluent is transferred to a lined holding pond for ultimate use as irrigation water for the golf course. Although the county operates the WWTP, all costs associated with its development were paid by the golf course developer.

The second facility, 12 Mile Creek WWTP, was placed in operation in December 1997 and handles a larger flow of wastewater than the Olde Sycamore facility. Similar to the Olde Sycamore facility, the 12 Mile Creek facility is a high-tech treatment plant that provides extended aeration, secondary clarification, tertiary filtration and ultraviolet disinfection to a golf course community of approximately 500 homes. Upon disinfection, the effluent is ready for beneficial reuse. The 12 Mile Creek facility cost \$20 million and was financed with revenue bonds, eliminating the need to increase local taxes.

Although Union County does not have many industrial clients, the county developed an industrial pretreatment program to help minimize releases to the local wastewater treatment system. One local industry was discharging 10,000 gallons per day to the Crooked Creek Water Reclamation facility. This industry's effluent typically had a pH below 5.0 and a biological oxygen demand greater than 1,000 milligrams per liter. The public works staff provided testing, analysis and recommendations to this local industry, resulting in a change in the industry's practices. The company now diverts the effluent to holding tanks that are batch treated with flocculant, which allows the water to be reused in-house.