2009-2011 INDIANA ENERGY MANAGEMENT PILOT

City of Bloomington Utilities Blucher Poole Wastewater Treatment Plant

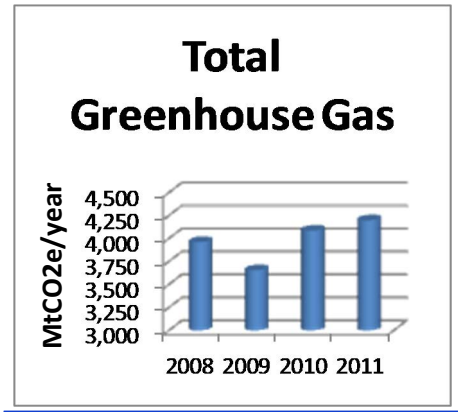
Who we are

The City of Bloomington Utilities Blucher Poole Wastewater Treatment Plant (CBU Blucher Poole) is a complete-mix activated sludge facility with ultraviolet light disinfection (a chlorine system is available for back-up), aerobic sludge digestion, sludge storage tanks, and sludge thickening/dewatering via gravity belt thickener. It treats wastewater generated in the northern part of the Bloomington and serves a population of 8,605. Built in 1968, CBU Blucher Poole was upgraded in 1998. The collection system is 100 percent sanitary. In 2011, CBU Blucher Poole treated an average flow of 4.62 million gallons per day (MGD). The plant has a design capacity of 6 MGD and a peak hydraulic capacity of 12 MGD. It employs 13 staff.

Natural Gas Usage

2008: 36,559 Therms
2009: 34,960 Therms
2010: 33,622 Therms
2011:25,040 Therms

Greenhouse gas (GHG) avoided: N/A. Metric tons CO2 equivalent increase (2008 baseline compared to 2011).*



Project Success Story

CBU Blucher Poole improved process operation and reduced energy consumption by better blower control. Prior to November, 2011, operators determined aeration needs and set blowers accordingly. It was determined that this practice often resulted in more aeration than needed. Therefore, in November 2011, the plant superintendent implemented a standard operating procedure (SOP) to optimize aeration with the added benefit of keeping dissolved oxygen levels more consistent across shifts.

Adhering to the blower SOP was key factor in reducing 64,921 kilowatt hours electricity when November 2010 is compared to November 2011. This reduction is even more impressive considering that flow in November 2011 was 12.5 MG greater than in November the previous year. Correspondingly, the November 2011 electricity bill was $3,612 less than November 2010.


CBU Blucher Poole Digester

Greenhouse gas emissions avoided are equivalent to


Removing — vehicles from the road for a year

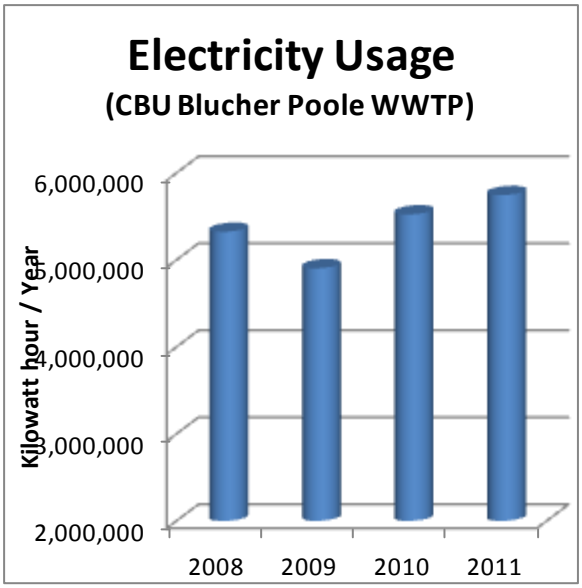

Electricity for — homes for a year

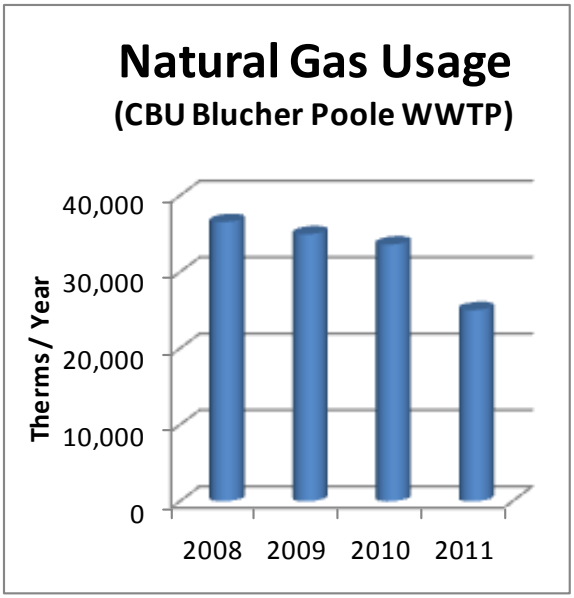

— Railcars of coal


— Barrels of Oil

Green House Gas Equivalencies calculated using USEPA calculator (http://www.epa.gov/cleanenergy/energy-resources/calculator.html

Documented Results





Key Improvements

Goal	Improvement Process	Annual energy saving (kWh)	Implementation cost	Annual cost saving	Simple pay-back, years
Reduce aeration requirement in secondary treatment by increasing BOD removal in primary treatment	A 10% increase in average BOD removal in primary treatment will reduce the use of aeration equip. and reduce energy bills by about 35,000 kWh/month	420,811 kWh	$0	$17,000	0

CBU Blucher Poole Centrifugal Blowers