INTERESTING FACTS

The wastewater liquid treatment process takes approximately 24 hours from start to finish while the solids treatment process exceeds 30 days.

The Water Reclamation Plant cleans the wastewater through physical, biological, and chemical processes that removes over 98% of pollutants before discharging the treated effluent water to the Zumbro River.

Rochester's sewer collection system includes over 500 miles of pipe, 4 pump stations, and multiple sewer siphon systems.

Estimated replacement value of the Water Reclamation Plant is $408,000,000 and the estimated replacement value of the sewer collection system is $240,000,000.

FIRST CLASS CITY ● FIRST CLASS SERVICE

CONTACT US

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Phone:
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Fax: 507-328-2651

Website:
www.rochestermn.gov/wastewater

SERVICES OFFERED

RV Waste Disposal
Septic Hauler Disposal
FOG Disposal
Plant Tours

HOURS

7:30 am to 4:00 pm, Monday - Friday

CITY OF ROCHESTER WATER RECLAMATION PLANT

GUARDIANS OF THE ENVIRONMENT

SUSTAINABILITY FOR THE FUTURE

KEEPING IT CLEAN

PLANT BACKGROUND

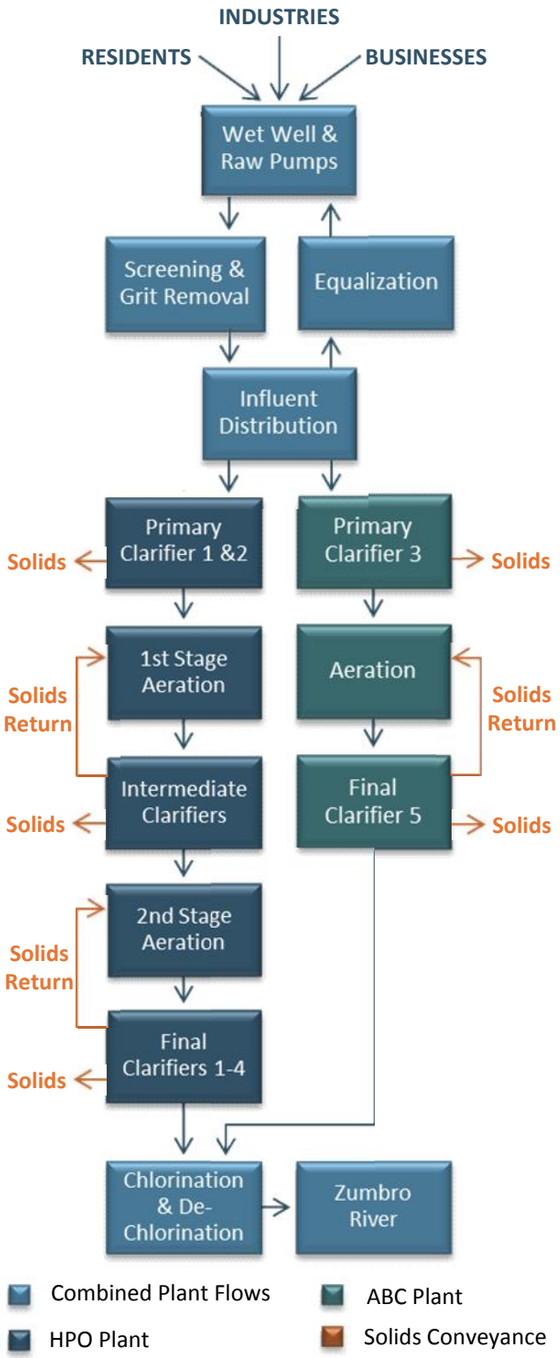
The Rochester Minnesota Water Reclamation Plant treats wastewater for the city's 110,000 plus residents, local industry, and frequent visitors. The original facility was built in 1926 and was one of the first wastewater treatment plants to operate in Minnesota. The facility is continually being enhanced to meet current and future needs of the city's residents and industry. Two treatment technologies are responsible for treatment of wastewater at the Rochester facility, including high purity oxygen and conventional aeration. A treatment plant staff of twenty-nine operate and maintain the facility. Effluent water quality meets regulatory discharge limits set by the Minnesota Pollution Control Agency.

TREATMENT PROCESS DESCRIPTION

The Water Reclamation Plant consists of two parallel treatment processes capable of handling 23.8 million gallons per day (MGD). The High Purity Oxygen Plant (HPO) is rated for 19.1 MGD while the Aeration Basin Complex Plant (ABC) is rated for 4.75 MGD. Once on site, wastewater is pumped and passed through screens and a grit removal process to remove large debris which are sent to the landfill or incinerator for final disposal. Wastewater is then split to either the HPO plant, ABC plant, or equalization basin for storage until treatment capacity is available.

The first treatment process for both plants is primary clarification where solids are settled out and conveyed to solids processing. The wastewater then enters aeration basins where oxygen is added to provide a thriving environment for biological activity to grow and remove pollutants from the wastewater. Wastewater then flows to clarifiers where solids and biological growth are settled out and either sent to solid processing or returned back to the aeration basin process for further reduction of pollutants. The HPO plant also has an additional aeration and clarification process. After final clarification for both plants, flows combine and chlorine is added for disinfection which is followed by de-chlorination before discharging the effluent to the Zumbro River.

TREATMENT PROCESS FLOW DIAGRAM



SOLIDS TREATMENT DESCRIPTION

Solids produced from intermediate and final clarification processes is thickened on gravity belt thickeners, blended with primary solids and primary scum, and anaerobically digested in single stage digesters with a detention time of approximately 25 days. The anaerobically digested biosolids produces methane gas that is captured and used to heat the digesters and produce energy. Approximately 12,000,000 gallons of 6% biosolids are stored onsite then land applied each year under stringent state regulations as free fertilizer for local farmers.

PLANT PROJECTS

(2013 Dollars)

Year	Description	Cost
1926	Original Treatment Plant	$3,600,000
1952	Plant & Pump Station Upgrade	$16,800,000
1980	High Purity Oxygen Plant	$159,100,000
1992	Solids Handling Improvement	$24,300,000
2004	Expansion and Upgrade	$92,500,000
2008	Lift Station No. 4	$7,600,000

ENERGY MANAGEMENT

The Water Reclamation Plant has a multifaceted energy management system that saves over $600,000 annually in energy costs. Three heating and cooling loops are used throughout the plant to recover heat from wastewater processes and provide cooling water for equipment. On average, 220 cubic feet per day of methane gas is produced in the anaerobic digesters and used to fuel boilers for building and process heating or to power one of two 1 megawatt engine generators. Heat is also collected off the engine generators and engine exhaust for utilization throughout the plant.