



City of Brewer's Award Winning Water Pollution Control Facility

BREWER



Department of Environmental Services

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Brewer, ME 04412

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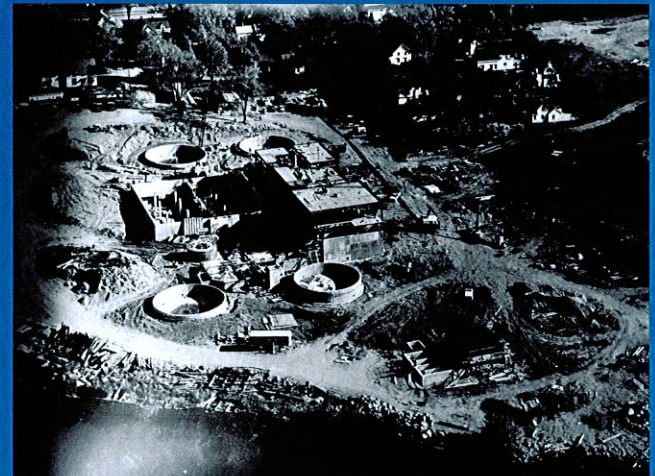


Mission Statement

All flows from Brewer's sewage collection system are conveyed to the City's wastewater treatment plant for processing. The objective of the treatment plant's operation is to convert incoming raw sewage into treated effluent of an acceptable water quality such that it may be discharged into the Penobscot River in compliance with the City's wastewater discharge licenses.

History

Prior to 1975, the Penobscot River had become so contaminated that fish populations were disappearing. The City of Brewer had been contributing to this contamination by discharging raw sewage into the river. Construction of the wastewater treatment plant began in 1973 and became operational in 1975 and was able to treat 3 million gallons per day. Since then, several upgrades have occurred in the years 1991, 1994, 1998, 2010, 2011, and 2012 allowing the plant to treat up to 5.2 million gallons per day at maximum capacity.



Construction 1975

Fast Facts (2017)

Population Served: 9,482 people (source: 2010 census)

Services Area: 3,159 accounts in Brewer and 30 accounts in Orrington (2794 residential, 318 commercial, 47 government)

Treatment Level: Secondary Treatment

Treatment Process: Conventional Activated Sludge

Number of Pump Stations: 14

Length of Public Sewer Lines: around 56 miles (around 295,000 feet)



View of WPCF from Penobscot River

Major Awards Received by the Environmental Department in the Last 20 years

In 1995 from Maine Wastewater Control Association (MWWCA)

1995 Richard B. Goodnow Award in Recognition of Excellence in Operation and Management of a Municipal Wastewater Treatment Facility

In 1997 from Water Environmental Federation (WEF)

1997 George Burke Safety Award for Excellence of its Active and Effective Safety Program and Safety Record

In 2001 from Joint Environmental Training Coordinating Committee (JETCC)

2001 Lee Agger Award for Meritorious Support and Service in Training Environmental Professionals in the State of Maine

In 2001 from the Environmental Protection Agency (EPA)

2001 National Award for Combined Sewer Overflow Control Program Excellence

In 2002 from Maine Wastewater Control Association (MWWCA)

Charles Perry Award for Excellence in Operation and Maintenance of a Wastewater Collection System

In 2007 from Maine Department of Environmental Protection (MDEP)

Steve Ranny Award for Stormwater Program Excellence

In 2014 from Maine Department of Environmental Protection (MDEP)

Certificate of Achievement

In 2015 from the Environmental Protection Agency (EPA)

Regional EPA Operation and Maintenance Excellence Award

In 2017 from Governor LePage and MDEP

Environmental Excellence Award

Permit and Performance Data (2017)

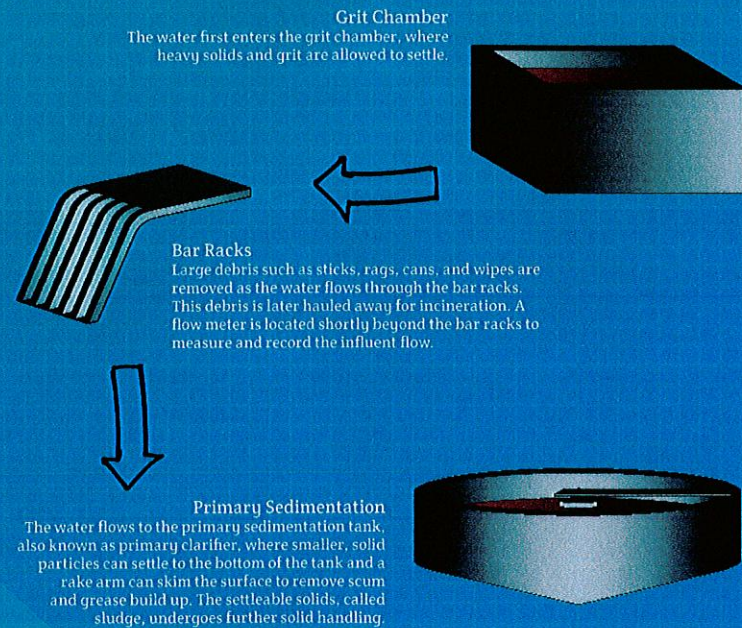
	Percent Removed	Average Effluent	Effluent Regulatory Permit Limits
BOD (Biochemical Oxygen Demand)	97 %	5 ppm	85% Removed 50 ppm Daily Max
TSS (Total Suspended Solids)	98 %	4 ppm	85% Removed 50 ppm Daily Max
E. Coli Bacteria	—	2.66 colonies per 100 mL	426 colonies per 100 mL, Daily Max
Flow	—	1.68 MGD	Design: 5.2 MGD
Sludge Production	—	—	4250 cubic yards per year 2977 tons per year

How it works

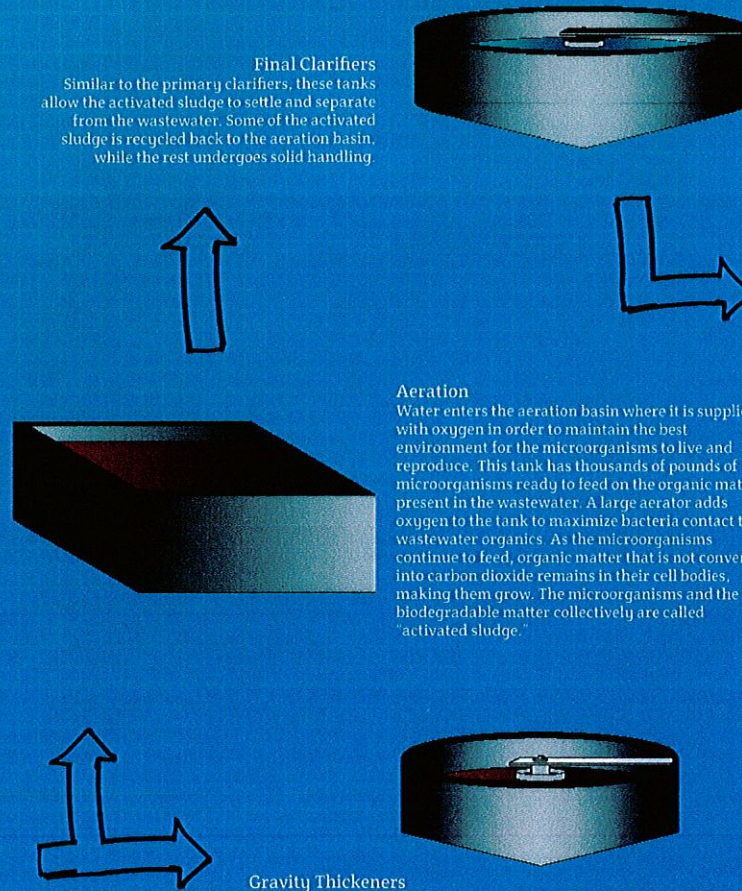
The Brewer wastewater treatment plant is designed to remove incoming pollutants from the raw sewage flow stream and to then convert the pollutants into sludge residuals for further processing. The plant is a secondary level treatment facility, which means the water undergoes two separate processes to remove organic compounds. The first process requires physical methods, such as screening, grit removal, and sedimentation to remove solids while the second process requires a biological method to remove additional impurities.

The most common form of secondary treatment, and the one used in Brewer, is an activated sludge method. This method utilizes microorganisms that feed on organic matter. As the microorganisms grow, they digest the organic matter and convert some of it to carbon dioxide that is released into the atmosphere.

Influent sanitary wastewater flow from Brewer residents and businesses is collected in a 56 mile sewer system and conveyed to the Brewer Water Pollution Control Facility by 14 pump stations located throughout the city, including one in Orrington. Brewer treats wastewater from over 30 accounts in Orrington in addition to the 3,159 accounts in Brewer.



Final Clarifiers
Similar to the primary clarifiers, these tanks allow the activated sludge to settle and separate from the wastewater. Some of the activated sludge is recycled back to the aeration basin, while the rest undergoes solid handling.



Disinfection
Before the wastewater can be discharged, it must be disinfected to prevent any disease causing organisms from entering the river. The Brewer wastewater treatment plant uses chlorine as a disinfection agent. A second flow meter in this location measures and records the effluent flow before being discharged into the Penobscot River.

