

LOCATION

The Edinboro Sewage plant is located at 301 Water St. Ext. Edinboro, PA.

SERVICE POPULATION

The service area for the plant includes the Borough of Edinboro (approximately 7,000 residents), an addition in September 2009 of Washington Township (approximately 600 sewer connections), and Edinboro University of Pennsylvania (approx. 5,000 students).

DESIGN LIMITS

A plant upgrade was initiated in 2008 in order to accept flows from Washington Township. This upgrade increased the plant capacity from 1.2 million gallons per day to 1.8 million gallons per day, with an organic loading design of 3524 pounds per day BOD. The Treatment plant now has three (3) Schreiber Model GR Combined Counter Current Aeration and Final Clairifier units. Each unit is rated at .6 MGD.

PLANT STAFF

The plant staff consists of six employees:

Robert Kennerknecht.....Superintendent
.....Assistn Superintendent
Brian Osborn.....Lead Operator
Melinda Murphy.....GIS/Collection
Debra Hulings.....Operator
.....Assistant Operator
Fred Keller.....Skilled Laborer

TREATMENT PROCESS

Methods of treatment occur in sequence, each process benefiting the following one. There are a total of seven treatment processes. These are Preliminary, Primary, Aeration, Clarification, Chlorination, and Dechlorination. Digestion is used to treat the

excess biosolids produced by the activated sludge process.

PRELIMINARY

Preliminary treatment consists of removing large debris using an automatic Vulcan bar screen, an automatic Duperon Flex Rake barscreen, and two manual by-pass barscreens.

PRIMARY

The Borough of Edinboro and EUP flows then undergo Primary Treatment which slows the incoming wastewater to allow for the settling of grit and the floating of grease which are then removed by a Schreiber automated grit and grease chamber. This process is performed at the Washington Township Angling Road pump station for Washington Township flows.

AERATION

Microorganisms begin to consume the organic material in three large aeration tanks. The aeration is monitored by continuous DO Probes. Two of the aeration tanks are controlled by programmable controllers. The newer third aeration tank is controlled by a continuous Dissolved Oxygen probe and an ORP probe via a LCD operator interface unit. The dissolved oxygen in the aeration zones is controlled automatically by increasing or decreasing the number of blowers required to satisfy the desired aeration range.

CLARIFICATION

Clarification involves the settling of the floc mass produced by the activated sludge process in quiescent clairifiers. Sludge is then returned from the center clarifiers to the influent wetwells, and the cycle of mixing with the influent, aeration, clarification, and return is continued.

CHLORINATION

The treated water flows by gravity into three serpentine chlorination tanks, where disease causing, pathogenic microorganisms are substantially decreased by contact with chlorine for a period of time.

DECHLORINATION

Dechlorination immediately follows chlorination in the treatment process. Sulfur dioxide is mixed with the chlorinated water, instantly decreasing the chlorine. The clean water is then aerated through a series of mini-step waterfalls called a cascade and then discharged to the Conneauttee Creek.

DIGESTION

Excess solids that are produced during the activated sludge process are directed into two large aerated digestion tanks that allow for more organic material to be consumed by microorganisms. The reduced organic solid waste that remains is then pumped either into ten covered drying beds for further drying or to a Centrysis centrifuge for dewatering. These solids are then hauled to a landfill for final disposal.

INFRASTRUCTURE

The Borough of Edinboro collection system consists of eight lift stations connected by approximately 18 miles of gravity line that collects the sanitary wastewater. Force mains account for a portion of the collection system, including one of four inflows to the treatment plant. The Washington Township flow enters the plant through a force main from a Washington Township collection point at their Angling Road pump station. .

PLANT HISTORY

The original Edinboro Wastewater Treatment Plant consisted of an Emhoff Tank, a barscreen, and sand drying beds and was

constructed in 1925. In 1953 the plant was upgraded to a biological trickling filter, barscreen , grit removal , anaerobic digester, and secondary clarifier. The third upgrade was in 1970 with the installation of a Sanitair 1.0 MGD activated sludge treatment plant, to accomplish Suspended Solids and BOD5 reduction. This plant increased the grit removal capacity, and provided additional anaerobic digestors, and a chlorine contact tank.

In 1988, a Schreiber 1.2 MGD extended air system was constructed. This system was installed to comply with Ammonia, Total Suspended Solids and BOD5 reduction mandates. The former treatment tanks were converted to aerated sludge holding tanks. (720,000 gal capacity) The headworks consist of a Vulcan automatic bar screen, and a Schreiber aerated grit and grease removal system.

A dechlorination system was added in 2000 to comply with new effluent limits on Chlorine concentration. This involves injecting sulfur dioxide to accomplish the de-chlorination.

In 2008, a third Schreiber extended air system was constructed to increase the plant's design to 1.8 MGD. This addition was necessary for the acceptance of flows from the Washington Township sanitary sewer system. An additional barscreen was installed in the headworks for the Washington Township flows. The solids handling capacity was increased through the addition of aeration in the sludge silos and the installation of a Centrisys centrifuge for dewatering. A third serpentine chlorination tank was constructed to accommodate the additional Washington Township flows.

FOR MORE INFORMATION

Please contact either of the following:

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THE EDINBORO WASTEWATER TREATMENT FACILITY



Operated by the Borough of Edinboro

**Owner: The Municipal Authority of
The Borough of Edinboro**

**Authority Members : Dan Mulligan
Larry Miles
John Folkrod**

**Chairman.....Sam Austin
Vice Chairman.....T.J Jemetz**

Borough Manager.....Kevin Opple

**Engineer: HRG Engineering
KLH Engineers
Hill Engineers
Deiss/Halmi Engineers**