BOROUGH OF KUTZTOWN

WASTEWATER TREATMENT PLANT

The Borough of Kutztown's Wastewater Treatment Plant, originally constructed in 1939, has undergone many changes and upgrades over the years. A collection system, consisting of approximately thirty-five miles of pipe and four pump stations, feeds the 1.5 MGD (million gallons per day) newly upgraded facility.

The most recent upgrade, completed in 2014, was comprised of the following: a phosphorous removal system, an ultraviolet disinfection system, a chemical feed building with bulk storage tanks, the replacement of settling tank weirs, flood-proofing walls and pumping system, a new 24" outfall with check valve, a 20-3250kw Kohler generator to power the entire facility, the demolition of the original control building and structures, and the construction of a new control building, maintenance shop and garage.

The Borough's Wastewater Treatment Plant and collection system are operated and maintained by three licensed operators and a licensed plant manager. The facility falls under the Pennsylvania Department of Environmental Protection Class B, Subclass #2. The treated effluent is received by the Saucony Creek, tributary to the Maiden Creek, which then enters the Schuylkill River waterway.

EMPLOYEES:

Jarrad Burkert
Wastewater Plant Manager

Michael Miller
Wastewater Crew Leader

Gary Aulenbach
Wastewater Certified Operator

Ezra Border
Wastewater Maintenance Mechanic/
Certified Plant Operator

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PROCESS OVERVIEW

A Raw wastewater enters the facility and is channeled through to **rotating grinders** for break up of debris and shredding of any materials.

Flow is run through a **grit removal system** before being pumped to the primary settling tanks.

B After **screenings removal and primary settling** the waste stream gravity feeds two **trickling filters** for **C** biological treatment and then flows into two **intermediate settling tanks** for further detention time **D** and sludge removal.

E Flow enters the **bio-tower wet well** in which it is then pumped to the **bio-tower** for ammonia nitrogen removal.

F The waste stream then enters the **floc tank chambers** with chemical addition and mixing for phosphorous removal.

G Flow enters the **final settling tanks** for additional detention time and settling. A portion of the flow is recirculated back to the trickling filters so a steady flow is maintained over the filter units.

H Wastewater enters the **ultraviolet disinfection system**.

I The final effluent is then discharged to the **receiving stream**.

All sludge from the intermediate and final settling tanks is wasted back to the head of the plant.

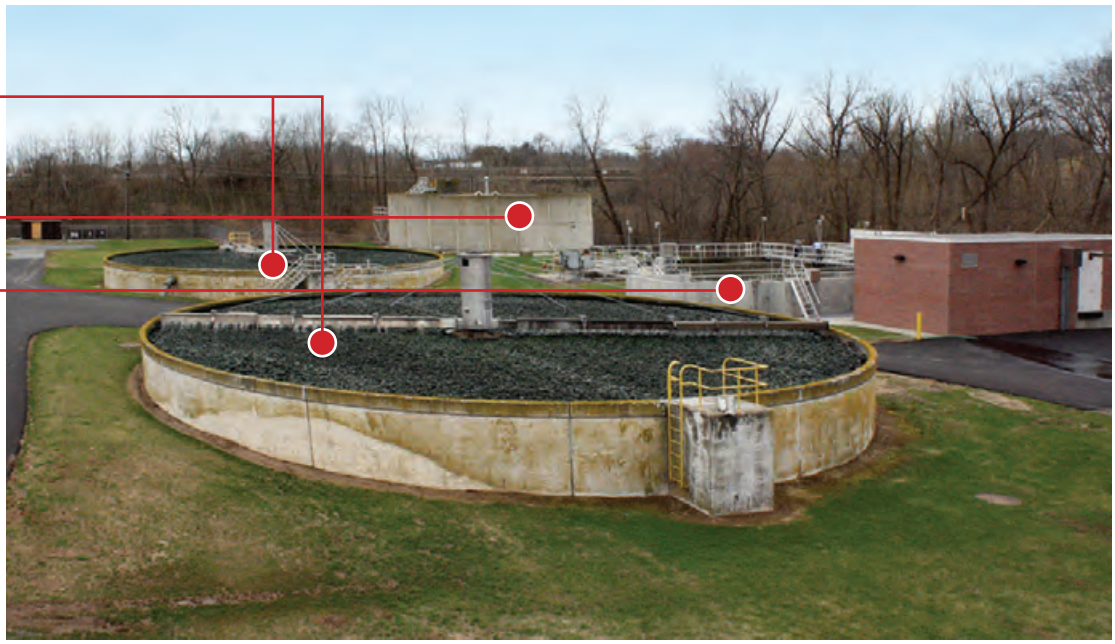
J Sludge from the primary settling tanks is pumped to the **Egg Shaped Digester** for treatment and is stored in a sludge storage tank. Liquid sludge is then hauled off site.

A GRIT REMOVAL SYSTEM

TRICKLING FILTERS C

BIO TOWER E

FLOC TANK CHAMBERS F



G FINAL SETTLING TANKS

PROCESS FLOW DIAGRAM