



MATT'S NEWSFLOW

2019 August Newsletter

MATTABASSETT DISTRICT

Preserving the environment for future generations to enjoy.

A message from the Chairman....

In this edition, we begin a series of educational articles that we believe will help the community better understand the wastewater process and the value added to the region by the Mattabassett District. Our facility is a complex industrial site designed to treat wastewater from residential and commercial customers throughout our service area and educating people on these processes will help the public gain a better understanding and appreciation for the value the District provides to the environment.



John S. Dunham, P.E.



Leadership:

John S. Dunham, P.E.
District Chairman

Arthur G. Simonian, P.E.
Executive Director

Member Towns and Representation:

New Britain

Christopher Anderson
Tonilynn Collins
Lanette Macaruso
Mary Marrocco

Cromwell

Bonnie Anderson
Doug Sienna

Berlin

John S. Dunham, P.E.
Robert Argazzi
James Fallon, P.E.

Middletown

Dale Aldieri
David Bauer
Joseph Samolis
Gerald Daley

We appreciate and support the investment required to preserve our natural resources for our future, and would like to share that knowledge with the community.

We also recognize some of the achievements of our staff who help make the District such a successful operation. For without these hard working individuals, we would not be able to run the plant as efficiently and effectively as we do.

About the District.....

The *Mattabassett District's Water Pollution Control Facility*, one of Connecticut's most efficient *Publicly Owned Treatment Works (POTW)*, processes wastewater from New Britain, Berlin, Cromwell, Middletown, Newington, Rocky Hill and Farmington. Once treatment is provided, clean water is discharged into the nearby Connecticut River. *The District* began operation in 1968, as a physical/chemical treatment facility; then in 1987, the facility was upgraded to provide secondary treatment; and recently has completed a second upgrade to provide Nitrogen Treatment that will meet the new State and Federal Standards. Our wastewater capture rate is over 99.8%, significantly above industry standards. Our plant is State of the Art and first of its kind to navigate through new federal emission regulations. Other plants, in the future, will be guided by Mattabassett's innovative direction.

All future Newsletters will be posted on our website at: www.mattabassettdistrict.org and our Facebook Page: The Mattabassett District

This newsletter features our plant's advanced biological treatment process, our second installment highlighting elements of the District Plant's operation.

For information on the District, please visit www.mattabassettdistrict.org

Social Media

The Mattabassett District has both a website www.mattabassettdistrict.org and A Facebook page - [The Mattabassett District](#)

Social Media sites will be used to communicate information on a regular basis along with technical descriptions of each portion of the Plant.

Employee Highlights

Operator Certifications

We would like to congratulate the following employees on receiving Operator Certifications:

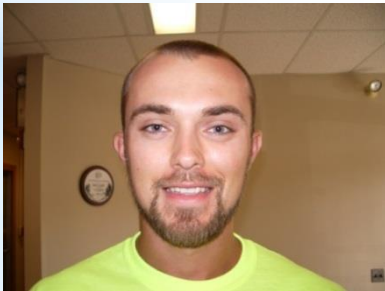
Seth Harris – Class I Operator Certification &
Class III Certification

Yiannis Lergos – Class IV Operator Certification

Recipients of Spotter Awards

We would like to congratulate employees on receiving a Spotter Award. The District Managers have “**spotted**” instances in which employees have taken exceptional initiatives.

Elaine Brousseau, Eric Bruscoe, Tim Comstock,
Andrzej Laz,
Matt McClimans, & Adam Warzecha



Seth Harris
Class III Operator

Seth joined The District in September, 2018 as an Operator on 3rd Shift. He recently passed his Class 1 followed by his Class III Operator Certification. Congratulations Seth!



Peter Stankovics
Assistant Maintenance Mgr.

Peter was promoted to Assistant Maintenance Manager on February 4, 2019 after 19 years with the District in the Maintenance Department.

Process of Wastewater from Homes to our Plant

How does wastewater get to the Mattabassett Facility in Cromwell?

There are many steps and processes involved in collecting wastewater for treatment.

- Wastewater is discharged from your homes and businesses through underground sewer pipes maintained by property owners.

- From there, it discharges (usually through gravity) into the municipal sewer system located in your street and on right of way land.

- The sewer pipes collect the wastewater effluent into large pipes and sometimes through pump stations within the communities of New Britain, Middletown, Berlin, Cromwell and portions of Rocky Hill and Newington.

- The communities must maintain good collection systems to prevent backups and pipe failures underground which also requires annual capital improvements for long term protection.

- From the community collection system, the wastewater travels underground into Mattabassett's 66" diameter concrete sewer trunkline. This line is nine miles long and travels through three communities before reaching Mattabassett's plant.

- The trunkline is extremely important and must be maintained to prevent backups caused by excessive flows during high rainstorm events.

- The entire process, from the time a drop of effluent leaves your home until it arrives at Mattabassett, can take anywhere from one hour to as much as eight hours depending on where you live and how high the flows are.

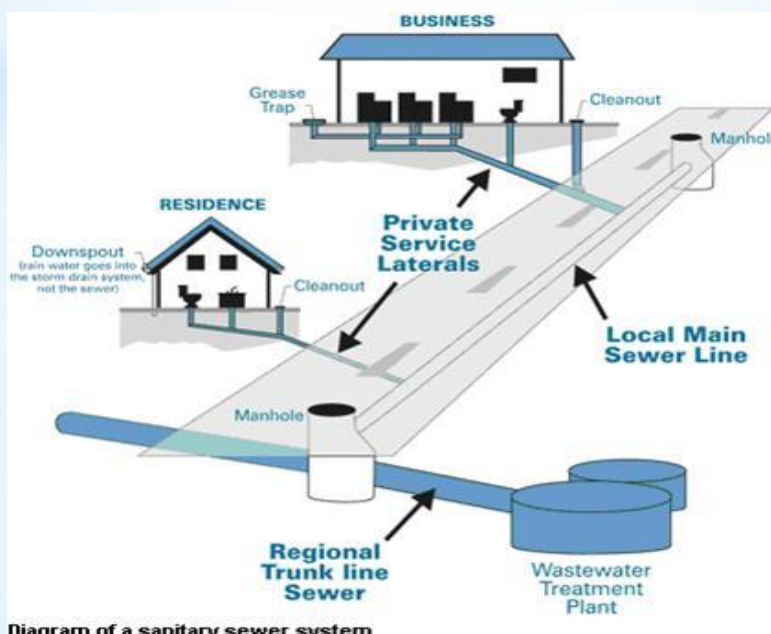


Diagram of a sanitary sewer system

Technical Process of Wastewater Treatment System

This newsletter focuses on the entire treatment process which is explained and diagrammed on the following page. In future updates (posted on our website and Facebook page), we will highlight a specific portion of the treatment system to further explain how wastewater is processed and cleaned.

The Treatment Process

The Mattabassett District Water Pollution Control Facility is designed and has the capacity to treat an average 35 million gallons a day (MGD), also accepts and treats septage and grease from septic tank cleaning trucks and liquid biosolids from other wastewater treatment plants.

The Mattabassett District employs a sophisticated process to remove dissolved solids, organic material, and nutrients in wastewater. This process regularly removes at least 98% of these pollutants. Between May 1st and October 15th, the District disinfects the effluent with Sodium Hypochlorite before discharging to the Connecticut River.

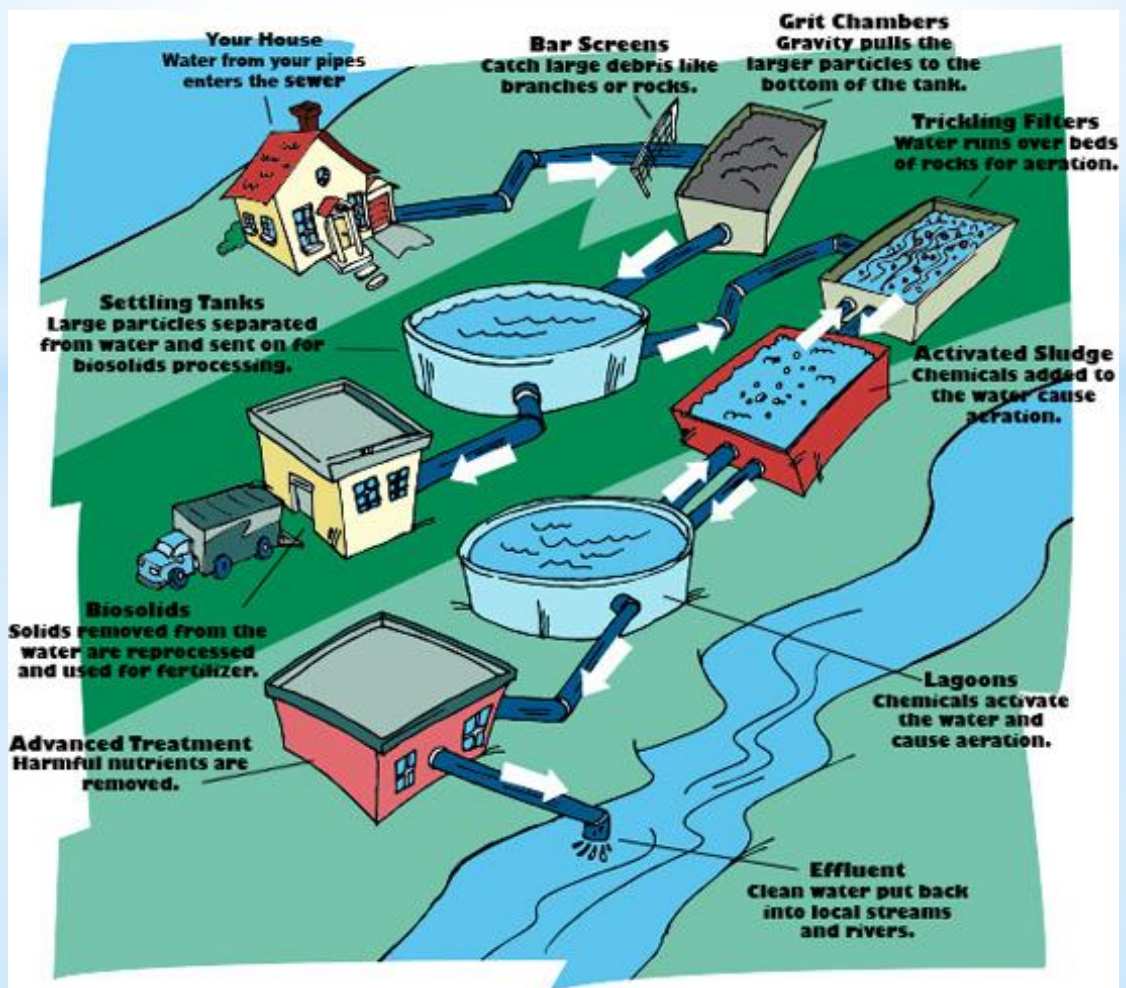
Liquid Treatment

The District maintains a nine mile concrete trunkline sewer which ranges in size from 60" to 72" diameter. This trunkline conveys wastewater from New Britain, Berlin, Cromwell, and parts of Middletown. The wastewater then flows through two ½" bar screens to remove large debris which could potentially cause clogging issues downstream. The wastewater is then pumped into two grit removal tanks, which slow the flow of wastewater to one foot per second, causing heavy inorganic particles and grit (sand, egg shells, coffee grounds, etc.) to sink to the bottom.

Next, four large one million gallon rectangular tanks (primary clarifiers) settle out and remove solids, while also skimming floating solids such as fats, oils, and grease. These solids are then pumped into two, 500,000 gallon storage tanks before being dewatered and incinerated.

Our six, one million gallon aeration tanks begin the secondary treatment and nitrification/denitrification process, where bacteria present in the wastewater remove the dissolved organic matter, nutrients, and ammonia, which is toxic to aquatic life. From the aeration tanks, the liquid biomass flows into six Final Clarifiers, where movement is slowed to remove and recycle the biomass back to the aeration tanks. Clear liquid from the Final Clarifiers then flows into a Mixing Chamber where sodium hypochlorite kills disease-causing bacteria. The District routinely provides treatment at the 98% to 99% levels of all monitored parameters. This is significantly higher than the minimum requirement of 85%. The disinfected effluent flows through the outfall line - two hundred sixty feet from shore - into the 160-foot long diffuser pipe twenty feet below the surface of the Connecticut River. At an average daily flow of 20 MGD, this whole process takes approximately 6-8 hours.

Final Clarifier



Did you know?

Mattabassett uses 35,000 gallons of potable water each day. More importantly, we use over one million gallons of our own treated water saving more than \$125,000 each month...

Biosolids Treatment

From the Biosolids Storage Tanks, biosolids are pumped into three centrifuges. These centrifuges spin the liquid biosolids to dewater the solids to a 25% mixture, which is called "cake". The cake is then pumped into our incinerator, where the biosolids are completely combusted in 19 tons of "boiling" sand heated to 1400° Fahrenheit.

The Mattabassett District is the first incinerator in the United States to meet the new stringent EPA regulations in the country. The sterile ash is disposed of at the District's ash disposal landfill located on the Berlin/New Britain line.

Odor Control

Acknowledging the importance of odor control, we also monitor emissions from our facility and measure removal efficiency. The number of complaints have dropped 90% over the past five years. The odor control system consists of chemical scrubbers, a Bioway tower, and six activated carbon/coconut media scrubbers.

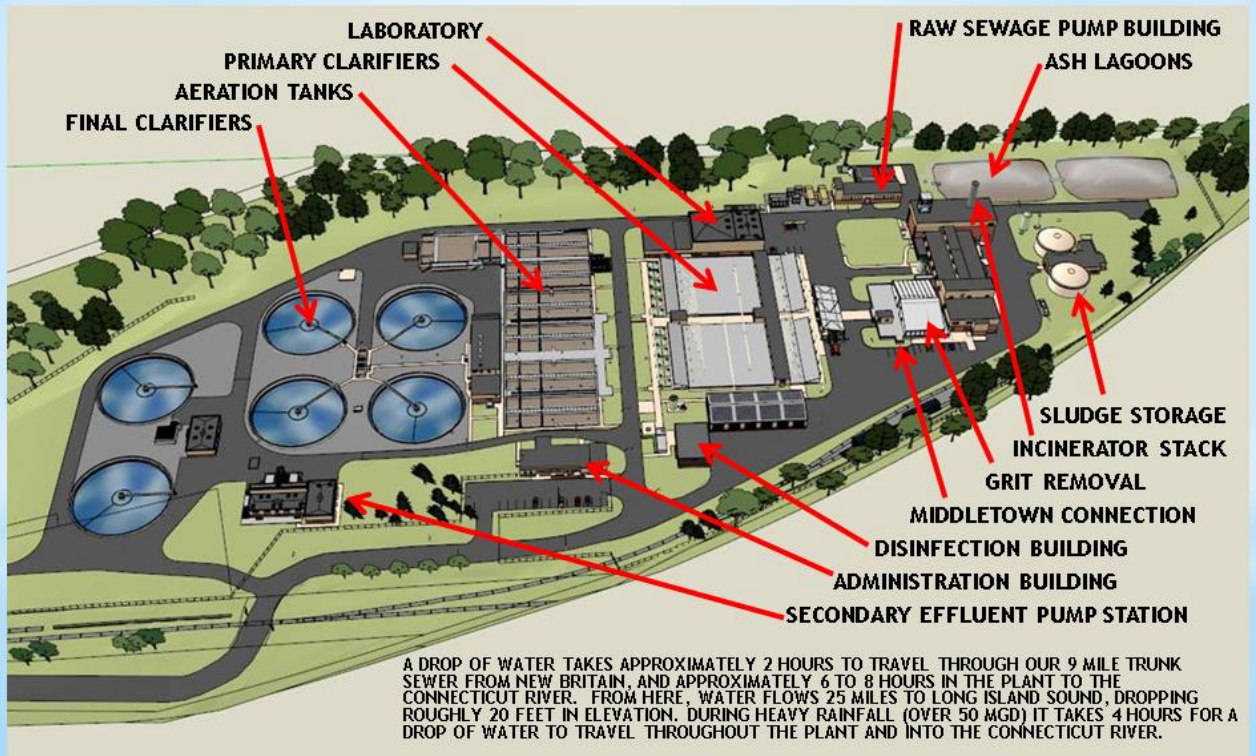
To date, The Mattabassett District has spent over \$6.3 million on our odor control systems, and we are constantly evaluating and refining our methods and our equipment. In addition to this, we spend over \$100,000 annually on maintenance and carbon media replacement. Our underlying stated goal has always been to be a good neighbor. To this end, we are committed to making certain that our facilities are odor free.

SECONDARY TREATMENT

35 MGD AVE
55 MGD PEAK

PRIMARY TREATMENT

35 MGD AVE
110 MGD PEAK



Thomas J. Serra



It is with great sadness that we announce that one of our Board Members, Thomas J. Serra, who represented the City of Middletown has passed away.

Tom's history with Mattabasset dates back to his earlier career days, working as a carpenter during the original construction of the plant in 1968. Tom served on many committees, including the Nitrogen Upgrade Project in 2014. He served on our Board for nearly five years, from March 3, 2014 - February 9, 2019, at which time he passed away. He was instrumental in Middletown successfully joining the District in 2014. We will truly miss Tom on the Board, he was such a passionate, energetic, individual who added such value to our mission.

Matt's NewsFLOW! You may wonder why we selected this as the name of our newsletter.

MATT is obviously short for Mattabasset. However, it's also the name of the fish on our website, www.mattabassettdistrict.org. And it's also the name of the real fish that swims in an aquarium in the lobby of the wastewater treatment facility in Cromwell. The water in the aquarium is actually effluent – water taken from the facility after it has been cleaned and treated. **The effluent is so clean that the fish can survive for many years without extra treatment.**

Matt is a Gourami, they are referred to as anabantids or labyrinth fish. Gourami's make a wonderful addition to the passive community aquarium adding brilliant color and diversity. Large Gourami fish species are very graceful swimmers that have unique coloration and color patterns, and work best in a community aquarium.

