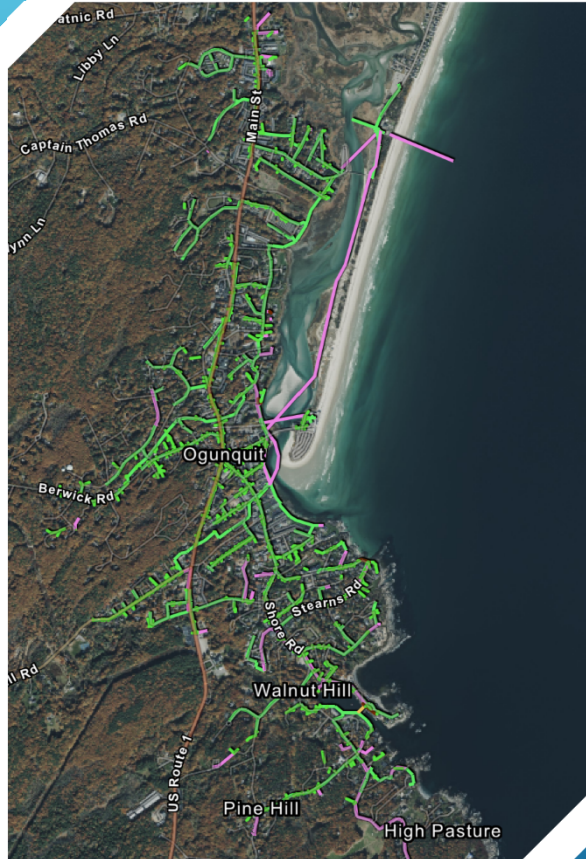




Ogunquit
SEWER DISTRICT

Our goal is to make the cleanest water for environment, at the lowest cost to the rate payers.

Alex Buechner
Superintendent
alex@ogunquitsewerdistrict.org



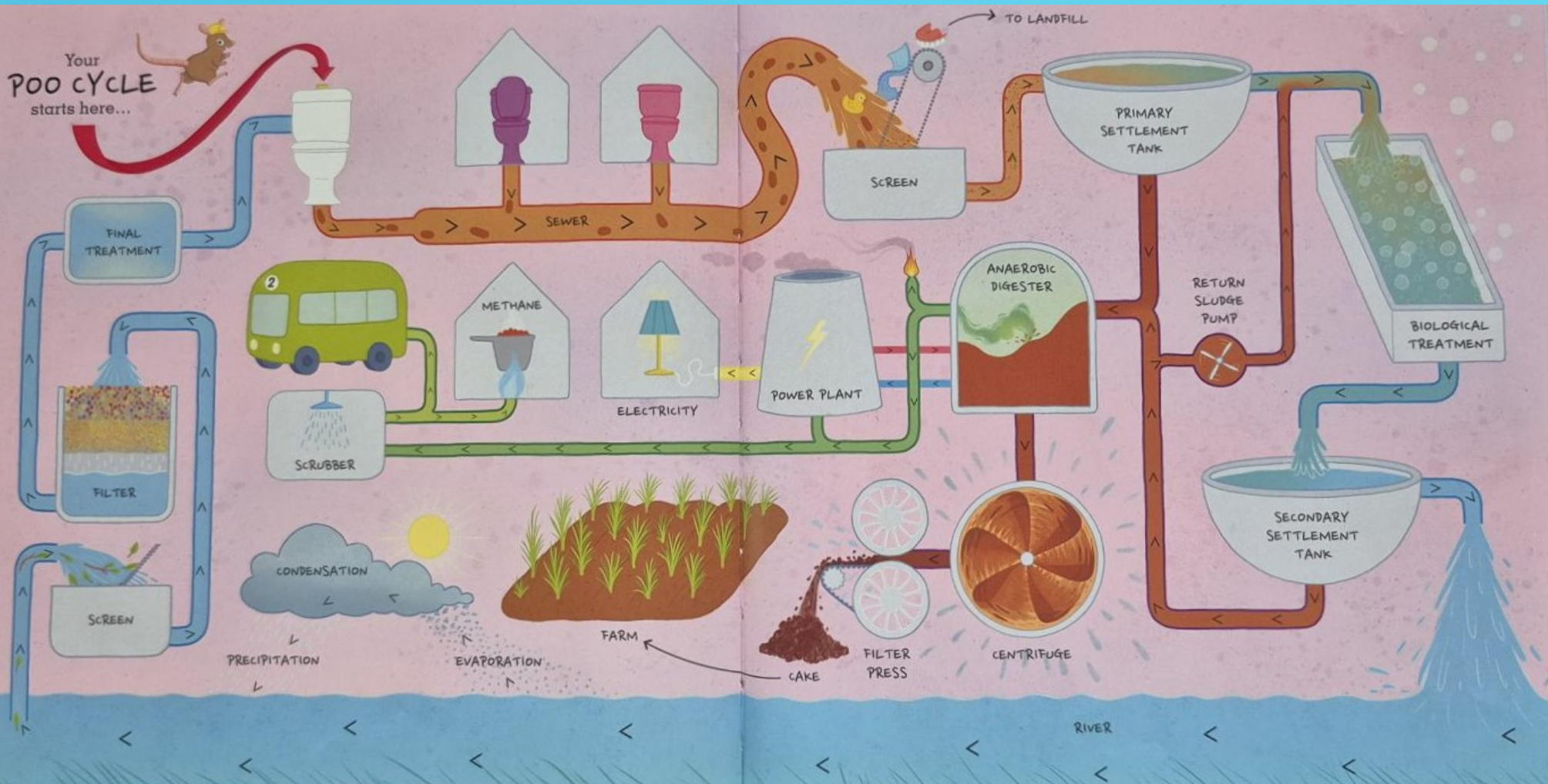
- ▶ Crew Size: 7
- ▶ Residential Customers: 1,671
- ▶ Commercial Customers: 241
- ▶ Gravity Sewer: 17.4 miles
- ▶ Pressurized Sewer: 6.3 miles
- ▶ Pumping stations: 13
- ▶ Permit flow: 1.28 MGD monthly average
- ▶ Winter flow: 0.3 MGD
- ▶ Summer Flow: 0.8 MGD

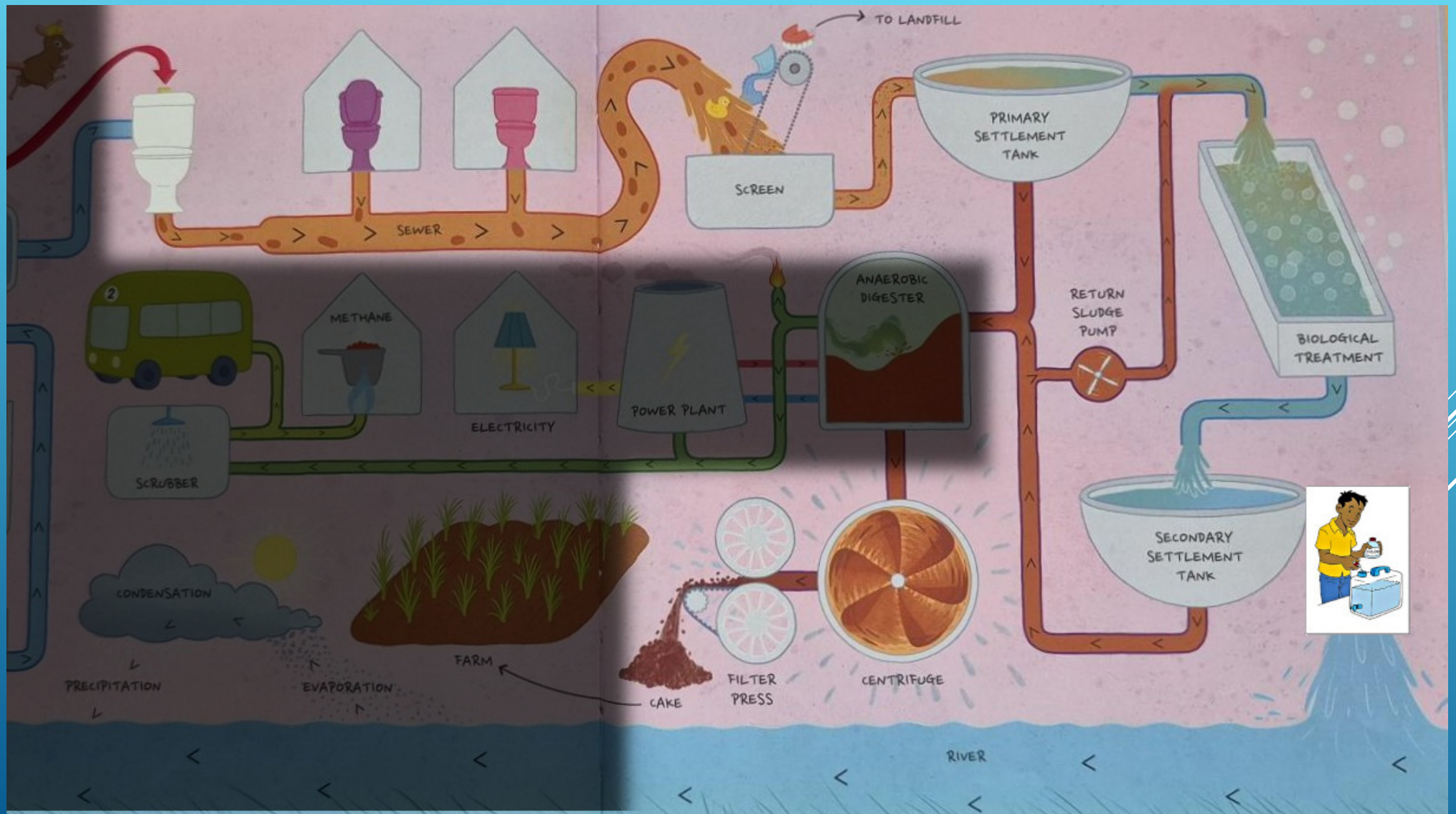
ABOUT US



HOW DOES IT
WORK?

Your
POO CYCLE
starts here...







- Removes trash and other large items
- Removes inorganic grit (small rocks and sand)
- Material is disposed of at a landfill



PRELIMINARY TREATMENT

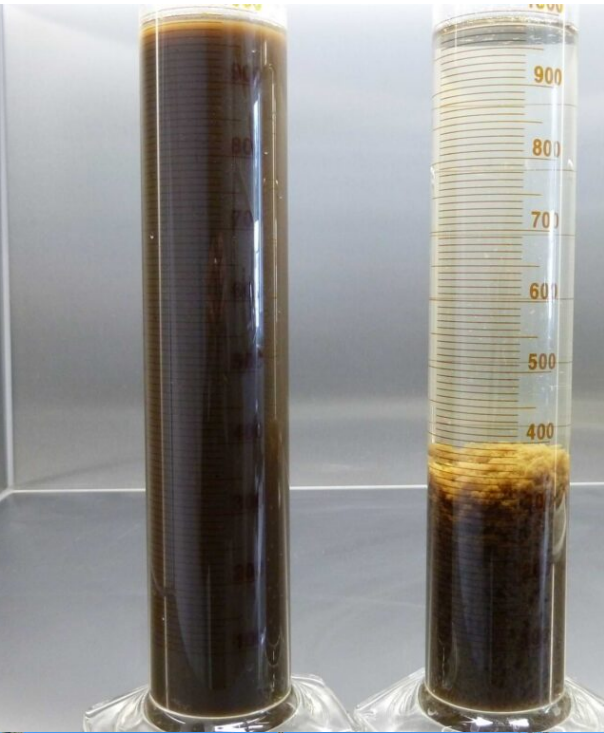


- Wastewater is fed to microorganisms and mixed with air to speed up biodegradation
- Carbon and nutrients (nitrogen & phosphorous) are converted into more microorganisms
- Bacteria form clusters or “floc” that become more dense than water



BIOLOGICAL TREATMENT

(ACTIVATED SLUDGE)



- Clean water floats to the top and flows out to be disinfected in the next step
- Dense microorganism colonies sink to the bottom to form a layer of sludge
- Sludge is recycled back to the bioreactors to be fed again



CLARIFICATION

(SETTLING)



- As microorganisms grow, some must be removed from the system
- Sludge is conditioned with a cationic (+) polymer to create larger particles
- When put under pressure, water is squeezed out to reduce the volume
- Sludge is hauled to landfill for disposal



DEWATERING

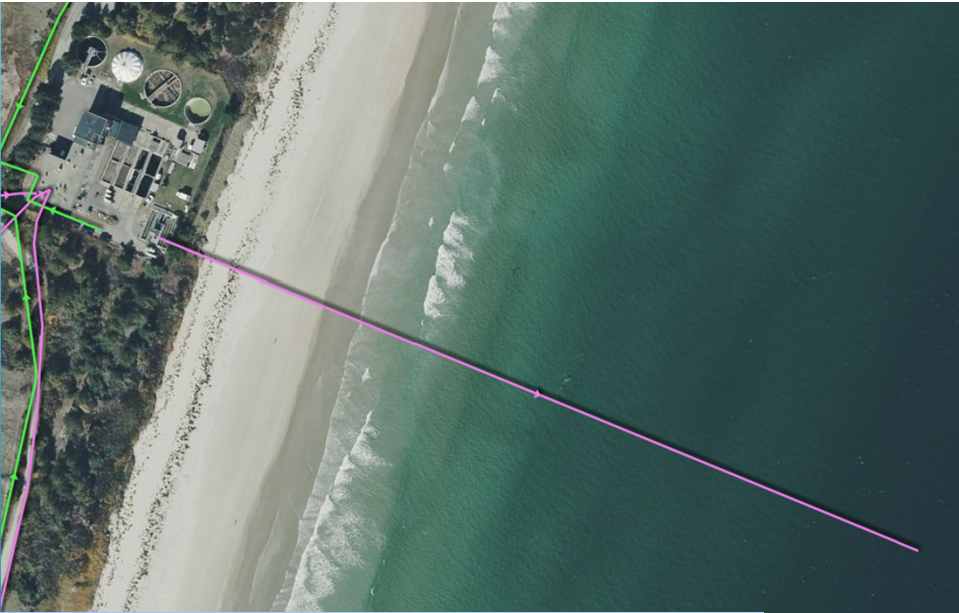
(BIOSOLIDS PROCESSING)



- Sodium hypochlorite (bleach) is added to kill any pathogens that remain in the clean water
- Sodium bisulfite is added to remove residual chlorine



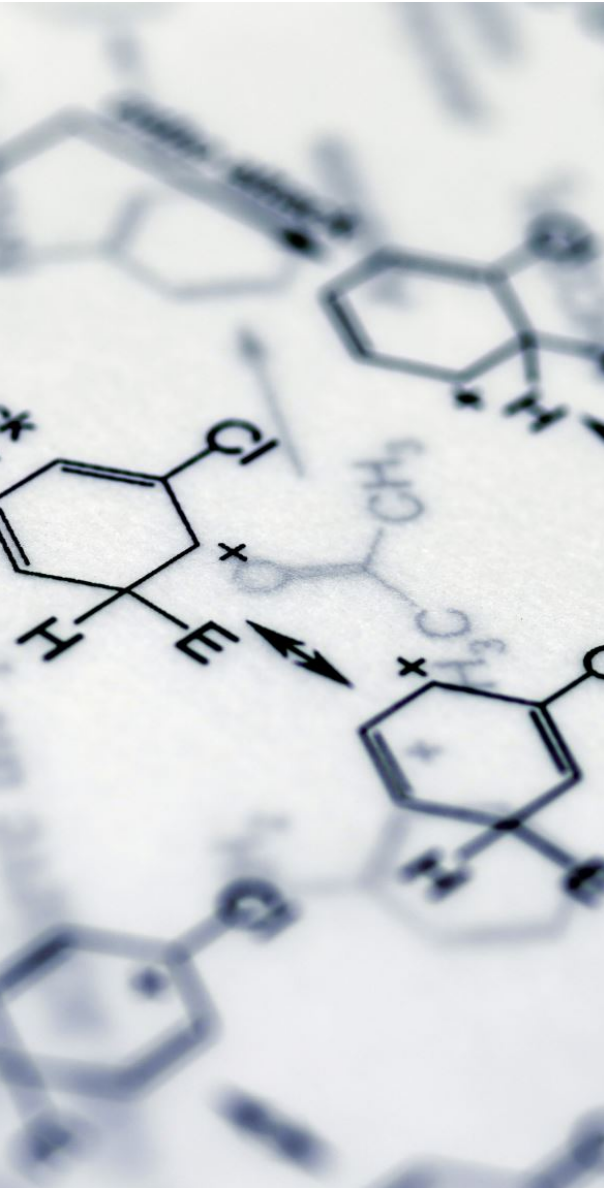
DISINFECTION & DE-CHLORINATION



- Treated water is tested regularly to ensure standards are met
- Discharged 0.25 miles off the beach via 14" outfall pipe

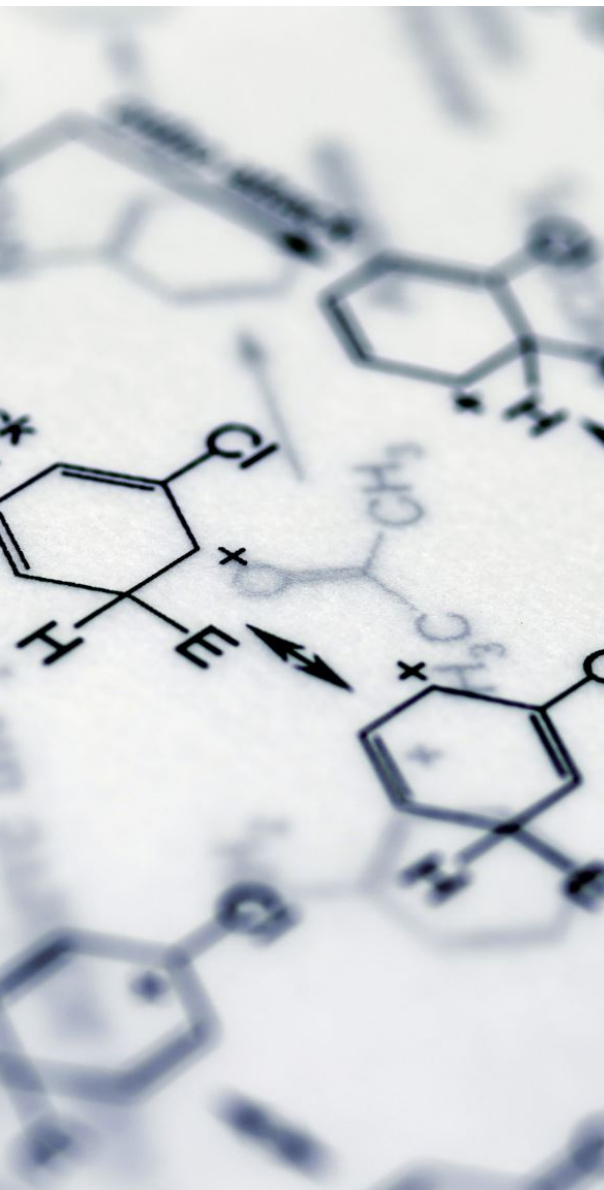


EFFLUENT DISCHARGE



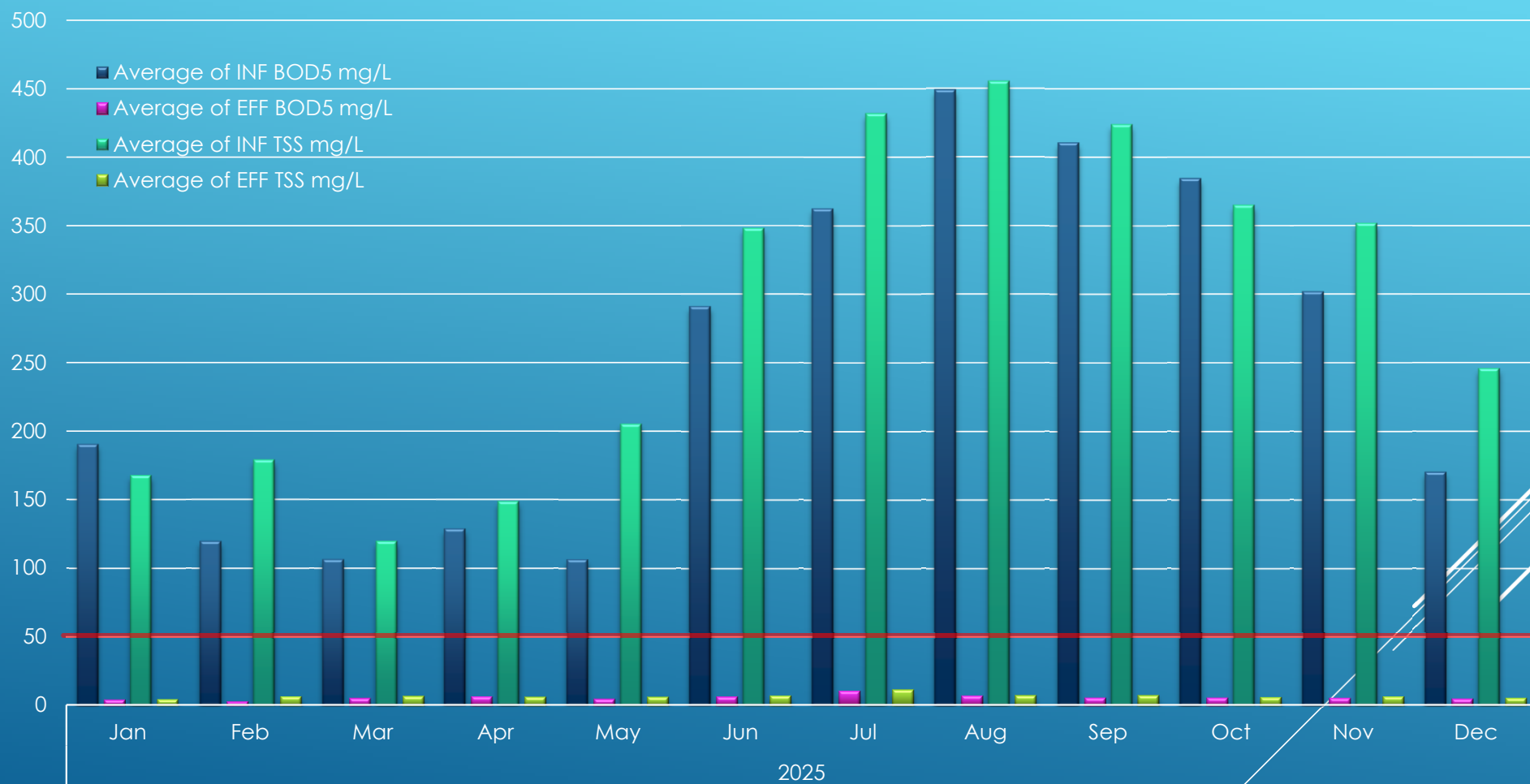
- BOD (Biochemical Oxygen Demand)
Organic strength of a sample based on how much oxygen is consumed
- TSS (Total Suspended Solids)
Filterable residue of a sample
- Total Residual Chlorine
- Fecal Coliform
- pH
- Low level Hg
- Toxicity

CONTAMINANTS MONITORED



- BOD average: 5.0 mg/L
- TSS average: 5.0 mg/L
- Total Residual Chlorine average: <0.01 mg/L
- Fecal Coliform average: <1.0 col/100 ml
- pH average: 7.0 s.u.
- Low level Hg average: 0.004 mg/L
- Toxicity: 100% survivability and reproduction

MONITORED RESULTS



CHALLENGES WE FACE





SEA LEVEL RISE AND INCREASED FLOOD RISK

- As part of a DOT grant funded project, at risk process tank elevations were raised above the flood plane
- District purchased 17 acres west of RT 1 and added a 10% surcharge fee to sewer bills to relocate the treatment plant in the future
- District is in the process of completing a Climate Adaptation study to highlight areas of concern



AGING INFRASTRUCTURE

- Most WWTF in the United States were built in response to the 1972 Clean Water Act
- Most of these were 75% - 85% funded with federal grants
- OSD is in the process of raising our debt limit to help spread the cost projects out over time
- Phase 2 upgrade includes: bar screen and clarifier replacement, aeration tank rehab, and generator replacement
- Upgrades must be a part of the process and accounted for in the budget



AGEING WORK FORCE

- Bureau of Labor Statistics indicate that over one third of the nations licensed wastewater operators were nearing retirement age in 2019.
- Number of licensed operators in Maine has decreased from 800 to 600 in the last 10 years



BIOSOLIDS DISPOSAL

- What goes down the drain ends up in the biosolids
- In 2019 Maine enacted L.D.1911 and became the only state in the country to ban the beneficial use of all biosolids
- Competition for landfills has increased the cost of disposal by >200%
- OSD annual biosolids disposal budget is currently \$110K and expected to continue to rise
- Indefinite landfill disposal is not sustainable



secureFLUSH™ TECHNOLOGY

6x42 PACKS



252 AMAZINGLY
FLUSHABLE* WIPES

*Safe for well-maintained sewer and septic systems. Not recommended for use with basement pump systems.

IMPROPER USE OF SEWERS

- Items that should never be flushed include:
 - "Flushable" wipes
 - Cooking oil and grease
 - Feminine hygiene products
 - Dental floss
 - Medications
 - Cigarette butts
- Only flush the three "P's"!

BONUS TOPIC: STORM WATER MANAGMENT

The background is a solid blue color. A diagonal line runs from the top-left corner towards the center. This line creates a dark blue triangle in the top-left corner and a lighter blue trapezoidal shape on the right side. The word "QUESTIONS?" is written in white, uppercase letters in the center of the image.

QUESTIONS?