

Annual “Nutrient Optimization” Progress Report

Portland Water District – Scott Firmin

April 1, 2019

Casco Bay

- CBEP Casco Bay Plan Goals
 - Habitat
 - Nutrient Pollution
 - Community Connection
 - Mobilize knowledge and resources

- Efforts to characterize Casco Bay

- EEWWTF 2017 Permit renewal

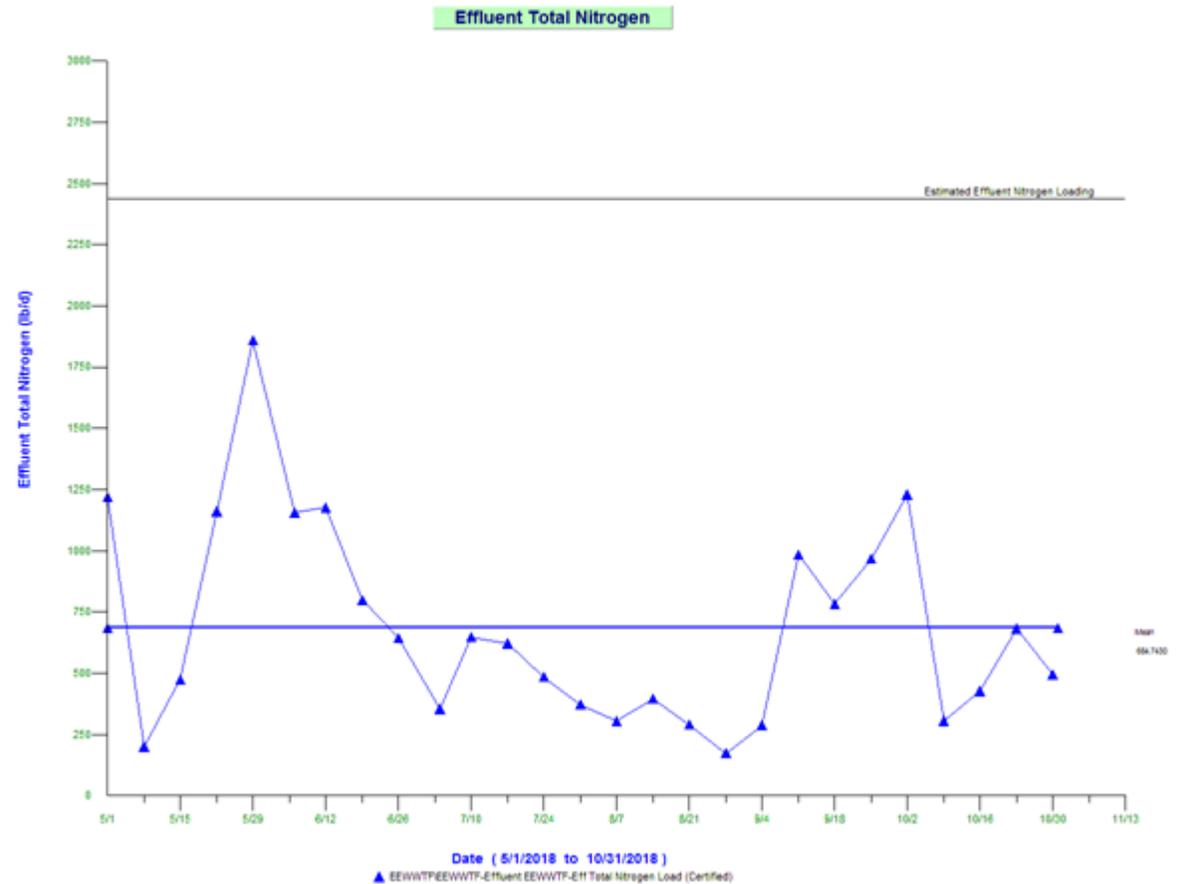


EEWWTF Effluent Permit

- Requires weekly nitrogen testing (May – October)
- Requires “nutrient optimization” through an adaptive management approach – using the facilities we have in place
- Annual “Nutrient Optimization” Progress Report
 - Seasonal average nitrogen loading
 - Discuss efforts in past year
 - Identify actions for the next year

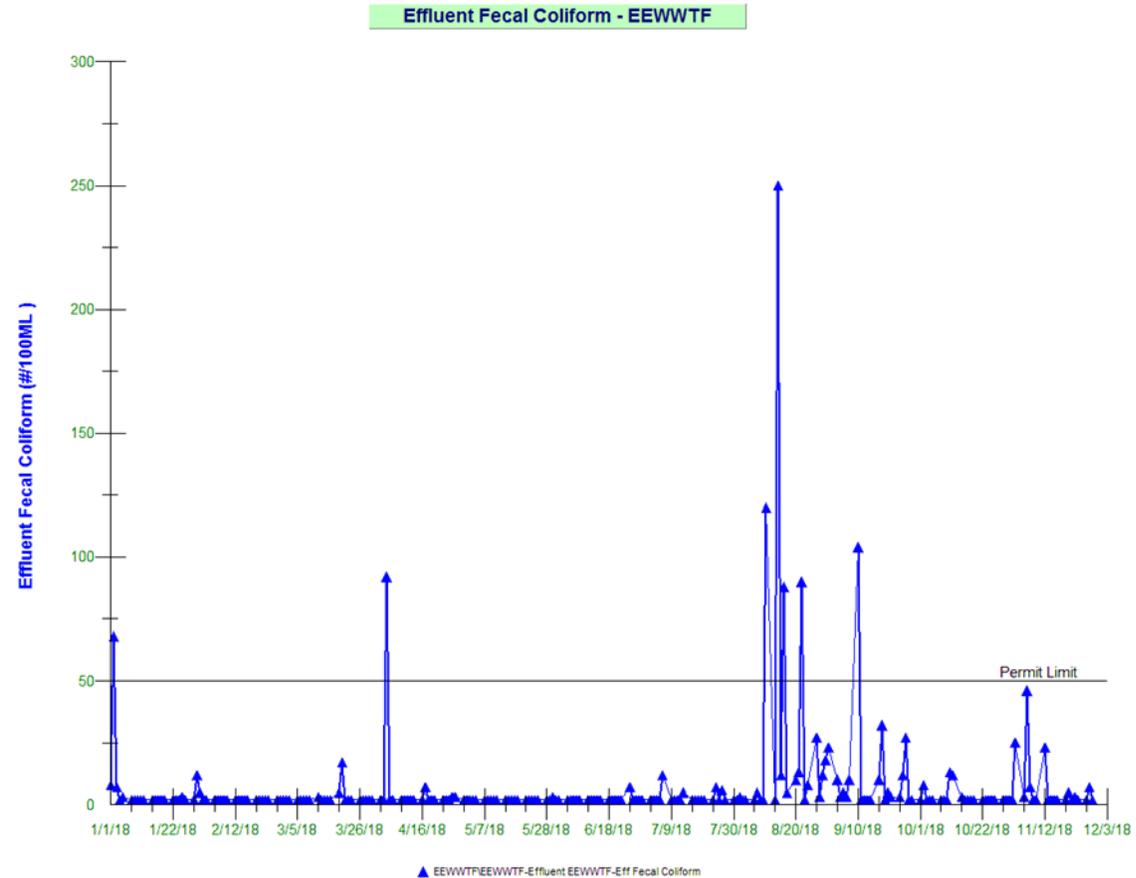
Nitrogen Seasonal Loading Reduction

- Historical Loading – 2,437 lb/d
- 2018 Seasonal Load – 685 lb/d
- Reduction of 72 percent



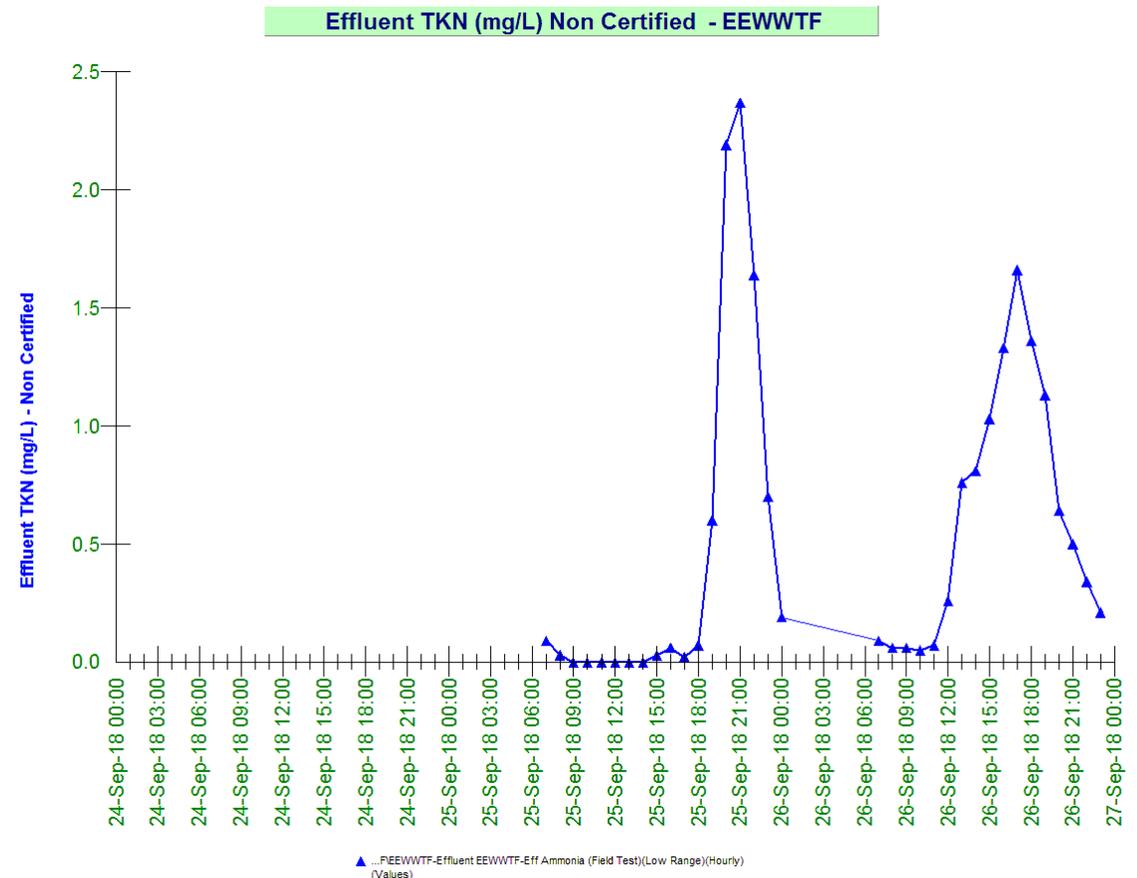
Challenges

- Transition
- pH control
- Fecal coliform reduction



2019 Plan

- Increase recycle rates
- Identify possible ammonia “breakthrough”
- Continue process sampling to improve disinfection system performance



EEWWTF Nutrient Optimization

- 72 percent reduction in effluent loading in 2018
 - Efforts will continue in 2019 with a focus on nitrogen reduction and the performance of the disinfection control system
- No regulatory mandate for a nitrogen permit limit
- The Portland Water District is engaged
 - On-going efforts at the EEWWTF
 - CBEP Nutrient Council
 - City of Portland Integrated Planning
- Other sources of nitrogen in Casco Bay should look for “nutrient optimization” or reduction opportunities