

Industrial treatment at the Pease Wastewater Facility



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For the next 30 minutes or so...

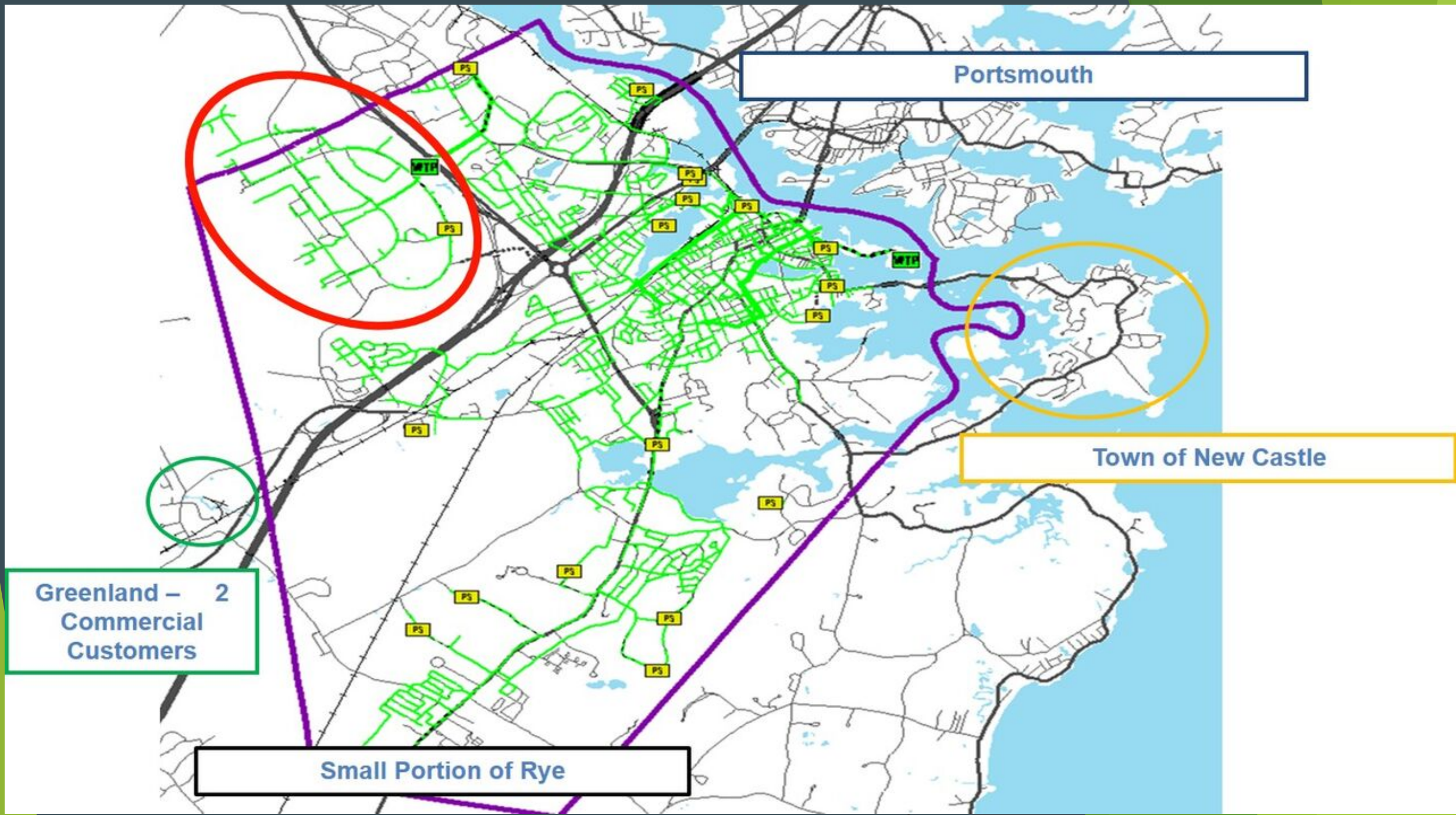
- ▶ Virtual tour of the Pease Wastewater Treatment Facility
- ▶ Influent wastewater characteristics
- ▶ Impact of industrial wastewater on plant operations
- ▶ Future improvements



Pease Wastewater Treatment Facility

- ▶ Serves the Pease International Tradeport
 - ▶ 11 miles of collection system (10% of the total)
 - ▶ Serves industrial and commercial customers





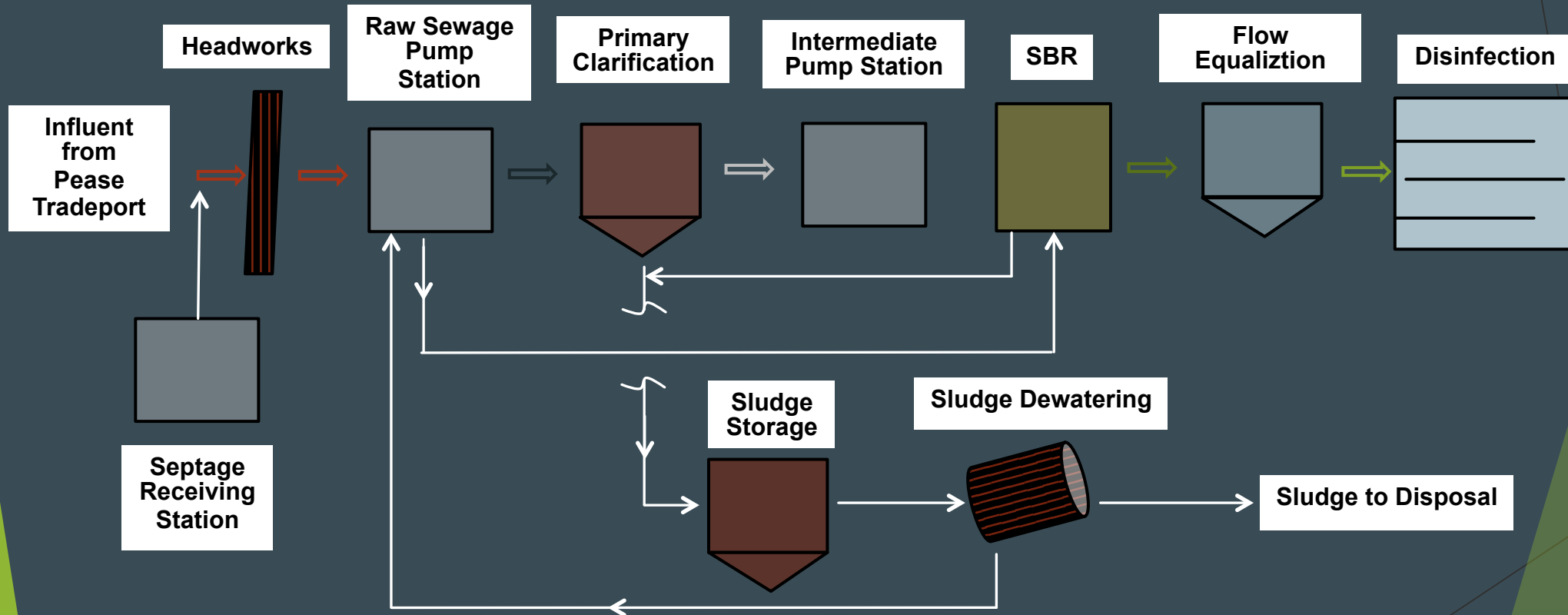
Pease Wastewater Treatment Facility



- ▶ Originally a trickling filter plant owned by the Air Force
- ▶ Facility upgrades included
 - ▶ Septage receiving station
 - ▶ Headworks
 - ▶ Sequencing batch reactor (SBR) for secondary treatment
 - ▶ Effluent flow equalization
 - ▶ Sludge storage and dewatering system



Pease Wastewater Treatment Facility



Virtual tour: septage receiving station



Virtual tour: influent and primary treatment



Virtual tour: secondary treatment



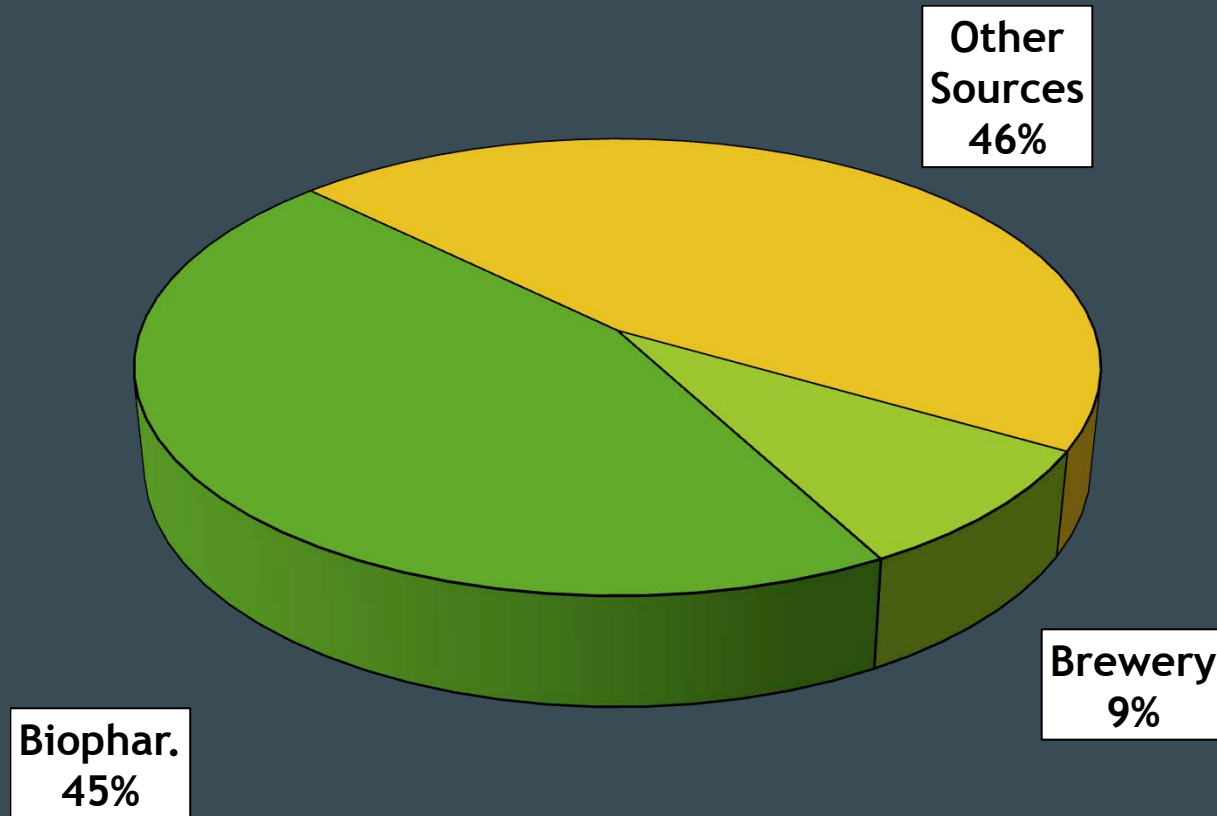
Virtual tour: flow equalization and disinfection



Virtual tour: solids handling



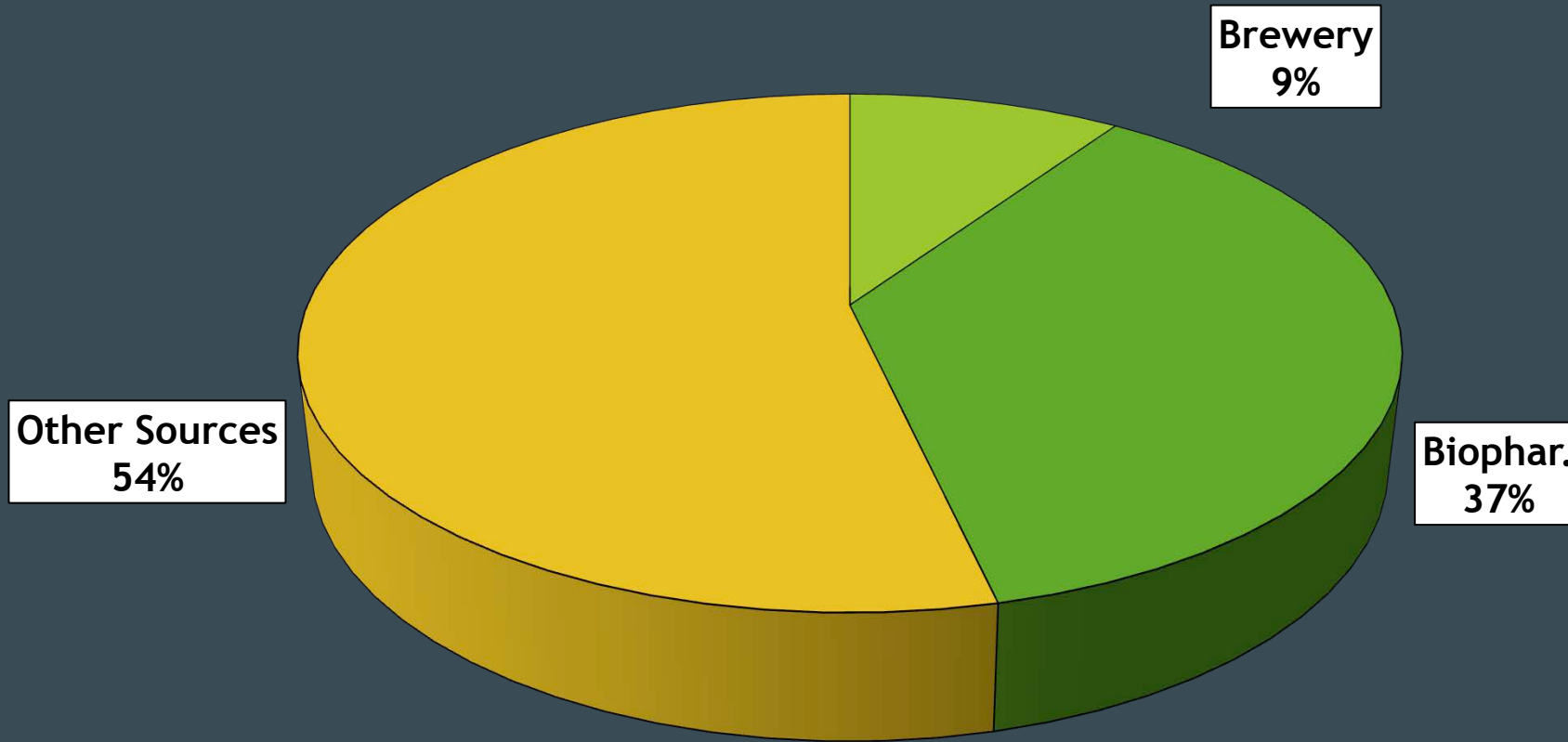
Sources of influent flow



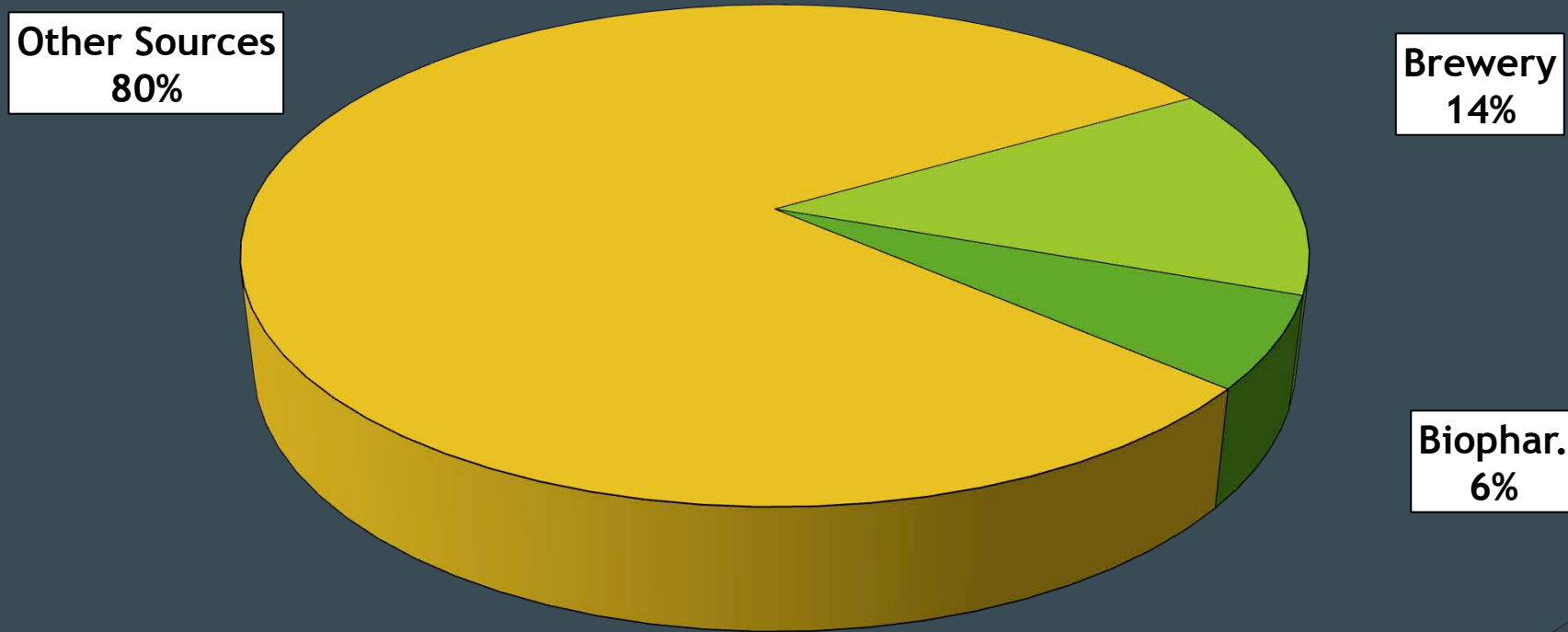
- ▶ Pease receives flow from two significant industries:
 - ▶ Biopharmaceutical
 - ▶ Brewery



Wastewater influent characteristics: BOD loading



Wastewater influent characteristics: TSS loading



Operational challenges: flow and load cycles

- ▶ Low weekend flows resulted in flow and load variations
- ▶ Bypassing primary clarifier
- ▶ Slowly injecting septage over the weekend



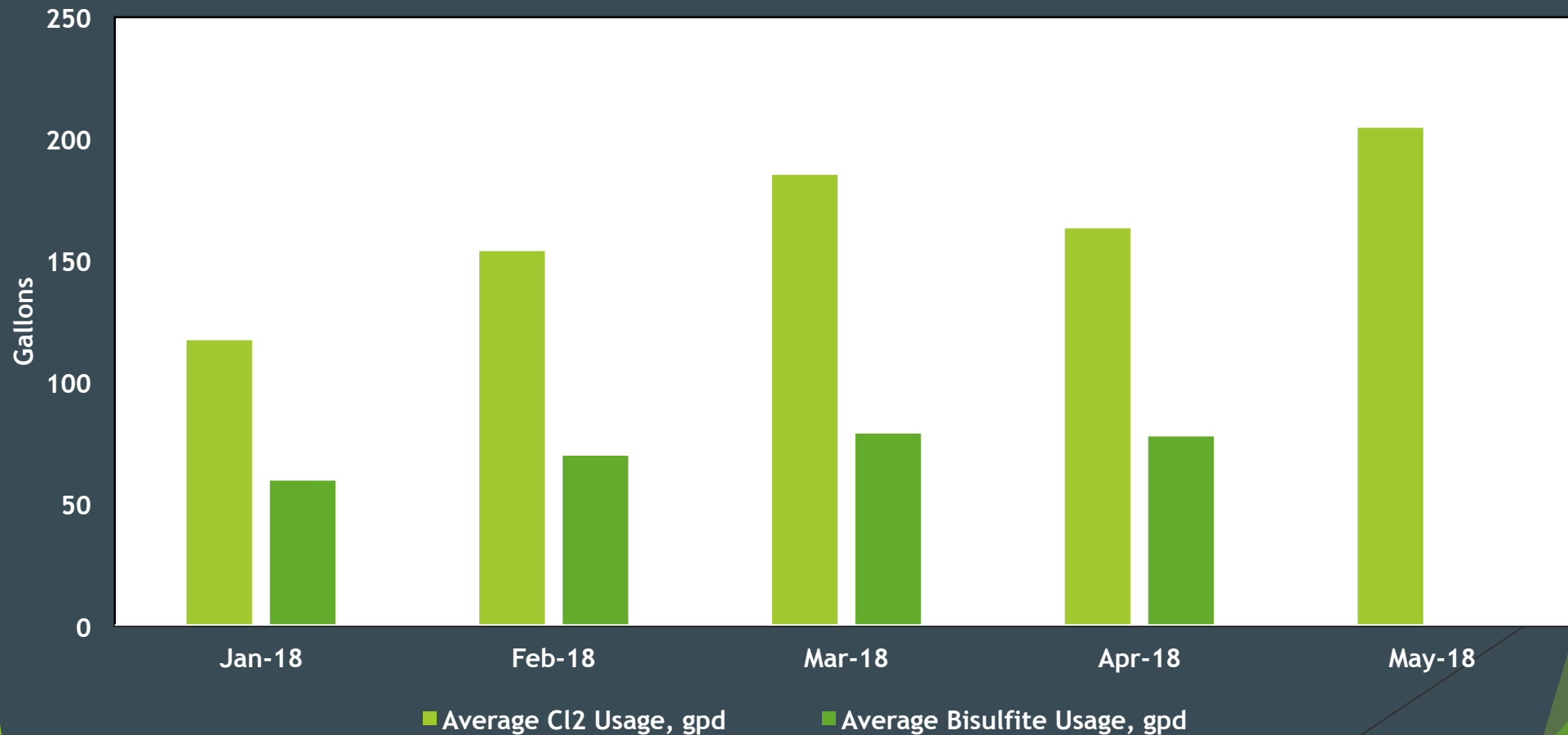
Operational challenges: disinfection efficiency



- ▶ Fecal coliform limit fairly strict
- ▶ Discharges to tidal estuary with shellfish harvesting areas
- ▶ High residual needed to consistently meet disinfection requirements



Sodium hypochlorite and sodium bisulfite usage



Ammonia addition to improve disinfection efficiency



- ▶ Ammonia hydroxide added prior to NaOCl addition to form monochloramines
- ▶ Very stable, effective disinfecting agent



Future improvements

- ▶ Plant is beginning a series of upgrades:
 - ▶ New headworks
 - ▶ Primary clarifier repair
 - ▶ UV disinfection to replace chemical injection system
 - ▶ Replacement and upgrade of solids handling processes including volumetric wasting



Questions??

