

Weston & SampsonSM

transform your environment

Brewery Process Wastewater: Strategies for Reducing Costs, Paperwork, Pollution & Headaches

VT Craft Brewers Conference 2023

Where to Start?

- Each property has its own requirements
- Each brewery has its own waste profile
- How does this process work?
 - Plan in advance!
 - Gather data on your operation
 - Optimize your process

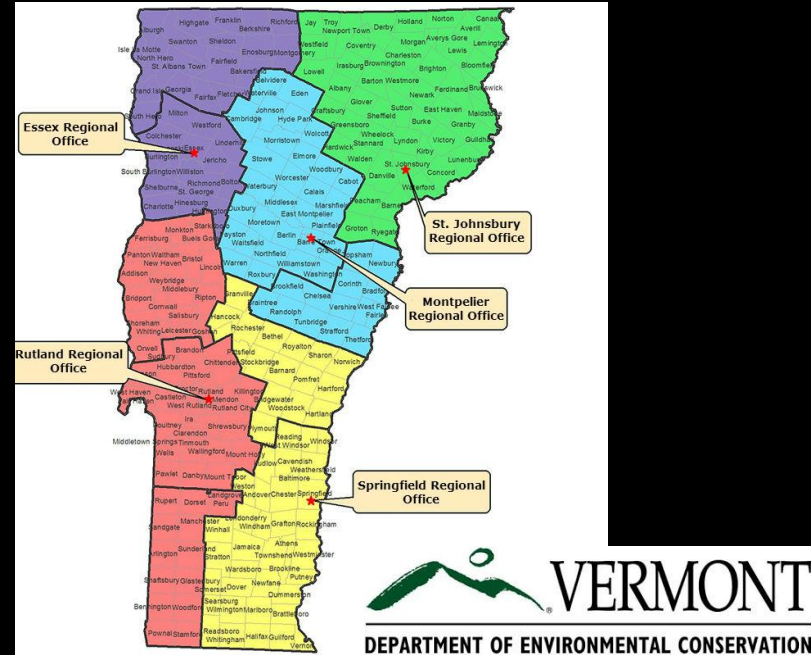
Know Your Wastewater

- Types of waste
 - Grain, trub, first rinse, bad beer
- Quantity
 - Total volume per day, peak flow rate
- Quality
 - BOD & TSS



Regulatory Considerations

- Local
 - Industrial Ordinance
 - Surcharges
- State/Federal
 - Wastewater
 - Pre-Treatment



Rural Permitting

- No municipal sewer scenario
- Potential approvals needed:
 - State WW permit (regional office)
 - State Indirect Discharge Permit
- Plan in advance



Permitting In Town

- For operations in towns/cities with WWTFs
- Potential approvals needed:
 - Wastewater allocation
 - Industrial WW
- Build good relationships with town staff
- Inform in advance

VT DEC Pre-Treatment

- > 5% of WWTF's flow or load
- Pre-Treatment determination form:

<https://tinyurl.com/k286sz2u>

- New Pre-Treatment Coordinator:
Heather Collins

Other State Permits

- VT Agency of Agriculture
 - Non-sewage waste transfer permit
- VT DEC Solid Waste Program
 - Onsite composting (> 100 cy)
 - Hauler licensing
 - Aren't involved with farms

Regulatory Considerations

- Plan for the future!
- What's the right approach? Weigh:
 - Money
 - Time (at brewery, in office)
 - Additional process complexity
- Consult with a *process WW* engineer

Pollution Reduction

1. Sidestreaming
2. Pump & haul
3. Equalization tankage
4. Pre-treatment



Sidestreaming – What?

- Off-spec product
- Solids
- First rinse runnings
- Spillage from racking, kegging, canning
- Waste beer from taproom
- Foam from growler fills



Sidestreaming – Where?

Divert high-strength wastes away from the WWTF:

- Reuse (animal feed)
- Compost/anaerobic digestion
- First rinse management





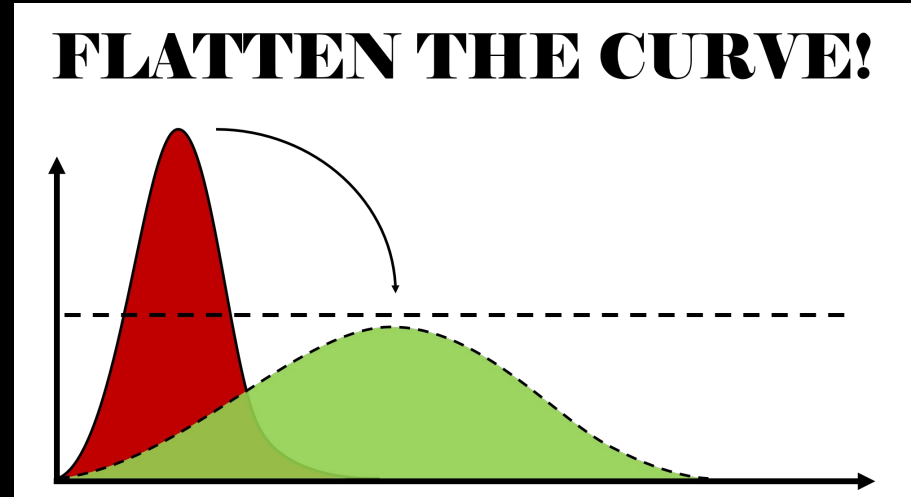
Pump & Haul

- Temporary storage
- Contract a septic hauler
- Agreements with a disposal facility
- Low capital cost, high O&M cost



Equalization (EQ)

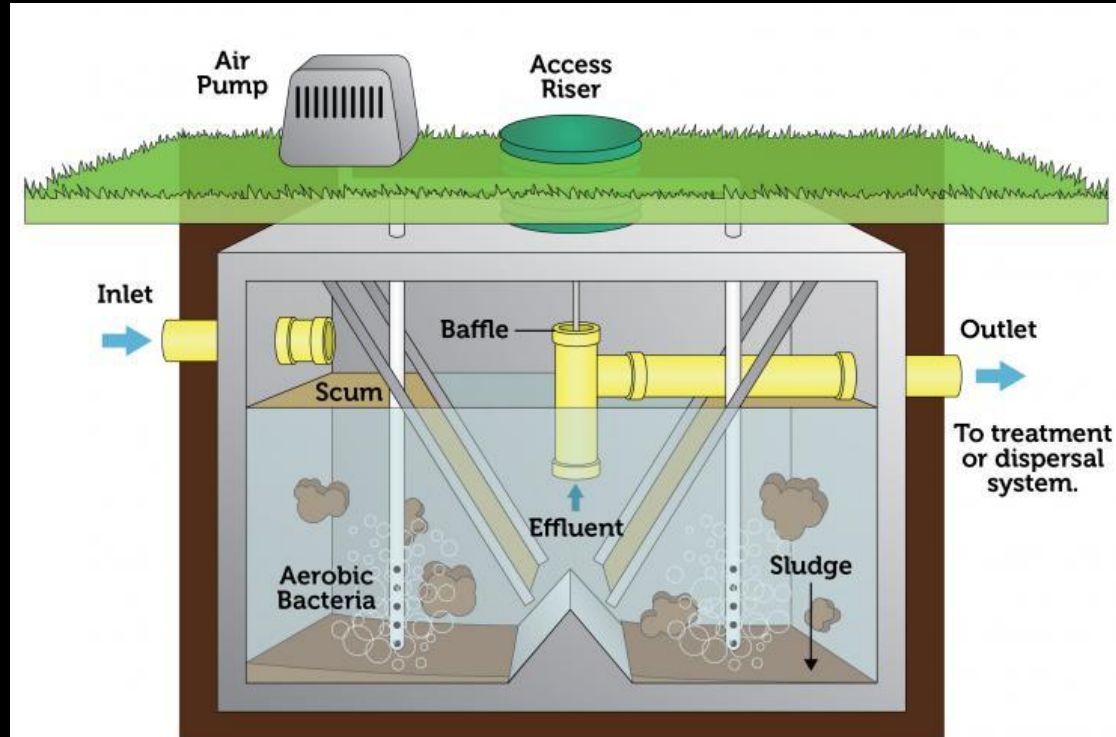
- No reduction in strength
- Store in tanks
- Pump out overnight
- Remove solids upstream



Wastewater Pre-Treatment

- Used when DIY efforts aren't enough
- Treatment train approach for mitigating solids, pH, BOD, TSS
- Many proprietary technologies available
- Consult with a *process WW* engineer

Pre-Treatment Schematic



Pre-Treatment Tech



Which Strategy?

- Location
- Spatial constraints
- Capital costs, O&M costs
- Municipal surcharges
- Every case is unique, consult an expert!

Questions?