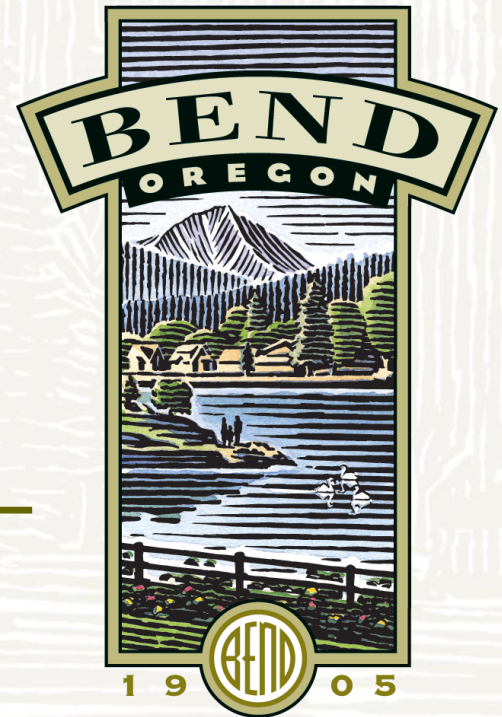


Pretreatment Issues to Consider with Microbrews

*NACWA Conference
2013*



Kelly Graham

*City of Bend Industrial
Pretreatment*

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Overview



- History, Microbrews and WRF
- Waste per barrel and when it becomes a concern
- Top six issues to consider
- Plan for the future
- Conclusion
- Questions

History



Breweries

- Started with two brew pubs
- One grew to a medium size brewery
- Now have 17 brew pubs
- Hard Cider and Mead Brewing

Water Reclamation Facility

- Started with 4 million gpd
- Plant expansions for the last 10 years
- Currently 6 million gpd
- More expansion beginning now
- IFAS system will create more room

Microbrew Barrels Brewed



- One barrel, or bbl = about 31 gallons
- Possible 80 – 100 gallons waste for each barrel brewed
- Bend's busiest microbrew pub does between 40 and 80 bbls per month
- Wastewater discharged between 3200 and 8000 gallons per month
- Most will do batch discharges

Medium Sized Brewery



- 22,000 to 30,000 bbls per month
- 1.5 to 2 million gallons of wastewater each month
- This is not steady as there are higher brewing months in different seasons
- Lessons learned from bigger brewery can be applied to microbrews
- Where is the magic number when small becomes large?

Six Main Issues to Consider



- pH, both low and high- 4.0-12.0, corrosion in lines, pump stations
- BOD loading, soluble food source
- Solids removal, spent grain, yeast
- Odor control problems
- High heat discharge
- Batch discharges, slug loads, stop flow device (also used for pH adjustments)



Pump Station Stand Pipe

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Manhole degradation, rusting rim and exposed concrete.

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How We Control Discharges



- Wastewater Discharge Permit, if BOD loading is a concern for local limits, also limits volumes, ppd BOD
- High Strength Surcharge, some may choose to pay extra for treatment
- Sewer Use Ordinance, guides pH, temperature, solids

Plan for the future



- Plan now for future expansions
- It helps to be involved early in the process
- Four of our seventeen are expanding
- Most microbrews are not going to cause many problems
- We saw issues when the discharge was more than 5% of our plant BOD loading.

Conclusion- What to do when a microbrewery comes to town.



- Find volume- how many bbls per month?
- Require pH control, solids removal
- Determine BOD loading for your treatment plant
- Odor control for neighborhoods, pump stations
- How will you control discharge, permits, surcharges?
- **Don't be afraid, enjoy the beer!**



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