



A SUMMARY OF UTILITY USAGE RATIOS FOR CRAFT BREWERS

(John Mercer / Deschutes Brewery, Inc.)

Purpose

Establishing utility usage trends per barrel is a useful tool for budgeting annual utility demand. Budgeting provides guidance to shareholders and lenders on future performance of the company, and creates operational goals for plant operations. These trends are also useful to establish a baseline to highlight inefficiencies in the process, and for benchmarking your brewery utility demand compared to other brewers of all sizes.

Method

18 brewers were selected to participate in this survey, ultimately 6 brewers were able to respond. Each brewer received a spreadsheet to fill out for actual number of brews per month, average cold wort volume per brew- per brewhouse, and actual utility usage per month for 3.5 years. The key is that all the calculations are done in the same way. Size of the brewers who submitted data ranged from 40,000 to 450,000 bbls/yr.

Future

A lot of interest was expressed in this topic from many craft brewers. Summer is not the best time to ask brewers for this type of information as it is the busy time of year for just about all brewers. This data will be published in an upcoming Technical Quarterly, please participate if you have this data.

Kilowatt Hours Per Barrel Brewed

- Total cold wort produced / Total kilowatt hours
- Brewers A&B have a similar climate
- Brewers C-F also have a similar climate
- Includes all electrical uses

Therms Per Barrel Brewed

- Total cold wort produced / Total therms
- 1 therm = 100,000 BTU
- Includes all energy users, including building heat

Incoming Water Per Barrel Brewed

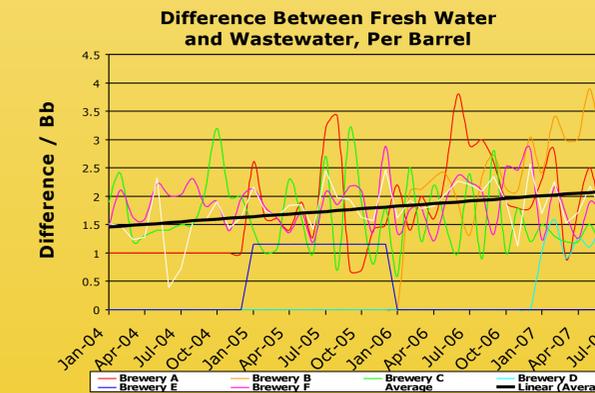
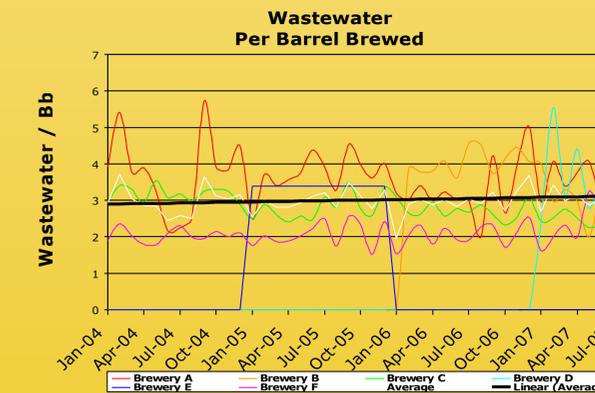
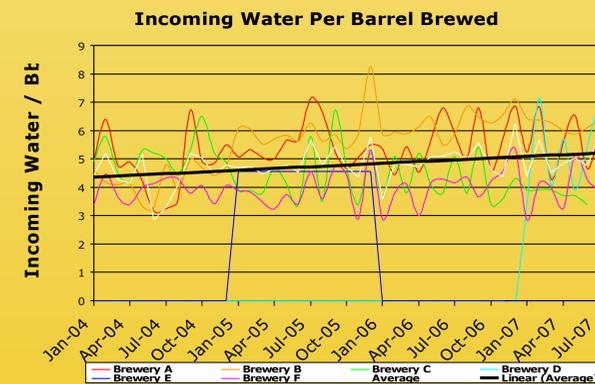
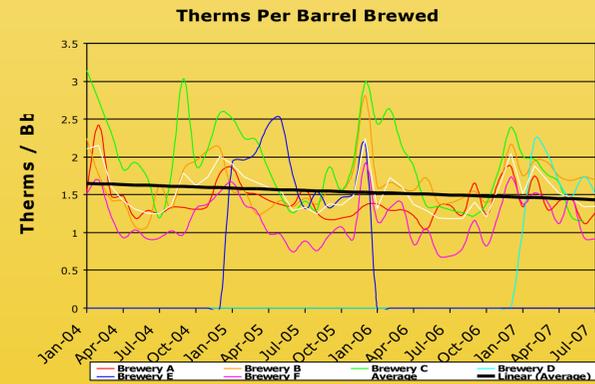
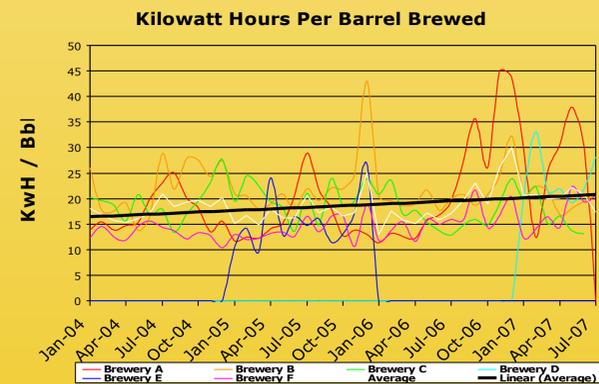
- Total cold wort produced / Total water
- Incoming water includes all uses- cooling tower, boilers, irrigation, sanitary, etc.

Wastewater Per Barrel Brewed

- Total cold wort produced / Total wastewater
- Process wastewater only, does not include sanitary wastewater

Water and Wastewater Difference

- Incoming water/bbl – Wastewater/bbl
- Represents all water uses; including evaporation, water in spent grain, packaged beer, etc.



Kilowatt Hours Per Barrel Brewed

- Range is 35 kwh/bbl
- Mean is 18.8 kwh/bbl
- Peaks in December may be effects of holiday down time
- Valleys in the summer reflect higher production with reduced fixed costs
- It appears that the overall trend is slightly upward of the brewers surveyed

Therms Per Barrel Brewed

- Range is 2.4 therms/bbl
- Mean is 1.6 therms/bbl
- Similar seasonal peaks and valleys as seen in kwh/bbl, higher per bbl therm rates in winter with the need for building heat
- Overall trend is decreasing

Incoming Water Per Barrel Brewed

- Range is 5.4 bbls water/bbl
- Mean is 4.8 bbls water/bbl
- Most brewers appear flat to slightly increasing
- One brewer is in the midst of a dramatic downward trend

Wastewater Per Barrel Brewed

- Range is 4.2 bbls wastewater/bbl
- Mean is 2.6 bbls wastewater/bbl
- Most brewers have a decreasing trend
- It appears an overall theme is the bigger the brewery, the smaller the ratio

Water and Wastewater Difference

- Range is 2.9 bbls/bbl
- Mean is 1.5 bbls/bbl
- Notice "suspect data" for all data points less than 1.0
- Results vary widely, some trending up, some trending down, some flat